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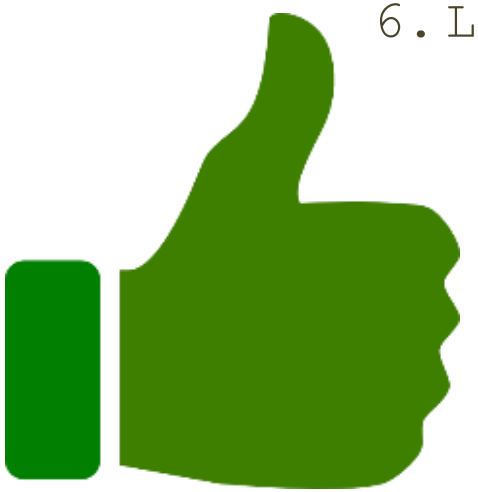
Understanding the Value of Stories in Experiential Reviews

Tom van Laer
Stephan Ludwig
Jennifer Edson Escalas

Agenda:

1. Persuasion by reviews
2. Advancing theory of narrativity
3. Computerized text analysis
4. Results
5. Follow-up studies
6. Lessons learned and still to learn



Persuasion by reviews

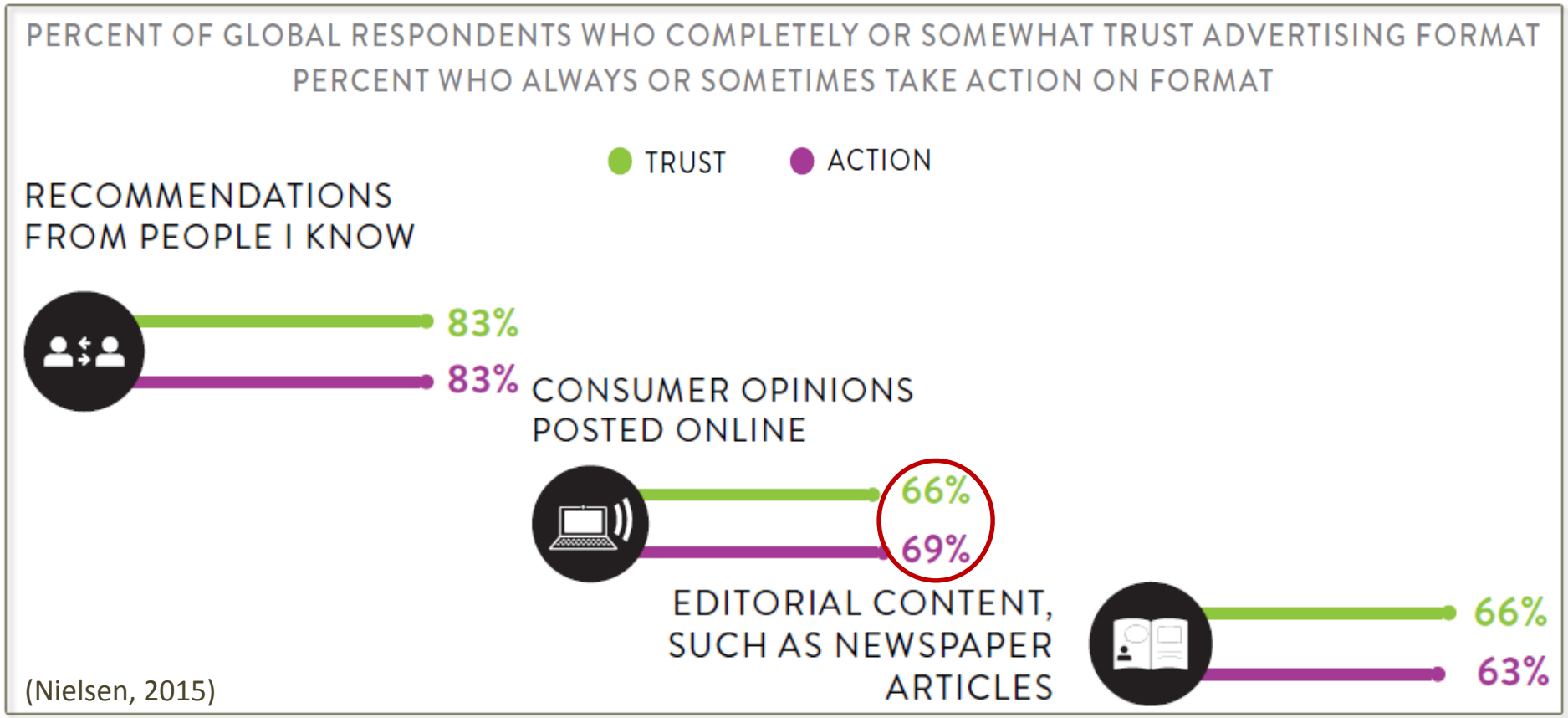
A review of *Mystery Adventures*, a life action role-playing game

Persuasion by reviews

Relevance of positive feedback

Definition: Positive feedback is an attitudinal response to the review, which raises a review's ranking and visibility on the site and changes consumers' attitudes and purchase intentions (Moore 2015).

Importance:



(Nielsen, 2015)

Positive feedback

Explaining positive feedback

1. Reliance on contextual cues:
   a) Review age (Chen and Lurie 2013)
   b) Review eloquence (Vásquez 2014)
   c) Review extremity (Mudambi and Schuff 2010)
   d) Review readability (Ghose and Ipeirotis 2011)
   e) Review length (Pan and Zhang 2011)
   f) Reviewer expertise (Godes and Mayzlin 2004)

2. Scrutinize overt claims and arguments:
   "I chose/love this product because…" (Moore 2015, 34)

❖ Yet, many review texts do not contain overt claims and arguments; instead *"reviews were overwhelmingly focused on narrating experiences … rather than discussing."* (Jurafsky et al. 2014)

Advancing theory of narrativity

Persuasion in narratology

Four conceptual building blocks:

1. Content elements convey what a story is telling (characters and events; Chatman 1978).

2. Expression elements reflect how a story is told (emotional shape and event order; Chatman 1978).

3. Transportation is the extent to which (1) a consumer empathizes with the story characters and (2) the story plot activates his or her imagination, which leads him or her to experience suspended reality during story reception (van Laer et al. 2014).

4. Persuasion is the effect of narrative transportation, which manifests itself in consumers positive attitudes toward the review and the experience described therein, and purchase intentions, holding story valence and all else constant (Argo, Zhu, and Dahl 2008; Escalas 2007; Wang and Calder 2006).

Advancing theory of narrativity

Gap and research objectives

Even though the theory of narrativity lays the groundwork for understanding how reviews' narrativity leads them to persuade consumers, it suffers from gaps.

1. Externally validate prior substantial contributions regarding narrative content with a rigorous field study;

2. Explicitly consider stories' emotional shapes and event orders as crucial resources for interpreting reviews as transporting and persuasive narratives;

3. Develop a reliable methodology to measure what combination of words are markers of narrativity.

Advancing theory of narrativity

A. Narrative content elements

1. Landscapes of affective consciousness
2. Landscape of cognitive consciousness

   Definition: The extent to which a text recounts an initial event about which some character expresses feelings or thoughts that, in turn, lead to subsequent events (Bruner 1986).
   Effect: Consumers make more inferences and exert more effort to empathize with the characters when stories have well-developed landscapes of consciousness (Feldman et al. 2014).

3. Spatial embedding

   Definition: The extent to which a text (1) focuses on particular spaces and (2) names its attributes, rather than develops abstractions and/or categorizations (Brewer and Lichtenstein 1981).
   Effect: Stories' descriptive, perceivable narrative content may not offer a camera-recorded view of space, as some movies and video games do, but they do make the plot more concrete, imaginable, and transporting (Schellekens et al. 2010).

4. Temporal embedding

   Definition: The extent to which a text (1) has a chronological flow and (2) provides causal links between the events that occur (Escalas 1998; Woermann and Rokka 2015)
   Effect: Past–present–future causal chains are necessary narrative content to translate texts into stories with an imaginable sequence of events that can transport and persuade consumers (Adaval et al. 2007; Adaval and Wyer 1998; Barthes 1975).

Advancing theory of narrativity

B. Narrative expression elements

1. Genre

Definition: A distinctive story shape that emerges from culturally determined conventions in a given society at a given time (Genette 1979/1992; Gergen and Gergen 1988).

Hypothesized effect: Emotional story shapes that change over the course of a story line are arguably more engaging than those that do not alternate in sign (Vonnegut 2005):

- Progressive genre: Emotion ameliorates over the course of a text.
- Regressive genre: Emotion deteriorates over the course of a text.
- Stable genre: Emotion is stable over the course of a text.
- Comedy: Emotion first deteriorates and then ameliorates over the course of a text
- Tragedy: Emotion first ameliorates and then deteriorates over the course of a text

2. Drama

Definition: The extent to which the text is organized in a curiosity-order of events (Burke 1962; Steiner 1984).

Hypothesized effect: In contrast to a surprise order, a curiosity order opens with the emotional climax and stimulates consumers to exert effort to remain transported in the narrative world to understand how the opening event came to pass (Brewer and Lichtenstein 1982).

Advancing theory of narrativity

B. Narrative expression elements

Hypothesis 1

An experience review's genre that displays a changing emotional story shape (i.e., a comedy or tragedy) positively affects

a) narrative transportation and
b) narrative persuasion.

Hypothesis 2

An experience review's drama that presents the events in a curiosity rather than a surprise order positively affects

a) narrative transportation and
b) narrative persuasion.

Computerized text analysis

Dataset

- Setting: English reviews of "things to do" (i.e., experiences) in Las Vegas posted on http://www.tripadvisor.com
- Timeframe: February 2000 – October 2014
- Sample: 190,461 reviews of 989 experiences
- Narrative persuasion: (*M* = .77)
- Contextual cues:
  a) Review age (*M* = 740; Chen and Lurie 2013)
  b) Review eloquence (*M* = .14; Vásquez 2014)
  c) Review extremity (*M* = .66; Mudambi and Schuff 2010)
  d) Review readability (*M* = .23; Ghose and Ipeirotis 2011)
  e) Review sentence length (*M* = 7; Pan and Zhang 2011)
  f) Reviewer expertise (*M* = 27; Godes and Mayzlin 2004)

Computerized text analysis

Narrative content elements: *n*-gram operationalisation, number of words in dictionary, and representative words

Element	Operationalisation	Words in dictionary	Representative words
Landscape of affective consciousness	Intensity of motion–affective process–motion trigrams in the text	**168** **915**	arrive, car, go abandon, cried, happy
Landscape of cognitive consciousness	Intensity of motion–insight–motion trigrams in the text	**195**	consider, know, think
Spatial embedding	Intensity of space unigrams (1) / space and perceptual process unigrams (2) in the text	(220 + 69 – 1) **288** (273 + 8 – 9) **272**	down, in, thin beautiful, quiet, reeking
Temporal embedding	Intensity of time unigrams (1) / causation unigrams (2) / time and causation unigrams (3) in the text	(240 + 8 – 2) **246** (108 – 2) **106**	end, season, until because, effect, hence

Computerized text analysis

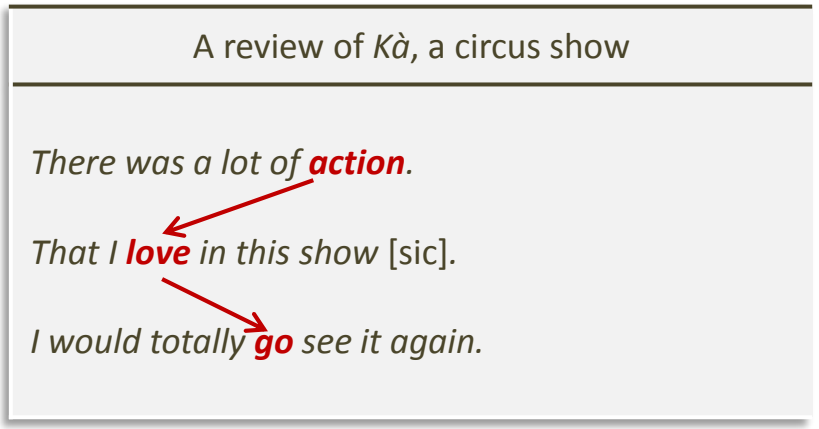
Narrative expression elements: *n*-gram operationalisation, number of words in dictionary, and representative words

Element	Operationalisation	Words in dictionary	Representative words
Progressive genre	Continuous increase of emotional story shape in the text	positive emotions: **406** negative emotions: **499**	love, nice, sweet hurt, nasty, ugly
Regressive genre	Continuous decrease of emotional story shape in the text		
Stable genre	Rate of change near zero for emotional story shape in the text		
Comedy genre	Negative curvilinear degree of emotional story shape (i.e., U shape) in the text		
Tragedy genre	Positive curvilinear degree of emotional story shape (i.e., inverted U shape) in the text		
Drama	Location of emotional climax in the text		

Computerized text analysis

A. Narrative content elements

❖ Landscape of affective consciousness



Computerized text analysis

A. Narrative content elements

- Landscape of cognitive consciousness

A review of *Vegas! The Show*, a musical

*They **changed** the show!!!*

*I **think** the 'old' show was more complete.*

*If they don't bring back the original show, this is my last time **attending** this show!*

Computerized text analysis

A. Narrative content elements

- Spatial embedding

A review of *Titanic: The Artifact Exhibition*

*They have lots of plates from the ship, replicas of the '**bedrooms**' for the 3rd **class** and 1st **class** passengers.*
(1) (1) (1)

They have a real (freshwater) iceburg [sic] *and a large **section** of the boat.*
(1)

Computerized text analysis

A. Narrative content elements

❖ Temporal embedding

Another review of *Vegas! The Show*

(1)
*The **first** half seemed to drag on until the bird trainer and his buddies came on.*

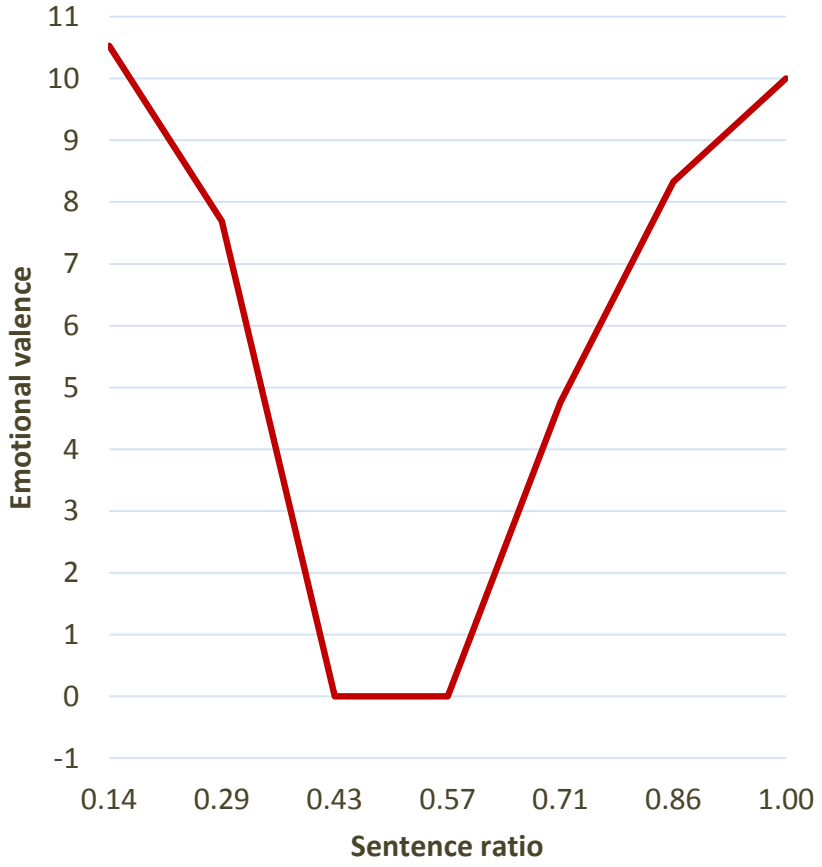
(3)
***Because** they were hilarious and their performance seemed to add life to the show and energize the crowd.*

The second half of the show was a lot of fun!!

Computerized text analysis

B. Narrative expression elements

❖ Genre



The review of *Mystery Adventures*

*This is **definitely** an unusual thing to do in Las Vegas, but can be a **wonderful** change of pace.*

*If you are into CSI and **like** solving mysteries, this is for you.*

If you'd rather just kick back, this might be a bit much.

*Max seemed **nervous** at first with lots of 'uhhh's and ummmms, but **warmed** up quickly.*

*The mystery started out slow ... which might be natural, but picked up pace and **excitement** as the night went on.*

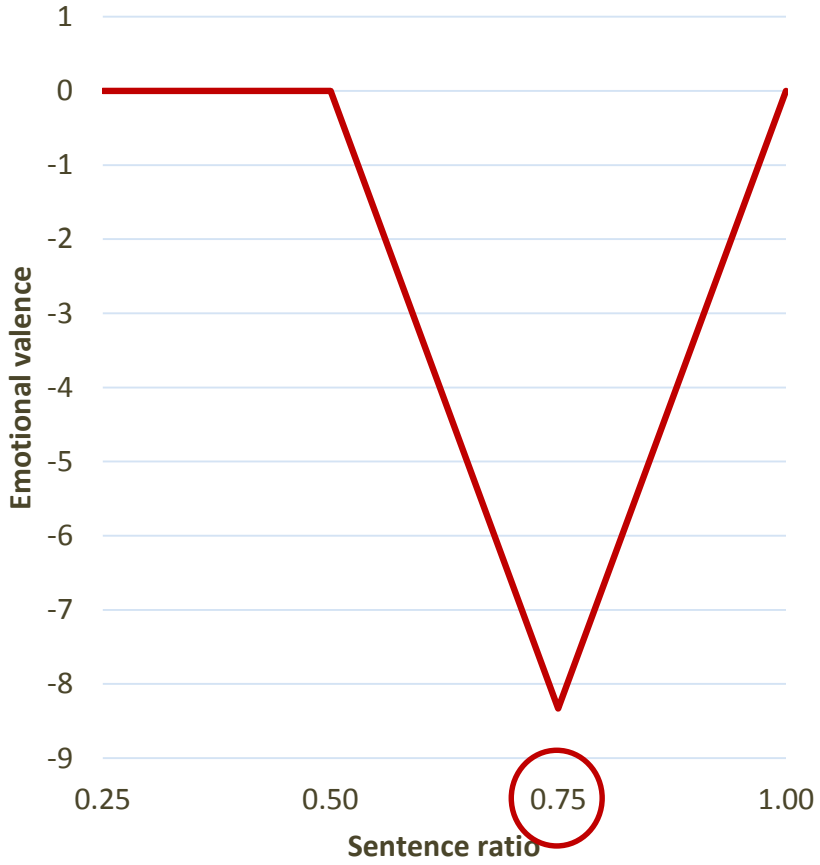
*And it did go on … from 7pm to **well** past 10pm.*

*Very **exciting** and worth the effort we put into it.*

Computerized text analysis

B. Narrative expression elements

❖ Drama



A review of *Graceland Wedding Chapel*

On our wedding night, there we were, waiting for the limo.

An hour after our wedding was to have started, still no driver.

*By then, I was so **upset**, I did not get married at Graceland Chapel!*

Our chapel reservation had expired!

Results

What matters; what does not

Elements	Model 2[b]	Model 3	Model 4	IRR
Narrative content				
Landscape of affective consciousness	.02 (.01)*	.02 (.01)*	.02 (.01)*	1.02
Landscape of cognitive consciousness	.01 (.01)*	.01 (.01)*	.01 (.01)*	1.01
Spatial embedding	.04 (.01)**	.03 (.01)*	.03 (.01)*	1.03
Temporal embedding	.16 (.01)***	.14 (.01)***	.14 (.01)***	1.15
Narrative expression				
Genre[a]				
Progressive		.01 (.01)	.00 (.01)	1.00
Regressive		-.03 (.01)***	-.03 (.01)***	.97
Comedy		.03 (.01)**	.03 (.01)**	1.03
Tragedy		.03 (.01)***	.03 (.01)**	1.03
Drama			-.02 (.01)*	.98
Wald's $\chi^2_{\text{Change (df)}}$	$2653.01_{(28)}$***	$782.87_{(33)}$***	$45.04_{(35)}$***	
McFadden's pseudo-R^2	.101	.103	.104	

[a] Stable genre is the reference level; [b] Contextual cues and dummy variables for the 18 experience categories are not reported for the sake of brevity. Hypothesized effects that are supported appear in bold.
All models: N = 190,461; Model 1: Wald's $\chi^2_{(24)}$ = 49312.04; * $p < .05$; ** $p < .01$; *** $p < .001$.

Results

Possible limitations

- 65.25% reviews without 👍:
  1. If the number of reviews for any experience were to increase by one standard deviation, the odds to receive a 👍 would decrease by .536 (SE = .01, $p < .001$).
  2. Reviews without 👍 compete with a significantly higher number of reviews per experience ($M = 5354$, SD = 8420.02) than reviews with 👍 ($M = 1892$, SD = 3367.08; $t(190460) = -101.55$, $p < .001$).

- Exclusion of narrative transportation, attitude toward and intention to purchase reviewed experiences: These variables are not available in online corpora of reviews, which precludes measurement.

- Drama's effect only approximates hypothesis 2b: Sentence number does not strictly distinguish between curiosity and surprise order.

Follow-up studies

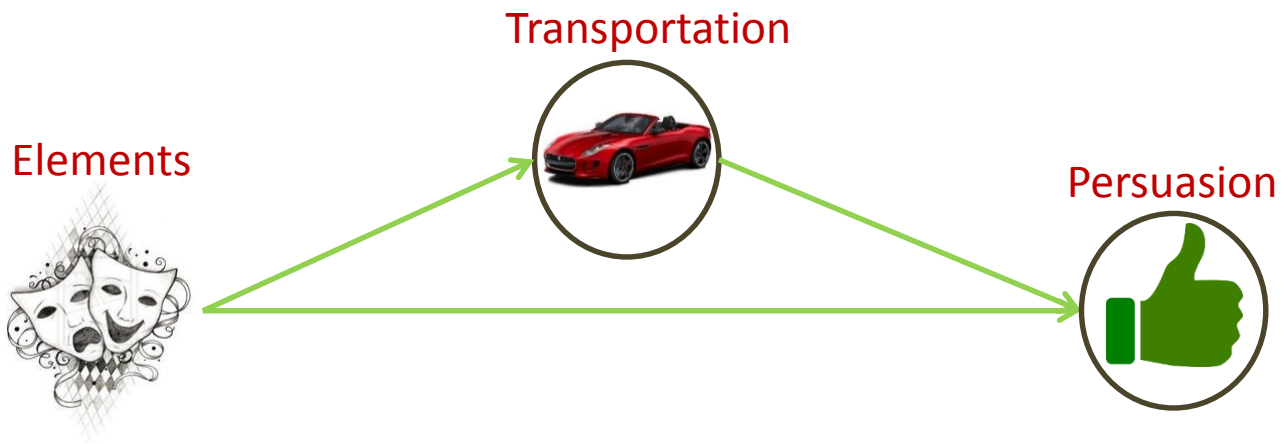
Study 2: Method

- Participants: 304 Amazon Mechanical Turk workers
- Procedure: 10 out of 90 TripAdvisor reviews (50% without 👍)
- Measures:
  a) Narrative persuasion: *To what extent was this review helpful?* (7 points)
  b) Narrative transportation: 13 items (e.g., *While I was reading the review, I could easily picture the events in it taking place*; 7 points; α = .79; Green and Brock 2000)
- Narrative elements and contextual cues from the computerized text analysis

Follow-up studies

Study 2: Results

- Reviews with and without 👍 on TripAdvisor are capable of evoking narrative transportation and persuasion ($F(2, 86) = .80$, $p = .451$).



.18 ≤ point estimates ≥ .31
lower limits of the 95% CIs ≥ .01, upper limits of the 95% CIs ≤ .52

Follow-up studies

Study 3: Method

- Participants: 91 bachelor and 65 master's in business students
- Procedure: randomized 2 (instruction: narrative or age-10 reading) × 2 (drama: curiosity or surprise order) full-factorial design
- Measures:
  a) Positive feedback: 3 items (helpful, useful, informative; 7 points; α = .82; Moore 2015)
  b) Attitude toward the reviewed experience: 4 items (bad/good, worthless/valuable, unpleasant/pleasant, dirty/clean; 7 points; α = .71; Osgood, Suci, and Tannenbaum 1957)
  c) Purchase intention: 4 items (chance, likelihood, intention, desire; 11 points; α = .89; Juster 1966, Moore 2015, Adaval and Wyer 1998)
  d) Narrative transportation: 13 items (e.g., *After finishing the review, I found it easy to put it out of my mind* [r]; 7 points; α = .79; Green and Brock 2000)
  e) Attention checks: 4 open-ended questions (e.g., name of the capital of India, location of the Taj Mahal)
  f) Instruction manipulation check: 2 items (e.g., *While reading the review, I was looking for words and sentences that might not be understood by a 10-year-old reader*; 7 points; Green and Brock 2000)
  g) Drama manipulation check: open-ended questions from general to specific (Bargh and Chartrand 2000)

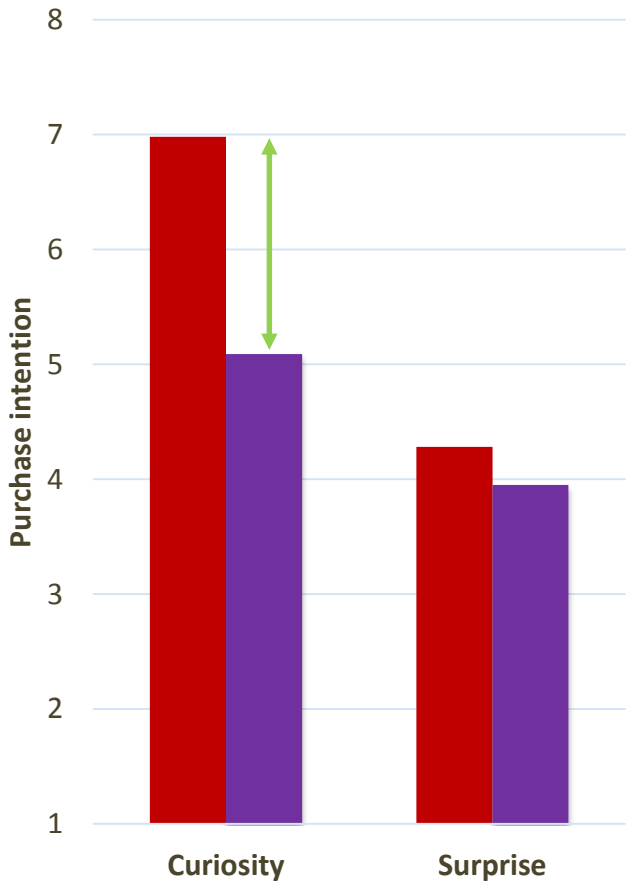
Follow-up studies

Study 3: Materials

Curiosity order	Surprise order
I did not get any sleep in Agra, home of the Taj Mahal. My holidays started out fine.	*After I visited the capital of India, Delhi, I moved on to see the Taj Mahal in Agra. Agra is only a short trip from Delhi. The Taj is a mausoleum built by Shah Jahan for his empress and is widely regarded as the most beautiful man-made structure in the world. It is said to be remarkable at all time of the day. It sure was when I visited as the sun rose above the early morning mists. Later that day, I went to look for accommodation in Agra.*
After I visited the capital of India, Delhi, I moved on to see the Taj Mahal in Agra. Agra is only a short trip from Delhi. The Taj is a mausoleum built by Shah Jahan for his empress and is widely regarded as the most beautiful man-made structure in the world. It is said to be remarkable at all time of the day. It sure was when I visited as the sun rose above the early morning mists. Later that day, I went to look for accommodation in Agra.	***Up until that moment, my holidays had been fine, but I did not get any sleep in Agra, home of the Taj Mahal.***
It turns out that Agra accommodations are not luxurious and I spent my nights awake on a straw mat.	*It turns out that Agra accommodations are not luxurious and I spent my nights awake on a straw mat.*

Follow-up studies

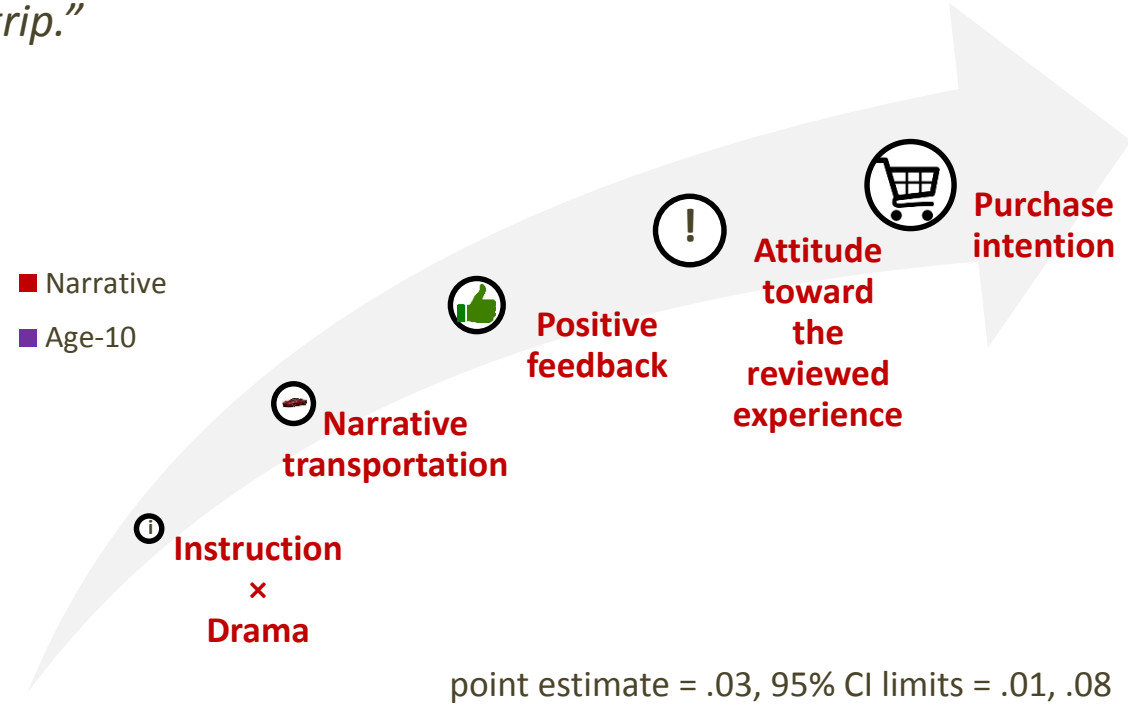
Study 3: Results



Narrative

Age-10

"It was like a story. The reviewer didn't just post the review for accommodations in Agra, they described their journey from Delhi to Agra, giving some insights to their trip."



point estimate = .03, 95% CI limits = .01, .08

Lessons learned and still to learn

Possible explanations for notable significant results

- Temporal embedding: The IRR shows that if a review's temporal embedding were to increase by one ordinal level, positive feedback would increase by 15%. This effect size underscores the importance of chronology and causality (Escalas 1998; Woermann and Rokka 2015).

- Comedy and tragedy: Reviews' emotional valence, which prior research considers a text-level phenomenon and a property of a review as a whole (Yin et al. 2014), is a sentence-level phenomenon and a property of the sentences that make up a review's emotional story shape.

Lessons learned and still to learn

How it matters

- Experience providers: When selling experiences, make them narrative; and identify customers' storytelling craftmanship
- Review-hosting sites: When a new review is posted, measure narrativity to predict future
- Reviewers: When writing reviews, write narrative reviews to receive
- Consumer protection groups: When reading reviews, beware reviews with are more narrative; not more helpful.

Lessons learned and still to learn

Three avenues for future research

- (Re-)conceptualizing "story": Our data indicate that reviews on TripAdvisor average seven sentences (SD = 4.56; ranging from 1 to 148 sentences). The increasingly popular flash fiction reinforces the notion of very short stories.
  a) "How short can a story be and still truly be a story?" (Thomas and Shapard 2010, 12)
  b) Can consumers become and remain transported when reading these very short stories?
  c) If so, what is the effect of stories' length on narrative persuasion?

- Effects on conversion: Our text analytical tool may provide some explanation for the different conversion rates of e-books and fanfiction. Recent developments in digital libraries indicate that there is ample opportunity to investigate conversion as an additional consequence of narrativity.

- Effects on self-branding: From our text analysis it appears that experience reviews are personal stories that encourage engagement. Such engagement could facilitate reviewer self-branding (Gandini 2015) and personal brand creation or strengthening.