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The Effect of Spoiler Types on Enjoyment

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The Effect of Spoiler Types on Enjoyment

An *Honors Thesis Proposal* submitted in partial fulfillment

of the requirements for Honors Studies in Psychology

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Abstract

The belief that story spoilers are irksome is prevalent in society. However, prior research (Leavitt & Christenfeld, 2011, 2013) has found that spoilers increase enjoyment of short stories, while two follow-up studies (Johnson & Rosenbaum, 2015; Levine, Betzner, & Autry, in press) have failed to confirm these results and, in fact, found the opposite result – that spoilers decrease enjoyment. While these differential results are puzzling, they may be explained by the different spoilers types used in these studies. Therefore, in the present research, we examined whether the discrepant results were due to the spoiler types employed by using all three spoiler types along with an unspoiled condition. We also addressed other methodological differences by using both a single-item and multidimensional measure of enjoyment. Lastly, we examined the role of individual traits, including need for cognition, print exposure, and transportability in moderating the effect of spoilers on enjoyment. We found that spoilers had no significant effect on overall enjoyment, but that some spoilers did significantly decrease suspense, movingness, and lasting impression scores; no spoilers increased enjoyment. The disparities and similarities between our findings and those of prior studies are discussed.

The Effect of Spoiler Types on Enjoyment

During the midnight release of *Harry Potter and the Half-Blood Prince* in Dallas, an individual screaming "Snape kills Dumbledore," drove past fans outside a Barnes & Noble bookstore, effectively spoiling two crucial details: the death of a beloved character and, seemingly, the allegiance of a morally-ambiguous character (Nuckols, 2007). In contemporary society, *spoilers*, even by the mere composition of the word, connote the ruination of the enjoyment of narratives such as movies and television shows. The development and colloquial use of the phrase *spoiler alert* as a warning that precedes potential experience-spoiling information lends further credence to this idea. However, recently there has been controversy regarding whether this prevailing belief is in fact accurate. This debate was sparked by Leavitt and Christenfeld (2011, 2013), who found that, contrary to intuition and popular opinion, spoilers positively impact reader enjoyment. Specifically, they found that readers expressed greater enjoyment for spoiled mystery, ironic-twist, and literary short stories as compared to their unspoiled counterparts. The argument was augmented when the findings of follow-up studies by Johnson and Rosenbaum (2015) and Levine, Betzner, and Autry (in press) found the conflicting result that spoilers reduce reader enjoyment. Yet, there was a key difference in these studies that may be able to explain the polar results: namely, the spoiler types employed in these studies differed. Consequently, the present study aimed to independently replicate all three existing results – by including all three different spoiler types utilized and incorporating two measures of enjoyment – while directly comparing

the effects of these different spoiler types and assessing the potential contributions of individual-difference measures, which were considered as possible moderators.

In the 2011 study, which led Leavitt and Christenfeld to conclude that spoilers enhance enjoyment, participants read three short stories of which one was unspoiled, one was externally spoiled (i.e., separately preceded by a spoiler), and another was internally spoiled (i.e., had the spoiler integrated with and presented on the same page as the story, as its first paragraph). The spoilers revealed the ending and stories were either mystery, literary, or ironic-twist stories. After reading the stories, subjects rated their enjoyment on a single question using a Likert-type scale. Participants expressed increased enjoyment for externally spoiled over unspoiled stories across the three story categories. However, the internal spoiler had no significant effect on enjoyment. Leavitt and Christenfeld posited that spoilers, or familiarity with the conclusion of a story, may lead to increased processing fluency (i.e., the easiness of information processing), which, in turn, may increase enjoyment (Reber, Schwartz, & Winkielman, 2004). Leavitt and Christenfeld (2013) directly tested the processing fluency hypothesis when they asked participants to rate ease of processing (i.e., fluency) as well as enjoyment for spoiled and unspoiled stories. The study successfully replicated the earlier findings and validated the processing-fluency hypothesis by demonstrating that spoiled stories increased enjoyment and appeared to be easier to process. Additionally, data analysis revealed that apparent ease of processing mediated the effect of spoilers on enjoyment. Taken together, Leavitt and Christenfeld's (2011, 2013) studies lead to the conclusion

that spoilers enhance the enjoyment of short stories, an effect which may be mediated by an increase in processing fluency.

While these results seem clear cut, there have been no reaffirming independent replications of these findings. In fact, recent research by Johnson and Rosenbaum (2015) and Levine et al. (in press) has found conflicting results: namely, that spoilers reduce reader enjoyment. However, the key to these contradictory results may lie in the critical differences among the Levine et al. spoilers, the Johnson and Rosenbaum spoilers, and the Leavitt and Christenfeld (2011, 2013) spoilers (see Table 1). The "short" Levine et al. spoilers were one to three sentences in length and bluntly gave away the ending without providing a summary of events or a unifying theme. The "long" Johnson and Rosenbaum spoilers were longer, two to five sentences in length, and provided a summary of events while also revealing the ending. However, they too did not include a theme. Lastly, the "thematic" Leavitt and Christenfeld spoilers were still slightly longer, three to six sentences in length, and began with a unifying theme, after which the story was summarized and the ending disclosed. Another notable

Table 1. Sample spoiler types for "The Eyes Have It."	
Spoiler Type	Spoiler
Short Spoiler	A blind man pretends to have sight as he converses with a girl on the train, in hopes of impressing her. When she leaves, he asks the next passenger about her hair length, whereupon he learns that she, too, was blind.
Long Spoiler	A blind man is sitting a train compartment, when he is joined by a girl with whom he makes small talk about the weather and their destinations, without letting her know that he is blind, attempting to both impress her and create a mental picture. When the girl leaves, he asks the next passenger about her hair length, whereupon he learns that she, too, was blind.
Thematic Spoiler	People have the tendency to put on certain personas and masks to achieve desired ends ranging from acquiring jobs to impressing individuals. The latter is the case of the protagonist, a blind man sitting alone in a train compartment, who decides that he will make small talk about the weather and their destinations with a girl who joins him in his compartment, without revealing that he is blind. When the girl leaves, he asks the next passenger about her hair length in order to complete his mental picture, whereupon he learns that she, too, was blind.

dissimilarity between the spoilers was that, while all three were outcome spoilers (Yan & Tsang, 2016), or spoilers that unveiled the conclusion, only the long and thematic spoilers could also be classified as process spoilers, or spoilers that revealed key plot elements. Additionally, while Levine et al. closely adhered to the methodology employed by Leavitt and Christenfeld, Johnson and Rosenbaum's research had two critical methodological differences. First, while Leavitt and Christenfeld and Levine et al. employed a single-item measure of enjoyment, Johnson and Rosenbaum used a 12-item enjoyment questionnaire (Oliver & Bartsch, 2010), which considers multiple aspects of enjoyment: namely, the extent to which stories are fun, moving/thought-provoking (movingness), and suspenseful, as well as the extent to which they leave a lasting impression. Second, Johnson and Rosenbaum did not have a true unspoiled condition like that used by Leavitt and Christenfeld and Levine et al.; instead, their comparison condition was comprised of a preview paragraph that did not reveal the outcome of the story. This difference gives rise to the possibility that their finding that spoilers decreased enjoyment may in fact be due in part to the control condition increasing enjoyment instead of the spoilers decreasing enjoyment, as posited.

Although there is inherent value in replication (Frank & Saxe, 2012), the present research aimed not only to replicate the aforementioned findings by utilizing all three spoiler types as well as a fourth unspoiled condition, but also to address the question of whether these dissimilar spoilers are responsible for the dissimilar results. Further, to address the methodological difference of employing different measures of enjoyment, the present study utilized both a single-item and 12-item measure of enjoyment.

Finally, this study also examined the potential contributions of individual traits, including need for cognition, print exposure, and transportability, to the effect of spoilers on enjoyment.

Need for cognition (NFC; Cacioppo & Petty, 1982), or the extent to which individuals value and enjoy critical thinking, was measured to test the hypothesis that, by increasing processing fluency, spoilers should negatively impact enjoyment for individuals with a high need for cognition. Simply stated, for individuals who value critical thinking, spoilers should decrease enjoyment by reducing the amount of required effortful thought. Print exposure, a proxy for reading frequency, was measured with the Author Recognition Test (ART; Acheson, Wells, & MacDonald, 2008; Stanovich & West, 1989) to test the hypothesis that individuals who rarely read (and, thus, have less print exposure) would be aided by spoilers due to the organizational framework they provide to these less-experienced readers. The last measure, transportability (Dal Cin, Zanna, & Fong, 2004), or the degree to which participants inserted or invested themselves into narratives, was measured to test the hypothesis that spoilers, by increasing fluency, should increase transportation – generally considered an enjoyable experience (Green, Brock, & Kaufman, 2006) – and, hence, increase enjoyment.

Summary and Predictions

Participants read four short stories of which one was unspoiled, one short-spoiled, one long-spoiled, and one thematically-spoiled (see Table 1). After completing a story, subjects indicated their enjoyment on both a single-item and 12-item scale (Oliver & Bartsch, 2010) and noted any prior familiarity with the story. When all four stories

were read, participants completed three questionnaires that measured need for cognition, print exposure, and transportability, respectively, as well as a demographic questionnaire.

The study was expected to successfully replicate the results of Leavitt and Christenfeld (2011, 2013), Johnson and Rosenbaum (2015), and Levine et al. (in press). Thus, short and long spoilers were anticipated to decrease enjoyment, while thematic spoilers were anticipated to increase enjoyment. It was also hypothesized that spoilers would reduce suspense and fun, with thematic spoilers having the strongest impact due to their revealing both a sequence of events and a unifying theme, and short spoilers having the weakest impact due to their simply revealing the outcome. Thematic spoilers were also expected to most strongly increase the extent to which stories were moving/thought-provoking and left a lasting impression due to the incorporated unifying theme, which should help readers find meaning in the story. Furthermore, spoilers were expected to negatively impact the enjoyment of individuals with a high need for cognition, high print exposure, and high transportability, and positively impact the enjoyment of individuals with the opposite individual characteristics. This effect was anticipated to be largest for thematic spoilers because they divulge multiple aspects of the stories (i.e., a theme, multiple plot points, and the outcome) and least profound for short spoilers because they disclose only the outcome itself.

Method

Participants

After being informed in the solicitation for participation that the experiment involved reading short stories, 202 undergraduate General Psychology students at the University of Arkansas voluntarily participated for credit toward a course requirement.

Materials

The experiment was administered online via Qualtrics, web-based survey software which participants accessed from one of two lab computers.

Seven stories with "twist endings" were selected for the generation of experimental materials: "Barney" by Will Stanton (1978); "The Eyes Have It" by Ruskin Bond (1989); "The Open Window" by Saki (1890); "The Reticence of Lady Anne" by H.H. Munro (1993); "The Sniper" by Liam O' Flaherty (2000); "The Story of an Hour" by Kate Chopin (Chopin & Seyersted, 2006); and "Two Were Left" by Hugh B. Cave (1958). For each story, three spoilers were generated: a short spoiler, a long spoiler, and a thematic spoiler; however, in the case of "The Story of an Hour" and "Two Were Left," short and long spoilers from Levine et al. (in press) and Johnson and Rosenbaum (2015), respectively, were utilized (see Appendices A-C for the entire set of short, long, and thematic spoilers).

In the three spoiler conditions, the spoiler for each story appeared on a webpage immediately preceding the story, like Leavitt and Christenfeld's (2011) external spoilers, and was signaled by the phrase *INFORMATION ABOUT NEXT STORY*, beneath which the spoiler was presented. The ending of the spoiler was indicated by a phrase following the spoiler, *Press the NEXT button to begin reading*. In the case of the unspoiled condition, there was no spoiler page and the participant was immediately presented with the

story. The stories themselves all appeared on three pages without any identifying

information such as the title or the author to reduce familiarity bias. The beginning was

indicated at the beginning of the first page with the phrase *START OF STORY* and its

continuation was signaled with the phrase *STORY CONTINUES* at the end of the first

page, the beginning and end of the second page, and the beginning of the third page.

Finally, the ending of the story was indicated by the phrase *THE END*.

After completion of each story, participants were shown a page designed to

assess their enjoyment of and familiarity with the story. The enjoyment components,

presented after each story, consisted of the 12-item enjoyment questionnaire (Oliver &

Bartsch, 2010) used by Johnson and Rosenbaum (2015), on which participants indicated

the applicability of 12 statements (e.g., "It was fun for me to read this story.") on a scale

of 1 (Strongly disagree) to 7 (Strongly agree**) (**see Appendix D for a complete list of the

items on the 12-item enjoyment questionnaire)**.** A question which asked participants to

rate their enjoyment on a scale from 1 (lowest enjoyment) to 10 (highest enjoyment)

and a yes-no question to assess familiarity with the story (i.e., *Have you read this story*

before?) followed on the same webpage. Following the completion of this page for the

fourth and last story, participants were presented with three questionnaires presented

on subsequent webpages to assess need for cognition, print exposure, and

transportability to study how they interact with spoilers to influence enjoyment.

Need for cognition was assessed with the 18-item version of the Need for

Cognition Scale (NFC; Cacioppo, Petty, & Kao, 1984), in which participants were asked to

determine and rate on a 9-point categorical scale from "Very strong disagreement" to

"Very strong agreement" the degree to which statements concerning critical thinking

(e.g., "I would prefer complex to simple problems.") were applicable to them (see

Appendix E for a complete list of the items in the Need for Cognition scale). Participants'

print exposure was assessed using a 40-item version of the ART (Acheson et al., 2008;

Stanovich & West, 1989), abridged from the original 100-item questionnaire. Of the 40

names used, 20 were reasonably well-known authors and 20 were psychology

researchers (see Appendix F for a complete list of items in the ART). The names were

presented in random order with a checkable box to the left of each, and participants

were able to mark any number of names (from 0 to 40) that they knew to be authors.

Participants were told that only half of the names were authors and that there was "a

penalty for guessing" to prevent participants from marking an unfamiliar name. Lastly,

transportability was measured with the 20-question Transportability Scale (Dal Cin et al.,

2004) in which participants are asked to rate statements regarding their tendency to get

emotionally and mentally involved in stories (e.g., "I can easily envision the events in the

story.") on a scale of 1 (strongly disagree) to 9 (strongly agree) (see Appendix G for a

complete list of items in the Transportability scale).

After these questionnaires, participants were presented with a page consisting

of a set of demographic questions asking participant age, gender, race, ethnicity,

education level, and whether English was their first language. Age (in years) and gender

were open-ended questions for which participants could type any response.

Concerning ethnicity, participants were asked to choose between "Hispanic or Latino"

and "Not Hispanic or Latino." The question about race was presented in a check-list

format with six options ("Other," "White," "Black or African American," "Asian," "Native

Hawaiian or Pacific Islander," and "American Indian or Alaska Native") and participants

were allowed to choose any combination thereof. The questions asking participants

whether English was their first language was a simple yes/no question. However, if

participants indicated that English was not their first language, they were asked to rate

their fluency in English on a 5-point categorical scale from "Poor" to "Excellent" on a

separate page. On the same page, participants were asked the open-ended question

"What do you think this experiment was about," which was the sole question that

appeared on that page if they indicated that English was their first language.

Procedure

Participants were recruited via Sona Systems, an online system for scheduling

and managing research participation. Before volunteering for the experiment,

participants were informed that the study involved reading short stories. To partake in

the study, participants were ushered into the lab where they were guided to one of two

lab computers in a private room and given instructions by a research assistant. The

entirety of the experiment was presented via Qualtrics web-based survey software. The

mean session time was 30.3 minutes (*SD* = 7.4).

The first page that participants saw was the informed consent form. After

completion of the form, participants were presented with the following instructions:

> *The following study will ask you to read a set of four short stories.*
>
> *Along with each story, additional information may or may not be*
>
> *included. Please read at a pace that is comfortable for you. To navigate*

through the study, click on the NEXT button at the bottom of each

page to continue reading or to go on to the next section of the

experiment.

   After each story, you will be asked a series of questions

regarding your enjoyment of and familiarity with the story

presented. Please select the answers that best indicate your

response.

   After you have read all four stories, you will be asked to complete

four questionnaires. Further instructions will be provided before each

questionnaire. Click on the NEXT button at the bottom of the page to

begin the study.

For each participant, four stories were randomly selected from the set of

seven, each of which was randomly assigned to one of four conditions: no

spoiler, short spoiler, long spoiler, and thematic spoiler. The order in which these

stories and their respective spoilers were presented was also randomized.

Randomization was performed such that, across participants, each story was

seen equally often and appeared equally often in each condition and each of the

four orders. After reading each story, participants rated their enjoyment and

indicated whether they had read the story before. When participants were

finished answering the enjoyment questions on the fourth and last story, they

completed the Need for Cognition scale, the ART, and the Transportability scale,

the components of which were all randomized. The study concluded with a set of demographic questions.

Results

Data Screening

A total of 202 subjects participated in the study, yielding 808 observations across the four conditions. Following data collection, one participant and, thus, her four (0.5%) observations were completely excluded due to a self-reported unwillingness to read the spoilers. Of the remaining 804 observations, 33 (4.1%) observations were excluded due to participants' having previously read the story, leaving 771 observations. Additionally, 21 (2.7%) observations were discarded due to an outlying per-word reading time (i.e., reading exceptionally fast) as defined by Tukey's (1977) criterion. Ultimately, 750 observations, including enjoyment ratings and reading times, were modeled.

Individual-difference Measure Scoring

NFC scores were calculated by converting the original 9-point categorical scale to one that ranged from -4 to +4 (following Cacioppo et al., 1984), with some items being reverse-scored, as needed (see Appendix E). Ultimately, individual NFC scores were obtained by calculating the mean of a participant's responses. Transportability scores were reported on a scale from 1 to 9, with items being reverse-scored as needed (see Appendix G), and the mean of the entirety of a subject's responses was taken as that subject's transportability score. Finally, ART (see Appendix F) scores were calculated by taking the number of correctly-identified authors and subtracting the number of incorrectly-identified (non) authors.
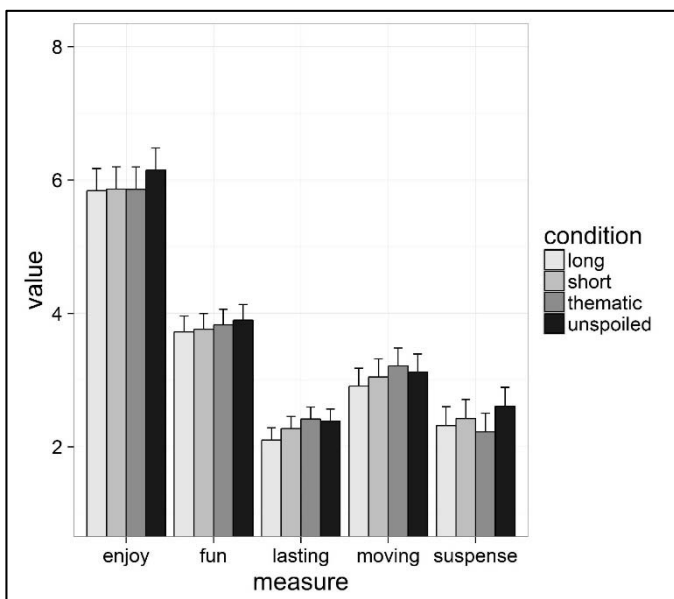
Summary of Results

Figure 1. Mean enjoyment, fun, lasting impression, movingness, and suspense scores by condition. Error bars represent ±1 SE. Note that enjoyment ranges from 1 to 10 whereas fun, lasting, moving, and suspense range from 1 to 7.

The data showed that single-item enjoyment was highest for the unspoiled stories, followed by the thematically-spoiled and short-spoiled stories, and lowest for the long-spoiled stories (see Figure 1 for single-item enjoyment means by condition). The suspense dimension of the 12-item enjoyment questionnaire was highest for the unspoiled stories, followed by the short-spoiled and long-spoiled stories, and lowest for the thematically-spoiled stories (see Figure 1). The fun dimension of the 12-item enjoyment questionnaire was highest for the unspoiled stories, followed by the thematically-spoiled and short-spoiled stories, and lowest for the long-spoiled stories (see Figure 1). The movingness dimension of the 12-item enjoyment questionnaire was highest for the thematically-spoiled stories, followed by the unspoiled and short-spoiled stories, and lowest for the long-spoiled stories (see Figure 1). Lastly, the lasting impression dimension of the 12-item enjoyment questionnaire was highest for the thematically-spoiled stories, followed by the unspoiled and short-spoiled stories, and

lowest for the long-spoiled stories (see Figure 1). Hypothesis tests and more-detailed

results are reported below.

Overall Scores by Story and Condition

Both single-item enjoyment and the four dimensions of the 12-item enjoyment

questionnaire were modeled to assess whether they were impacted by the spoiler

conditions and/or the individual difference measures. To this end, three models were

utilized. The first simply analyzed the effect of spoiler condition on enjoyment. The

second added an additional layer of complexity by analyzing the effects of both the

spoiler condition and the individual difference measures. The third and last model

added yet another layer of intricacy by analyzing not only the spoiler conditions and the

individual difference measures but also their interactions. For all three models, subjects

and stories were treated as random-effects variables.

Single-item Enjoyment. Based on the model with only spoiler condition, there

were no significant differences in enjoyment across the four conditions, $F(3, 558.51) =$

1.39, $p = .25$. Nevertheless, planned pairwise comparisons of the unspoiled condition

with each of the experimental conditions were carried out; there were no significant

differences (see Figure 1 for details). Modeling spoiler condition alongside the individual

difference measures (NFC, ART, transportability) also yielded no significant differences

in enjoyment between conditions. However, transportability was found to be

significantly and positively related to enjoyment, $t(205.9) = 2.50$, $p = .01$. This finding is

to be expected as emotional investment in a story is considered an enjoyable

experience. Finally, modeling the spoiler conditions, individual difference measures, and

possible interactions also yielded no additional significant effects with transportability serving as the only significant predictor of enjoyment.

12-item Enjoyment Questionnaire: Suspense. Mean suspense ratings by condition can be seen in Figure 1. Based on the model with only spoiler condition, there was a significant difference in suspense ratings across the four conditions, $F(3, 558.55) = 4.42$, $p = .004$. Pairwise comparisons of the unspoiled condition with each of the experimental conditions showed that long, $t(557.2) = 2.61$, $p = .009$, and thematic spoilers, $t(558) = 3.46$, $p < .001$, significantly reduced suspense, while the short spoilers did not significantly reduce suspense, $t(556.1) = 1.65$, $p = .10$. Modeling spoiler condition alongside the individual difference measures, and modeling spoiler condition, individual difference measures, and possible interactions found no additional significant effects.

12-item Enjoyment Questionnaire: Fun. Mean fun ratings by condition can be seen in Figure 1. Based on the model with only spoiler condition, there was no significant difference in fun ratings across the four conditions, $F(3, 561.49) = 0.77$, $p = .51$. Planned pairwise comparisons of the unspoiled condition with each of the experimental conditions also lead to no significant results. Modeling spoiler condition alongside the individual difference measures yielded no significant differences in fun between conditions. However, transportability was found to be significantly and positively related to fun, $t(208.1) = 3.24$, $p = .001$. Finally, modeling the spoiler conditions, individual difference measures, and possible interactions yielded no additional significant effects.

12-item Enjoyment Questionnaire: Movingness. Mean movingness ratings by condition can be seen in Figure 1. Based on the model with only spoiler condition, there was a significant difference in movingness ratings across the four conditions, $F(3, 554.68) = 2.91$, $p = .03$. Pairwise comparisons of the unspoiled condition with each of the experimental conditions showed that long spoilers significantly decreased movingness, $t(553.6) = 2.04$, $p = .04$. Modeling spoiler condition alongside the individual difference measures yielded the same pattern of data. Additionally, transportability was found to be very strongly significantly and positively related to movingness, $t(202.6) = 4.08$, $p < .001$. Modeling spoiler condition, individual difference measures, and possible interactions yielded no additional significant effects.

12-item Enjoyment Questionnaire: Lasting Impression. Mean lasting impression ratings by condition can be seen in Figure 1. Based on the model with only spoiler condition, there was a significant difference in lasting impression ratings across the four conditions, $F(3, 552.98) = 3.75$, $p = .01$. Pairwise comparisons of the unspoiled condition with each of the experimental conditions led to the conclusion that long spoilers significantly reduce lasting impression scores, $t(552.1) = 2.76$, $p = .006$. Modeling spoiler condition alongside the individual difference measures yielded the same pattern of data. Additionally, transportability was found to be very strongly significantly and positively related to lasting impression scores, $t(204) = 4.07$, $p < .001$. Modeling spoiler condition, individual difference measures, and possible interactions yielded no additional significant effects.

Discussion

In the present study, participants were randomly presented with four of seven stories, each assigned to one of four conditions: unspoiled, short-spoiled, long spoiled, or thematically-spoiled. In contradiction to the results of Leavitt and Christenfeld (2011, 2013), who found that spoilers increased enjoyment, the current research found that spoilers had no significant effect on single-item enjoyment. However, while non-significant, the data showed a pattern consistent with the findings of Johnson and Rosenbaum (2015) and Levine et al. (in press), who found that spoilers reduce enjoyment. In further confirmation of the results of Johnson and Rosenbaum, the current study found that all spoilers decreased suspense, though only thematic and long spoilers did so significantly. Additionally, both long and short spoilers decreased movingness, though only long spoilers did so significantly. Furthermore, similar to Johnson and Rosenbaum, the current study found that all spoilers decreased fun; however, these differences were not significant. While Johnson and Rosenbaum found no significant effect of spoilers on lasting impression scores, the present research found that long spoilers significantly decreased lasting impression scores, while short spoilers only did so to a non-significant extent and thematic spoilers actually increased lasting impression scores, although this effect, too, was not significant. The hypothesis that thematic spoilers would increase enjoyment and short spoiler would decrease enjoyment was not confirmed. However, the hypothesis that long spoilers would decrease enjoyment was supported by a significant decrease in three of the four dimensions assessed by the 12-item enjoyment questionnaire. While the individual difference measures were positively correlated to one another, the hypothesis

regarding a possible interaction between individual difference measures and the effect of spoilers was not confirmed. Although Johnson and Rosenbaum found that individuals with low NFC (Cacioppo et al., 1984) expressed a greater desire to read spoiled over unspoiled stories, they, similar to Levine et al. and the current study, found no significant interaction between NFC and the effect of spoilers. However, transportability (Dal Cin et al., 2004) was significantly and positively related to single-item enjoyment, fun, movingness, and lasting impression scores, confirming earlier research that found a positive correlation between transportability and enjoyment (Green et al., 2004).

The inability of the current study to completely replicate the results of Leavitt and Christenfeld (2011, 2013), Johnson and Rosenbaum (2015), and Levine et al. (in press) can be attributed to several methodological differences. The first and perhaps most important disparity lies in the possibility that the spoilers used in this research simply may not have successfully captured the essence of the spoilers they were intended to mimic. This concern is most pressing when considering the thematic spoilers, which were designed on the basis of a single spoiler utilized by Leavitt and Christenfeld. Additionally, this single spoiler – and likely the others – was perhaps more artistically-crafted and, therefore, served as less of a hindrance to reader enjoyment that those used as its equivalent in the present study. This difference is made clear by comparing the artistic quality of Leavitt and Christenfeld's spoiler for "An Occurrence at Owl Creek Bridge," one of the stories they presented to participants, with the thematic spoiler for "The Reticence of Lady Anne," used in the current study. Here is Leavitt and Christenfeld's spoiler:

The experience of time is one of life's mysteries. Years may pass in a rush,

or a moment stretch interminably. A whole lifetime may flash through the

mind in the moment before death. But in the case of Peyton Farquhar, the

man to be hanged on the bridge, it is not a rush of memories that comes

to the fore. Instead, new experiences—vivid fantasies of escape—inhabit

his last moments, calling into question whether it is real time or the

experience of time that truly matters.

Here is a thematic spoiler used in the present study:

People have a tendency of falling into routines and failing to see that

which is in front of them. Such is the case of Egbert, who warily

approaches his wife in an attempt to resolve an unfinished quarrel that

had occurred over luncheon. He attempts light conversation, before

moving to muteness – four minutes of which usually drove his wife to

volubly express her feelings. However, in this instance, Lady Anne is

unmoved and he leaves to get dressed for dinner, hoping that the matter

will resolved with time, not realizing that his wife had been dead for two

hours.

While it is possible that our long and short spoilers did not match well with those used

in prior research, this concern is less dire due to their more simply articulated nature

and having access to the entirety of the spoilers utilized by Johnson and Rosenbaum and

Levine at al.

A second, not quite as pressing methodological disparity that could explain the discrepancy in results between the current study and those of Leavitt and Christenfeld (2011, 2013) and Johnson and Rosenbaum (2015) is the format in which the stories were presented to participants. Specifically, Leavitt and Christenfeld and Johnson and Rosenbaum both used paper to present their experimental materials to participants, giving them the ability to look back, if needed. In contrast, the current study and that of Levine et al. (in press) presented all experimental materials on a computer screen with no option to look back. These disparities could have altered the reading experience and affected participants' perception of the spoilers. Nonetheless, the participants in the study, being college students in an educational milieu that is becoming increasingly reliant on technology, were likely well-acquainted with reading on a computer screen, rendering this experiment far from a foreign experience.

Finally, the last dissimilarity that could account for the disparity in results is the genre of stories selected for the study. As both Johnson and Rosenbaum (2015) and Levine et al. (in press) utilized stories with twist-endings, as was the case in the current study, this incongruence only poses a concern when considering the work of Leavitt and Christenfeld (2011, 2013), which presented participants with literary, mystery, and ironic-twist stories. While it is possible that spoilers and even different spoiler types affect stories of different genres differentially, Leavitt and Christenfeld's results should have been maintained due to overarching similarities between twist-ending and ironic-twist stories, both of which include a key event which fundamentally alters the

narrative. Hence, it is unlikely that the incongruence in the genres of utilized stories led to the discrepancy in results.

There are also a few limitations to the current research that need to be addressed prior to designing future experiments about the effect of spoilers on the reading experience. The first of these was the relatively small sample size of 202 participants, which may not have provided sufficient statistical power to detect small effects, if they are present. This problem can simply be addressed by running more participants. Another possible limitation of the design was the fact that the single-item measure of enjoyment was presented after participants had already responded to the 12-item enjoyment questionnaire, rendering it possible that fatigue played a role in making this measure less responsive to the manipulation. A possible method to address this limitation could be to present the two measures in counterbalanced order to distribute the effects of fatigue.

Summary

Currently, the limited literature on spoilers consists of mixed results about the effect of spoilers on enjoyment. As of yet, Leavitt and Christenfeld (2011, 2013) remain the only researchers who have found spoilers to increase enjoyment. Attempts to replicate their research by Johnson and Rosenbaum (2015) and Levine et al. (in press) have found the opposite effect. The current study did not find support for the findings of Leavitt and Christenfeld, but did find results consistent with those of Johnson and Rosenbaum and Levine et al. Future research in this area should address the methodological differences between these studies and attempt to find an explanation

for these differential results and expand from the realm of short stories to novels,

television, and even movies.

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and boundary conditions. *Journal of Consumer Psychology*, *26*, 81-90.

Table 1. Sample spoiler types for "The Eyes Have It."

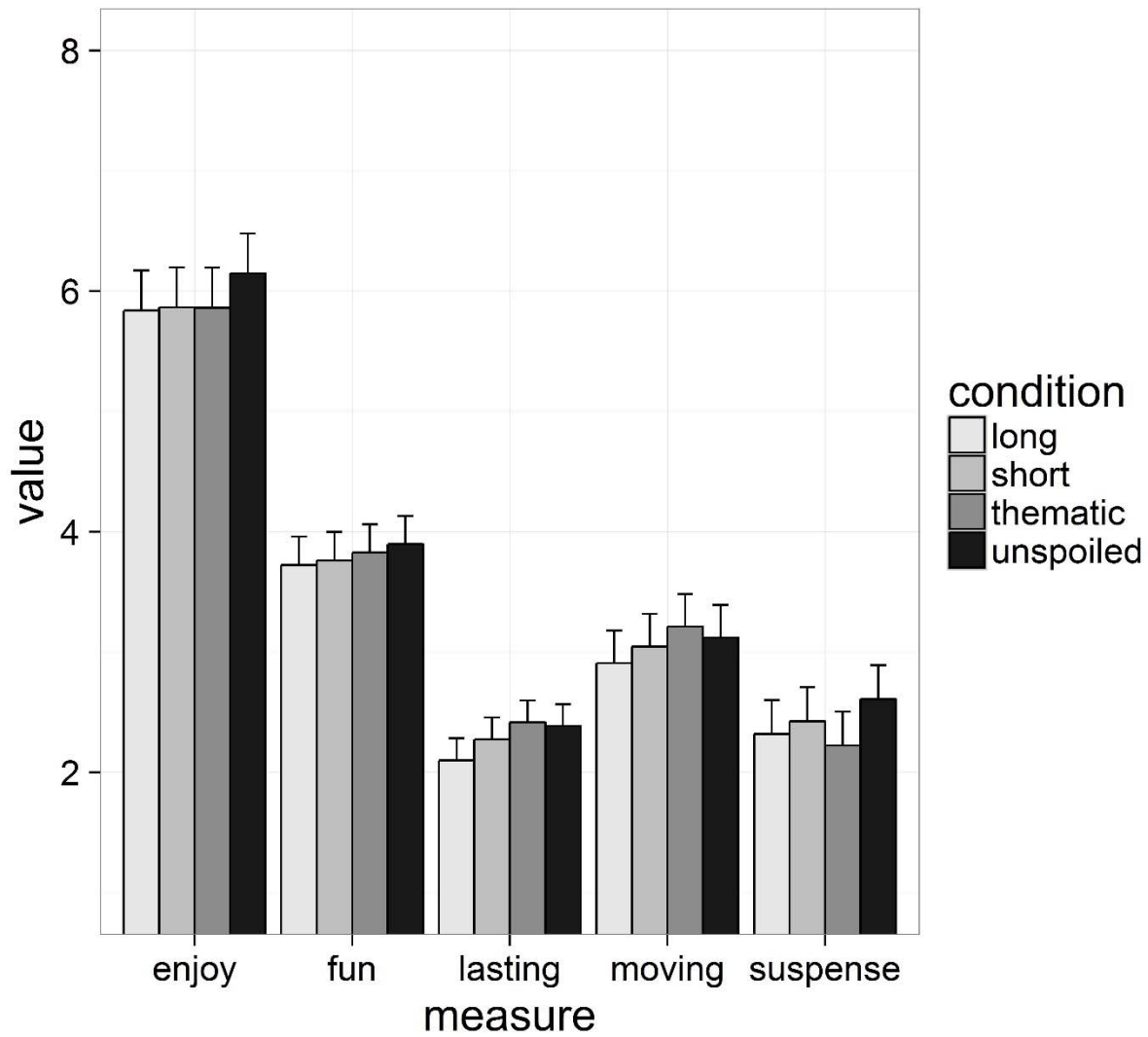| Spoiler Type	Spoiler
Short Spoiler	A blind man pretends to have sight as he converses with a girl on the train, in hopes of impressing her. When she leaves, he asks the next passenger about her hair length, whereupon he learns that she, too, was blind.
Long Spoiler	A blind man is sitting a train compartment, when he is joined by a girl with whom he makes small talk about the weather and their destinations, without letting her know that he is blind, attempting to both impress her and create a mental picture. When the girl leaves, he asks the next passenger about her hair length, whereupon he learns that she, too, was blind.
Thematic Spoiler	People have the tendency to put on certain personas and masks to achieve desired ends ranging from acquiring jobs to impressing individuals. The latter is the case of the protagonist, a blind man sitting alone in a train compartment, who decides that he will make small talk about the weather and their destinations with a girl who joins him in his compartment, without revealing that he is blind. When the girl leaves, he asks the next passenger about her hair length in order to complete his mental picture, whereupon he learns that she, too, was blind.

Figure 1. Mean enjoyment, fun, lasting impression, movingness, and suspense scores by condition. Error bars represent ±1 SE. Note that overall enjoyment ranges from 1 to 10, whereas fun, lasting impression scores, movingness, and suspense range from 1 to 7.

Appendix A

Short spoilers by story.

Story	Spoiler
<u>Story</u>	<u>Spoiler</u>
Two Were Left	Eskimo boy Noni and his dog Nimuk are stuck on an ice floe and hungry enough to consider killing the other. In the end, neither eats the other, they reconcile, and are rescued shortly afterward.
The Sniper	A sniper on a rooftop skillfully kills a rival sniper on the opposite rooftop, who turns out to be his brother.
The Reticence of Lady Anne	The protagonist, Egbert, tries to end a fight with his wife, Lady Anne, and leaves to get dressed for dinner when she is unmoved, unaware that she has been dead for two hours.
The Open Window	Mrs. Sappleton's teenage niece, Vera, lies to Frampton, their guest, telling him that her aunt's husband, brothers, and spaniel had gone missing on a hunt three years ago. But they return, frightening Frampton, unaware that they had left only that morning, who flees the house.
The Story of an Hour	The protagonist, Mrs. Mallard, dies from a heart attack after learning that her husband, who she believed had recently died in a railroad disaster, is in fact alive.
Barney	Will Stanton, a scientist attempting to increase the intelligence of rat named Barney on an isolated island, is murdered by the rat.
The Eyes Have It	A blind man pretends to have sight as he converses with a girl on the train, in hopes of impressing her. When she leaves, he asks the next passenger about her hair length, whereupon he learns that she, too, was blind.

Appendix B

Long spoilers by story.

Story	Spoiler
Two Were Left	Eskimo boy Noni and his faithful dog Nimuk are stuck on an ice floe for two days. Noni is extremely hungry, and realizes that to survive, he must kill and eat his companion. He takes out his knife, ready to strike; but Nimuk appears ready to eat him instead. Neither can go through with it, and they reconcile. They are rescued a few hours later.
The Sniper	In war-torn Ireland, a sniper is hidden on a rooftop, waiting to take out anyone working for the enemy. He is shot in the arm by the opposing army's sniper hidden on a rooftop across the street. Using some clever tricks, the sniper kills his opponent. When the enemy's body falls into the street, the sniper recognizes him as his brother.
The Reticence of Lady Anne	Egbert and his wife, Lady Anne, had an unfinished fight and he warily approaches her in an attempt to move past it, ultimately expecting her to voice her feelings after a period of muteness, as always. However, she is unmoved and he leaves to get dressed for dinner not realizing that his wife had been dead for two hours.
The Open Window	Mrs. Sappleton's teenage niece, Vera, learns that Frampton, their guest, knows nothing of her aunt and lies to him, telling him that her aunt had left open the window that he sees for years in anticipation of the return of her husband, brothers, and spaniel, who had gone missing on a hunt three years ago. The husband, brothers, and spaniel return and, frightened, Frampton flees the house, never learning that they had left only that morning.
The Story of an Hour	Mrs. Mallard, the protagonist, who suffers from heart problems, is informed that her husband has died in a railroad accident. Moved to tears and deeply saddened, she locks herself away in her room. While in the room, she reluctantly begins to feel joy at finally being able to live life for her own benefit. She leaves the room at her sister's prodding and dies of a heart attack when her very much alive husband enters the house.
Barney	Will Stanton, a scientist attempting to increase the intelligence of a rat named Barney on an isolated island, keeps a record of his experiences with the rat. The record discusses his experience with his ex-colleague, his experiences with Barney, Barney's victories against him, and, ultimately, a poorly written suicide note, leading to the inference that Barney has murdered him.
The Eyes Have It	A blind man is sitting a train compartment, when he is joined by a girl with whom he makes small talk about the weather and their destinations, without letting her know that he is blind, attempting to both impress her and create a mental picture. When the girl leaves, he asks the next passenger about her hair length, whereupon he learns that she, too, was blind.

Appendix C

Thematic spoilers by story.

Story	Spoiler
Two Were Left	In moments of desperation, individuals contemplate acts they would otherwise consider appalling. However, refusing to go through with a despicable deed sometimes leads to positive outcomes. Such is the case of Eskimo boy Noni, who, hungry and stuck on an ice floe for two days, fashions a knife to kill his faithful dog Nimuk in order to survive. He calls the dog, who seems aware of his intentions, but, unable to complete the act, throws the knife away. Nimuk then circles the now defenseless Noni, but, despite Noni's fear, he licks the boy's face and the two reconcile. Shortly after, a pilot sees the gleam of the discarded knife and rescues the pair.
The Sniper	Wars, particularly civil wars, have the ghastly effect of leaving devastation in their wake: taking lives and tearing families apart. Such is the case in a war-torn Ireland, where a sniper is hiding on a rooftop, waiting to take out anyone working for the other enemy. After being shot in the arm by the opposing army's sniper, who is hiding on the opposite rooftop, he skillfully kills his opponent, who turns out to be his brother.
The Reticence of Lady Anne	People have a tendency of falling into routines and failing to see that which is in front of them. Such is the case of Egbert, who warily approaches his wife in an attempt to resolve an unfinished quarrel that had occurred over luncheon. He attempts light conversation, before moving to muteness – four minutes of which usually drove his wife to volubly express her feelings. However, in this instance, Lady Anne is unmoved and he leaves to get dressed for dinner, hoping that the matter will resolved with time, not realizing that his wife had been dead for two hours.
The Open Window	Children are armed with mischievousness and an active imagination. Vera, Mrs. Sappleton's niece, is such a teenager, who, upon realizing their guest, Mr. Frampton, is unfamiliar with her aunt, tells him a false tale of her aunt leaving the window that he sees open for years in anticipation of the return of her husband, brother, and spaniel, who had gone missing on a hunt three years ago. The husband, brothers, and spaniel return and, frightened, Frampton flees the house, never learning that they had left only that morning.
The Story of an Hour	In relationships, for good or for bad, it is often the case that people try to influence the decisions of their partners and, thus, often, individuals cannot be truly free unless outside of the confines of a relationship. This is a realization that Mrs. Mallard, the protagonist, who suffers from heart problems, reluctantly reaches after she is informed that her husband has died in a railroad disaster. Although Mrs. Mallard cries and locks herself in her room, she soon has the joyous idea, which initially plagues her with guilt, that she will now be truly free and she is excited to live such a life. She leaves the room at her sister's prodding and dies of a heart attack when her very much alive husband enters the house.
Barney	Although scientific knowledge and advancement is essential to progress, people need to be wary of its potential hazards. Will Stanton, a scientist attempting to increase the intelligence of a rat named Barney on an isolated island, is revealed by his records as an individual who hasn't considered these hazards. The record discusses his experience with his ex-colleague, his experiences with Barney, Barney's victories against him, and, ultimately, a poorly written suicide note, leading to the inference that Barney has murdered him.
The Eyes Have It	People have the tendency to put on certain personas and masks to achieve desired ends ranging from acquiring jobs to impressing individuals. The latter is the case of the protagonist, a blind man sitting alone in a train compartment, who decides that he will make small talk about the weather and their destinations with a girl who joins him in his compartment, without revealing that he is blind. When the girl leaves, he asks the next passenger about her hair length in order to complete his mental picture, whereupon he learns that she, too, was blind.

Appendix D

12-item Enjoyment Questionnaire (Oliver & Bartsch, 2010)

1. It was fun for me to read this story.
2. I enjoyed reading this story.
3. The story was entertaining.
4. I found this story to be very meaningful.
5. I was moved by this story.
6. The story was thought provoking.
7. This story will stick with me for a long time.
8. I know I will never forget this story.
9. The story left me with a lasting impression.
10. I was at the edge of my seat while reading this story.
11. This was a heart-pounding kind of story.
12. The story was suspenseful.

Appendix E

Need for Cognition Scale (Cacioppo, Petty, & Kao, 1984)

1. I would prefer complex to simple problems.
2. I like to have the responsibility of handling a situation that requires a lot of thinking.
3. Thinking is not my idea of fun.*
4. I would rather do something that requires little thought than something that is sure to challenge my thinking abilities.*
5. I try to anticipate and avoid situations where there is likely chance I will have to think in depth about something.*
6. I find satisfaction in deliberating hard and for long hours.
7. I only think as hard as I have to.*
8. I prefer to think about small, daily projects to long-term ones.*
9. I like tasks that require little thought once I've learned them.*
10. The idea of relying on thought to make my way to the top appeals to me.
11. I really enjoy a task that involves coming up with new solutions to problems.
12. Learning new ways to think doesn't excite me very much.*
13. I prefer my life to be filled with puzzles that I must solve.
14. The notion of thinking abstractly is appealing to me.
15. I would prefer a task that is intellectual, difficult, and important to one that is somewhat important but does not require much thought.
16. I feel relief rather than satisfaction after completing a task that required a lot of mental effort.*
17. It's enough for me that something gets the job done; I don't care how or why it works.*
18. I usually end up deliberating about issue even when they do not affect me personally.

* Denotes items that were reverse-scored.

Appendix F

Author Recognition Test (Stanovich & West, 1989)

Asifa Majid	Helga Noice	Keith Millis	Michael Wolfe
F Scott Fitzgerald	Stephen King	Max Louwerse	Susan Fussell
Vladimir Nabokov	Margaret Mitchell	Murray Singer	Danielle McNamara
Catherine Bohn	Ann Beattie	Celia Klin	Ernest Hemingway
Thomas Wolfe	Margaret Atwood	Tim Koschmann	Saul Bellow
Anne Cook	Taffy Raphael	William S Horton	Bernard Malamud
Alice Walker	Samuel Beckett	Ralph Ellison	Isaac Asimov
Peter Dixon	Catherine Snow	Rolf Zwaan	T S Eliot
Paul van den Broek	Catherine O'Connor	Joyce Carol Oates	Salmon Rushdie
Sidney Sheldon	Jane Oakhill	J R R Tolkien	Anne McCaffery

Appendix G

Transportability Scale (Dal Cin, Zanna, & Fong, 2004)

1. I can easily envision the events in the story.
2. I find I can easily lose myself in the story.
3. I find it difficult to tune out activity around me.*
4. I can easily envision myself in the events described in the story.
5. I get mentally involved in the story.
6. I can easily put stories out of my mind after I've finished reading them.*
7. I sometimes feel as if I am part of the story.
8. I am often impatient to find out how the story ends.
9. I find that I can easily take the perspective of the character(s) in the story.
10. I am often emotionally affected by what I've read.
11. I have vivid images of the characters.
12. I find myself accepting events that I might have otherwise considered unrealistic.
13. I find myself thinking what the characters may be thinking.
14. I find myself thinking of other ways the story could have ended.
15. My mind often wanders.*
16. I find myself feeling what the characters may feel.
17. I find that events in the story are relevant to my everyday life.
18. I often find that reading stories has an impact on the way I see things.
19. I easily identify with characters in the story.
20. I have vivid images of the events in the story.

* Denotes items that were reverse-scored.