

The Reviewer Effect: How Writing Reviews Affects Enjoyment and Connections

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Matthias Fuchs

from

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Approved on the application of

Prof. Dr. Dr. h.c. Torsten Tomczak

and

Prof. Dr. Johanna Gollnhofer

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St. Gallen, May 18, 2021

The President:

Prof. Dr. Bernhard Ehrenzeller

To Theresa, Maya, Eve, and Willi.

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Abstract

Consumers produce more reviews than ever before. From a company's perspective, the appeal of a constant stream of incoming information about how consumers experience its products or services seems clear. By better understanding consumers' thoughts and reactions, firms can swiftly make changes to increase consumer satisfaction. However, how does expressing their views about products and experiences affect *consumers*? The author theorizes that writing a review influences consumers' retrospective enjoyment of a product or experience via two distinct psychological processes. First, review-writing enhances evaluative clarity, which results in a polarization of retrospective enjoyment. Second, writing a review promotes a focus on the social aspect of the interaction, thereby strengthening consumers' connection to the producer, heightening the experience's retrospective enjoyment. Moreover, the author hypothesizes that consumers' familiarity with the product or experience attenuates this "reviewer effect." Evidence from five studies supports this theorizing. This research advances our understanding of the consequences of providing feedback in the form of written reviews for how consumers perceive firms, their products, and experiences.

Zusammenfassung

Konsumenten geben mehr Bewertungen ab als jemals zuvor. Aus der Perspektive eines Unternehmens scheint der Reiz eines konstanten Flusses an eingehender Information darüber, wie Konsumenten die eigenen Produkte oder Dienstleistungen erleben, offensichtlich. Wenn Unternehmen die Gedanken und Reaktionen ihrer Konsumenten besser verstehen, können sie Änderungen vornehmen, um die Kundenzufriedenheit zu erhöhen. Aber wie wirkt es sich auf *Konsumenten* aus, wenn diese ihre Gedanken über Produkte und Erfahrungen äussern? Der Autor stellt die Hypothese auf, dass das Schreiben einer Bewertung («Review»; im Vergleich zu einer Bewertung mittels einer Ratingskala) die rückblickende Zufriedenheit der Konsumenten mit einem Produkt oder einer Dienstleistung durch zwei unterschiedliche psychologische Vorgänge beeinflusst. Diese zwei psychologischen Vorgänge stellen den «Reviewer-Effect» dar. Beim ersten psychologischen Vorgang erhöht das Schreiben einer Bewertung die Klarheit der eigenen Meinung, was zu deren Polarisierung führt. Im Falle positiver Konsumerlebnisse erhöht dies die rückblickende Zufriedenheit. Beim zweiten psychologischen Vorgang fokussiert das Schreiben einer Bewertung die Interaktion auf deren sozialen Aspekt. Der Fokus auf den sozialen Aspekt stärkt die Bindung des Konsumenten an den Produzenten, was zu einer höheren rückblickenden Zufriedenheit mit dem Produkt oder der Dienstleistung führt. Darüber hinaus stellt der Autor die Hypothese auf, dass dieser «Reviewer-Effect» durch die Vertrautheit der Konsumenten mit dem Produkt oder der Dienstleistung abgeschwächt wird. Die Evidenz der fünf Studien stützt die aufgestellten Hypothesen. Diese Forschung erweitert das Verständnis des Einflusses des Schreibens von Bewertung auf die Konsumentenwahrnehmung der bewerteten Unternehmen, deren Produkten und deren Dienstleistungen.

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1 Introduction

“Someone has to tell me: When did America decide to redesign its entire economy based on everyone rating everyone else? Every interaction doesn’t have to be followed by a survey?! Let’s bring back ‘I give you money, you give me lightbulbs, and we both go on with our lives!’.”

- Bill Maher on Real Time with Bill Maher, September 13th, 2019, HBO

As identified by the comedian Bill Maher in the opening quote, the era of ubiquitous consumer feedback solicitations is upon us: When shopping online, consuming meals in a canteen, or going through airport security, one would be hard-pressed not to be constantly asked to rate and review.

The Finnish startup “HappyOrNot” is a leading provider of online and offline consumer feedback solutions and is responsible for many of these requests. In 2019, the company reported that its iconic physical feedback terminals (see Figure 1) had generated over 1 billion ratings for its clients (Wells 2019). This figure corresponds to 32 ratings every second since its founding in 2009 and more than the combined number of consumer evaluations on Amazon, Yelp, or TripAdvisor (Owen 2018).

This increased measurement of consumer opinions is not only felt by consumers. Managers’ mindsets are shifting, too: 89% of business executives think it is increasingly important to focus on consumer outcomes (e.g., retention and satisfaction) rather than conventional performance indicators (e.g., sales and profitability; Hundredx, 2016). Due to this mindset shift, managers feel the need to continuously collect data on consumer outcomes. However, there is little research on how to best structure these requests for feedback.

In practice, most advice regarding the solicitation of consumer feedback has focused on two things: First, advice commonly concentrates on how to quickly implement the feedback provided (Markey 2013), that is, to make it easily analyzable. Second, industry experts recommend that companies make it easy and quick for consumers to submit their feedback to increase their responses (Hyken 2016). The result has been the

widespread implementation of simple feedback measurement requests such as the “HappyOrNot” terminals (see Figure 1) or standardized one-question surveys such as the “Net Promoter Score” (Satmetrix Systems Inc. 2020). Similarly, previous research has predominantly focused on how companies should best use and implement customer feedback (Fornell and Wernerfelt 1988; Homburg and Fürst 2005; Voorhees, Brady, and Horowitz 2006).



Figure 1. A "HappyOrNot" Physical Feedback Terminal

In sum, more companies are asking more consumers for feedback more frequently. For managers, the appeal of constant consumer satisfaction measurement seems clear: By better understanding what consumers think of their offerings, they can react and improve them. Moreover, industry experts and researchers advise to make consumer feedback easily analyzable and make it easy for consumers to participate in. Consequentially, most of today’s consumer feedback requests seem to be driven by this kind of thinking.

However, few are looking at the consumers: Are quick and easy feedback requests – as are commonly advised and observed – beneficial from a consumer perspective? In particular, how does writing reviews about products or experiences impact consumers’

mental states when compared to rating them? The author proposes that in this day and age when millions of consumers provide feedback to companies every day, it is crucial to understand these producer-consumer interactions' consequences.

This research's findings demonstrate that simple consumer feedback is not always better when all possible consumer feedback consequences are considered. Encouraging consumers to reflect on their views when giving feedback can benefit the firm soliciting the feedback.

Specifically, this research examines the impact of review-writing on consumers, referred to as the “reviewer effect.” The reviewer effect consists of two separate psychological processes: First, writing reviews can enhance consumers’ evaluative clarity, which polarizes their retrospective enjoyment (i.e., writing as cognitive processing). Second, while consumers see written exchanges more as social interaction, ratings are perceived more like mere information exchanges. Viewing exchanges as social interactions can strengthen their connection to the solicitor and positively influencing their retrospective enjoyment (i.e., writing as social interaction). In sum, writing a review can cause consumers to view past products or experiences more positively.

The reviewer effect can be inhibited by consumers’ familiarity with what they are reviewing. Their familiarity moderates the extent to which consumers view past products or experiences more positively.

These findings make four contributions to the literature: First, consumer feedback is an increasingly prevalent phenomenon, yet little empirical work has explored how complying with such requests impacts consumers. One notable exception is Bone et al. 2017, who found that asking consumers positively framed consumer feedback questions increased their eventual spending. However, the present work demonstrates that merely varying the mode in which the feedback is provided can influence retrospective enjoyment and spending (Study 3). Specifically, it finds that providing written reviews versus ratings to identical consumer feedback questions can positively influence retrospective enjoyment.

Second, this research deepens our understanding of how articulating one's views for others in writing impacts mental states. While the present research investigates consumer feedback, it expands on previous findings in related fields, such as word of mouth, and specifically on the findings by Moore (2012) and Shen & Sengupta (2018). Moreover, the author conceptualizes, operationalizes, and tests evaluative clarity, a novel mental state that can arise from articulating one's views in writing and influences retrospective enjoyment of products or experiences.

Third, this work demonstrates that review-writing interacts with pertinent memory traces in ways that follow predictions that can be deduced from global matching models of memory (Kelly and West 2017). Thereby, the present work advances our understanding of how articulating one's views impacts memory and expands the application of these memory models.

Finally, this work contributes to the literature on mere measurement effects (Morwitz and Fitzsimons 2004; Morwitz, Johnson, and Schmittlein 1993). Whereas prior research primarily examined the effects of measuring (vs. not measuring) mental states, the current research expands this finding by showing that varying the mode in which solicitors request the mental states to be measured also influences consumers' subsequent attitudes and behaviors.

2 Theoretical Framework

2.1 Definition of Reviews in the Context of Consumer Feedback.

The author defines reviews as written communication that contains the consumer's articulated views on a specific product or experience. In this work, reviews are studied in the context of consumer feedback (Berry and Leighton 2004; Best 2009; Challagalla, Venkatesh, and Kohli 2009; Crié 2003), which is conceptualized as a producer-initiated contact with the consumer to solicit their views and thoughts about the producer's products or services. Thus, the producer requests the reviews; the consumer writes them and then transmits them to the producer.

This definition is contrasted to similar consumer activities such as word of mouth, defined as “informal communications directed at other consumers about the ownership, usage, or characteristics of particular goods and services or their sellers” (Westbrook 1987, p. 261). Following this definition, word of mouth features two distinct differences to reviews in consumer feedback: First, while the producer initiates consumer feedback, word of mouth is initiated by the consumer. Second, while consumer feedback is directed at the producer, word of mouth is directed at other consumers.

Similarly, the author contrasts the definition of reviews in consumer feedback to complaints. Consumer complaints are “an expression of dissatisfaction on a consumer's behalf to a responsible party” (Landon 1980). Following this definition, a consumer complaint features two distinct differences to reviews in the context of consumer feedback: First, while consumer feedback can contain evaluations of any valence, complaints exclusively express dissatisfaction. Second, while the producer initiates consumer feedback, complaints are initiated by the consumer.

These different types of consumer communication are summarized in Table 1.

While this work distinguishes the phenomenon of reviews in consumer feedback from word of mouth and consumer complaints, it nevertheless appreciates the procedural similarities and builds on findings from all relevant literature streams.

	Requester / Initiator	Writer / Sender	Receiver
Reviews in Consumer Feedback	Producer	Consumer	Producer
Word of Mouth	Consumer	Consumer	Other Consumers
Complaints	Consumer	Consumer	Producer

Table 1. Requesters, Initiators, Writers, Senders, and Receivers of Consumer Communication about products and experiences.

2.2 Previous Research on the Effects of Consumer Feedback

Extant work has shown consumer feedback to have mere solicitation effects and mere measurement effects.

Merely soliciting consumer feedback can make consumers more satisfied with the products and services and more vigilant and critical in their evaluation. It has been shown that, in general, soliciting consumer feedback has led consumers to perceive products and experiences as being more efficacious, and these subsequently have left consumers more satisfied (Berry and Leighton 2004; Morrison and Bies 1991; Ping 1993). However, it has also been established that consumers' natural focus is on negative feedback and complaints (Gelbrich and Roschk 2011). This intense focus on negative performance aspects has led consumers to equate feedback with criticism. Specifically, researchers have found that if consumers were told in advance that feedback would be solicited from them after consuming the product or experience, they became extra vigilant during consumption, expecting the company wanting to have a critical assessment of their services and gave greater weights to negative aspects (Ofir and Simonson 2001).

Researchers have also shown that consumer feedback can lead to mere measurement effects (Perkins and Forehand 2010). It can cause consumers to recall and change memories. Most investigations into mere measurement effects have identified attitude accessibility as the main driver for influencing subsequent behaviors (e.g., Fitzsimons and Morwitz 1996). That is, feedback can make individual attitudes more salient and

therefore impacts future mental states. Research has also found that manipulated measurement can modify consumers' attitudes (Bone et al. 2017). Specifically, the researchers found that consumer feedback may lead to attitude reconstruction and increased memory persistence. Attitude reconstruction occurs because of every instance of remembering leads to reconstruction and reconsolidation of memory, making memory malleable when retrieving it (Loftus and Palmer 1974). Memory persistence occurs because asking participants to verbalize the modified memory strengthens attitude reconstruction subsequently. By pairing attitude reconstruction with increased memory persistence, the content of memories recalled when giving feedback is vulnerable to external factors (Schacter 2001). Often, the eliciting question is the main external factor driving the effect (Schacter 2001).

This work will focus on the mere measurement effects of written reviews versus ratings in consumer feedback. However, in contrast to available studies of the mere measurement effects of consumer feedback, this work investigates the impact of the mode in which consumer responses are recorded.

The subsequent chapters will expand on the theories and hypotheses for how the mere measurement effects differ for written reviews versus ratings.

2.3 Review-Writing as Cognitive Processing

Prior research into the effects of writing about memories has shown that writing leads to a search for meaning and understanding by the nature of its syntax: Writing organizes memories by forcing writers to build causal structures into their disclosures (Lyubomirsky, Sousa, and Dickerhoof 2006; Singer 2004; Smyth, True, and Souto 2001). Researchers' common understanding in the field is that writing about personal and meaningful topics positively affects the writers (Frattaroli 2006). According to the cognitive-processing theory (Pennebaker, Colder, and Sharp 1990), this benefit arises from cognitive processes that are initiated by writing: Specifically, studies by Pennebaker et al. (1990) show that participants thought writing about traumatic experiences (i.e., reviewing them) helped them gain insight into what had happened to them (Pennebaker, Colder, and Sharp 1990). In other studies, it was found that writers who exhibit an increased use of causation words (e.g., because, cause, effect) and insight words (e.g., consider, know) benefit more from the experimental written

disclosure, lending further support to the theory that cognitive processes of insight and causation benefit writers (Pennebaker 1993). Accordingly, the author proposes that review-writing can increase the *evaluative clarity* of consumers' views about what is being reviewed, similar to the effects of writing about traumatic experiences.

Evaluative clarity is defined as the degree to which consumers' evaluative views are clear to them and how well they understand them. Evaluative clarity builds on and is contrasted to three similar measures documented in research: Understanding (Moore 2012), attitude clarity (Petrocelli, Tormala, and Rucker 2007), and preference clarity (Huffman and Kahn 1998; Simonson 2005).

Evaluative clarity is similar to the more general measure "understanding" (Moore 2012). Moore (2012) defines "understanding" as making sense of the causes and outcomes of events. It differs in one critical aspect: The measure of "understanding" also documents consumers' understanding of why specific experiences occurred, that is, their decisions and actions that led to it (Moore 2015), which is not captured by evaluative clarity. Evaluative clarity merely measures how clear consumers are about their valenced opinions pertaining to products or experiences.

Evaluative clarity is also contrasted to the measure "attitude clarity" (Petrocelli, Tormala, and Rucker 2007). "Attitude clarity" differs from evaluative clarity in two ways: First, "attitude clarity" was designed to measure how clear participants were on stances on issues of societal concern (e.g., capital punishment, gun control, and identification card policy), not their views of past products or experiences. Evaluative clarity measures the certainty of consumers' valenced opinions, not political attitudes. Second, "attitude clarity" implies the existence of a true, underlying attitude, and this is also reflected in the scale's question items, which is neither the case nor necessary for evaluative clarity.

Lastly, evaluative clarity is contrasted to "preference clarity" or "insight into preferences" (Huffman and Kahn 1998; Simonson 2005). Simonson (2005) describes this concept as "the consumers' self-insight into those preferences, including their perception of the stability and clarity of their preferences." However, "preference clarity" is forward-looking and focuses on the certainty of preferences within categories of products or experiences, for example, "I am sure I like the iPhone. Therefore, I will

purchase the iPhone the next time I want to buy a smartphone.” In contrast, evaluative clarity is backward-looking and focuses on specific past consumption experiences (e.g., “I am sure I like my iPhone.”).

Overall, the author argues that the effect of writing as cognitive processing is a mere measurement effect similar to the ones discussed in chapter 2.2 (Fitzsimons and Morwitz 1996): For example, Bone et al. (2017) showed that asking consumers to write about “what went well” during the purchase experience led to an eventual increase in their spending. The researchers argued that asking consumers a manipulative question combined with the subsequent act of articulating said memory in writing led to a reconstruction of memory and reframed available information about the experience (Loftus and Palmer 1974). In the case of Bone et al. (2017): asking consumers to report what went well led them to have a more positive memory of the experience.

Thus, the author argues that this constitutes the first psychological process initiated by review-writing: Compared to rating, review-writing increases evaluative clarity, amplifying previously held views. Therefore, review-writing could lead to improved retrospective enjoyment for appealing products and experiences compared to rating.

2.4 Review-Writing as Social Interaction

In addition to the first process, the author proposes that writing shifts consumers’ focus on the interaction’s social aspect. This phenomenon has been referred to as “interpersonal involvement” (Chafe and Danielewicz 1987; Jahandarie 1999; Tannen 1985) or “interaction focus” (Shen and Sengupta 2018) and manifests itself as a two-way loop between senders and receivers of communication (Chafe 1982, 1985; Fondacaro and Higgins 1985; Tannen 1985): Not only are the senders focusing on the receivers, but the senders themselves are also aware of the receivers’ focus on them. Previous research has shown that writing can – under certain circumstances – feature a high interaction focus (Shen and Sengupta 2018).

The author argues that a higher interaction focus leads to a stronger connection with whom one wrote the review for. Previous research has demonstrated that consumers’ heightened interaction focus in brand-consumer interactions leads to stronger consumer self-brand connection (Escalas 2004) as consumers connect self-relevant concepts with

statements about the brand (Shen and Sengupta 2018). In this research case, it is proposed that a higher interaction focus may lead to a greater connection to the producer (CTP). The author bases CTP on self-brand connection and tie strength (Umashankar, Ward, and Dahl 2017). Moreover, it is proposed that CTP positively influences consumers' retrospective enjoyment of the producer's products and experiences. Previous research into downstream consequences of self-brand connection has shown it to be associated with positive attitudes towards brands. Specifically, studies have shown that consumers become less susceptible to criticism of the brand (Cheng, White, and Chaplin 2012; Ferraro, Kirmani, and Matherly 2013).

Thus, the author argues that this is the second psychological process initiated by review-writing: Compared to rating, review-writing may lead to a greater interaction focus, which induces stronger connections to the producer and, therefore, will positively influence retrospective enjoyment.

2.5 Review-Writing as Memory Reinforcement

As already discussed in the context of mere measurement effects, research points towards the finding that consumer feedback may impact retrospective enjoyment by interacting with consumers' memories of the product or experience. Building on dominant models of human memory, namely global matching models (Kelly and West 2017) such as MINERVA 2 (Hintzman 1984), CHARM (Eich 1982), TODAM (Murdock 1993), the matrix model (Humphreys et al. 1989), and SAM (Raaijmakers and Shiffrin 1981), the author deduces a moderator of the reviewer effect in the following paragraph.

Global matching models hypothesize that memory traces are encoded in a vast database, which represents human memory. All actions and mental states are hypothesized to encode memory trace, even remembering itself (Sara 2000). Therefore, the two psychological processes described in chapters 2.3 and 2.4 should impact recalled memories by encoding additional memory traces within human memory. As shown in Figure 2, the author predicts that writing reviews about products or experiences should lead to additional evaluative memory traces being encoded (the dark grey dots in Figure 2), reinforcing the consumer's evaluation. These incremental evaluative memory traces cause higher evaluative clarity and polarization of the consumer's views. Moreover, the

author hypothesizes that writing also encodes memory traces that heighten CTP (the light grey dots in Figure 2).

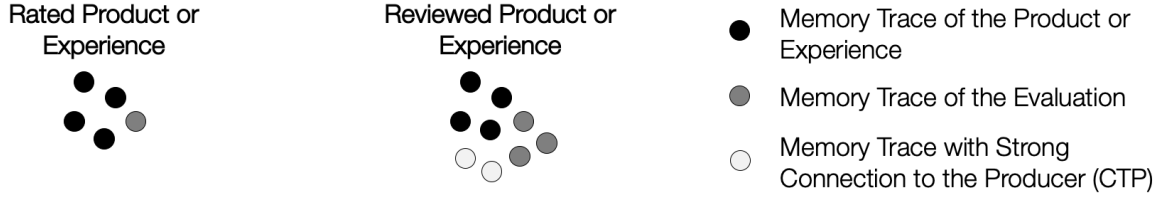


Figure 2. Schematic Representation of Memories of Rated Versus Reviewed Products or Experiences

The first extension of applying global matching models to the reviewer effect would be that familiarity with the product or experience will moderate it. The moderator of familiarity occurs because familiar experiences are, in general, represented by more memory traces of the product or experience (the black dots in Figure 2). Depending on how many available memory traces there are, the number of incremental memory traces encoded by writing versus rating might pale in comparison, and the effect of writing reviews compared to ratings might subside.

Alternatively, putting the above hypothesis that familiarity moderates the reviewer effect, in more algebraic terms: Writing a review ignites more intense cognitive processes that result in more memory traces being encoded than when the same product or service is evaluated via a rating ($\text{Traces}_{\text{Review-writing}} > \text{Traces}_{\text{Rating}}$). At the same time, global matching models of memory predict that the absolute number of memory traces associated with a product or experience reflects the consumer's familiarity with it – that is, a high number of memory traces would be found for familiar products or experiences. In contrast, a low number of memory traces would be found for novel ones ($\text{Total Traces}_{\text{Familiar}} > \text{Total Traces}_{\text{Unfamiliar}}$). Therefore, the hypothesis can be deduced that review-writing's impact on retrospective memory may subside for more familiar products or experiences. The moderating effect of familiarity on the reviewer effect occurs as the relative difference in the number of associated memory traces induced by review-writing will be smaller

for familiar products or experiences. The ratio of the incremental traces set by review-writing to the number of all traces will be larger for unfamiliar versus familiar products and experiences. This relationship is described in the following equation.

$$\frac{Traces_{Review-writing} - Traces_{Rating}}{Total\ Traces_{Unfamiliar}} > \frac{Traces_{Review-writing} - Traces_{Rating}}{Total\ Traces_{Familiar}}$$

Nevertheless, the author predicts that familiarity will moderate the effects of review-writing neither on interaction focus nor on CTP. While review-writing causes specific memory traces to be encoded that heighten evaluative clarity and CTP, repeated exposure to the same product or experience (i.e., familiarity) would not. Therefore, although familiar products or experiences will see a higher number of relevant memory traces, these traces will qualitatively not be different from those relevant to unfamiliar ones. For example, repeatedly eating vanilla ice cream will not inhibit the effects of writing a review about it on evaluative clarity and CTP. However, repeatedly eating vanilla ice cream might cause evaluative clarity's and CTP's effect on retrospective enjoyment to subside, as one might have developed a strong and unwavering opinion about said ice cream after having eaten it repeatedly. Thus, writing a review might heighten evaluative clarity and CTP for consumers familiar with what they are reviewing. Familiarity merely moderates the effect of review-writing on retrospective enjoyment.

The second extension of global matching models' application to the reviewer effect is that writing reviews might lead to richer, more detailed, and overall better memories of the experiences or products. As depicted in Figure 2, it is observable that products and experiences that consumers write reviews about consist of more memory traces. Thus, another observable consequence of the theorizing should be that review-writing may encode more memory traces for products or experiences and create richer memories. For example, after writing a review about a vanilla ice cream one has just consumed, one might remember more details about said ice cream, such as its flavor, color, or consistency, as one recalled them for the review. While this second extension is not articulated as a formal hypothesis in chapter 2.6 because it does not constitute an

integral part of the conceptual model, it may serve as corroborating evidence for the theorizing if confirmed. Therefore, Study 1 tests this prediction by asking participants to recall a video they have written a review about or rated.

2.6 Conceptual Model

The author expects that writing reviews about appealing products or experiences will increase consumers' retrospective enjoyment. Based on global matching models of memory, it is further hypothesized that this effect will be moderated by the familiarity with the product or experience being reviewed. The more familiar the consumer is with the product or experience, the more the reviewer effect will be attenuated. Thus, the author hypothesizes the following, which is also depicted in Figure 3.

- H₁:** Review-writing increases retrospective enjoyment of the reviewed product or experience.
- H₂:** The positive effect of review-writing on retrospective enjoyment (H₁) is attenuated when consumers' familiarity with the product or experience is high.

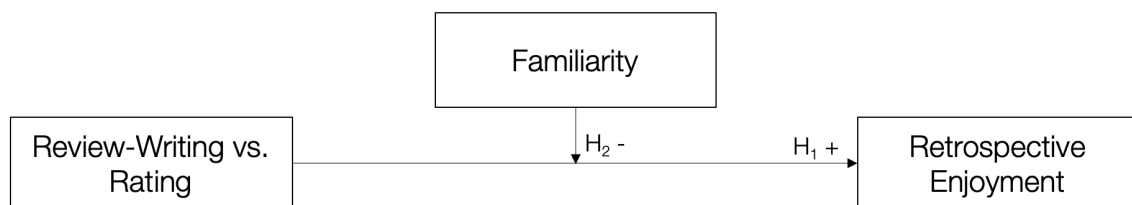


Figure 3. The Reviewer Effect on Retrospective Enjoyment

Moreover, the author hypothesizes that the total effect of review-writing on retrospective enjoyment consists of two parallel psychological processes: First, review-writing increases evaluative clarity, which tends to polarize consumers' thoughts and views, and second, review-writing shifts consumers' focus onto the social aspect of the interaction, which boosts connections to the producer and thereby increases retrospective enjoyment.

- H₃:** The positive effect of review-writing on retrospective enjoyment (H₁) is mediated by increased evaluative clarity.
- H₄:** The effect of evaluative clarity on retrospective enjoyment is moderated by momentary enjoyment.
- H₅:** The positive effect of review-writing on retrospective enjoyment (H₁) is serially mediated by an increased interaction focus and a stronger connection to the producer.

The conceptual model shown in Figure 4 provides an overview of these hypotheses.

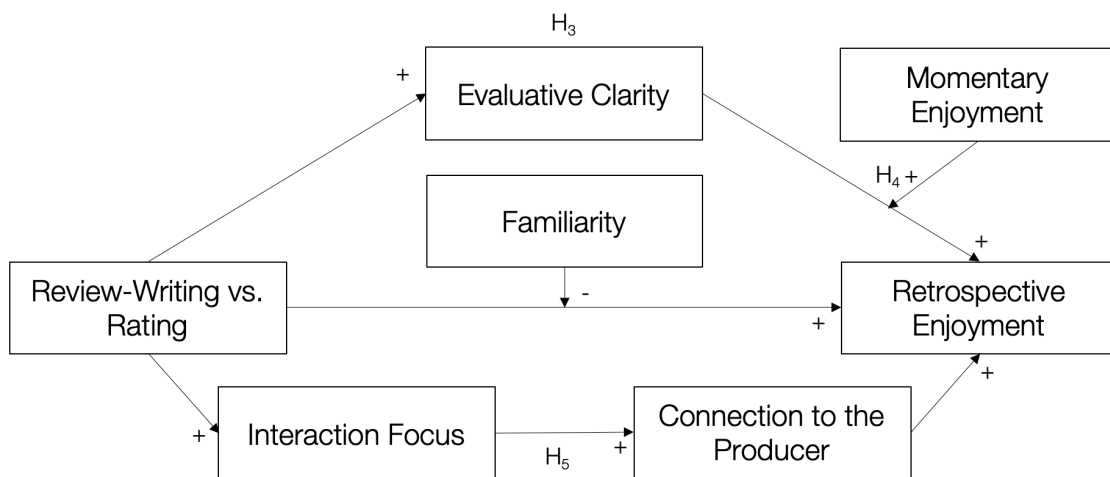


Figure 4. Indirect Effects of Review-Writing on Retrospective Enjoyment

3 Overview of Studies

3.1 Purposes of the Studies Included in this Work

The author presents evidence from five studies, which are summarized in Table 2. The first three studies test the conceptual model in varying settings (online and lab) and using varying stimuli (videos, songs, and jams). Study 1 investigates the overall conceptual model for an unfamiliar consumption experience, Study 2 introduces familiarity as a moderator of the total effect, and Study 3 replicates the results of Study 2 in the lab with physical products.

The remaining studies investigate boundary conditions and seek to corroborate the effect demonstrated in Studies 1-3. Study 4 investigates a boundary condition by comparing review-writing to rating and other forms of writing. The concluding field study demonstrates the reviewer effect in real consumer reviews.

Study	Purpose	Type of Study	Stimulus
Study 1	Demonstrate the reviewer effect.	Online Experiment	Short Animated Videos
Study 2	Introduce familiarity with the product or experience as a moderator of the reviewer effect.	Online Experiment	Songs
Study 3	Replicate the effects found in Studies 1 and 2 in the lab, with physical products, and highlight downstream consequences of the reviewer effect.	Lab Experiment	Jam
Study 4	Compare the effects of review-writing to other forms of writing.	Online Experiment	Songs
Study 5	Replicate the reviewer effect with field data.	Field Study	Fashion Items

Table 2. Overview of Studies

3.2 Motivating the Control Conditions

It is essential to highlight that the central conceptual model described in 2.6 captures the differences between the mere measurement effects of writing a review versus rating a product or service. It does not offer hypotheses for the mere solicitation effects of consumer feedback. Therefore, the control conditions that review-writing is compared to solicit and capture participants' views throughout all studies. In Studies 1 through 4, rating constitutes the control condition, as in practice, this is the most frequently observed alternative way of capturing consumer feedback. In Study 4, other forms of writing are used as additional control conditions to highlight review-writing's unique effect on evaluative clarity.

4 Study 1: Writing a Review Versus Rating an Experience

Study 1 examines how reviewing an enjoyable unfamiliar experience in writing versus rating impacts its retrospective enjoyment. By choosing an enjoyable stimulus, review-writing should positively influence participants' retrospective enjoyment, as both hypothesized indirect processes would reinforce one-another to amplify positive views.

4.1 Method

4.1.1 Pretest

A pretest was conducted to identify the systematic cues (Chaiken 1980; Petty and Cacioppo 1986) of the consumption experience used as the stimulus for the main study, which was a short, animated video ("Minions – The Competition"). Ten graduate students at a Swiss business school were asked to name the five most important features that would allow for an objective evaluation of the video's enjoyability. Afterward, the author coded the input and created a list of the five most named systematic cues. The identified cues were: Entertainment, ease of comprehension for kids and adults, production quality, excitement, and funniness. These were used as a basis to solicit the written reviews and ratings in the main study. This approach was chosen to ensure that participants' reviews and ratings in the main study would focus on the stimulus' evidentiary quality for two reasons. First, previous research has shown that the type of cues used to solicit responses can vary the impact of increased thinking efforts on subsequent evaluations (Alter et al. 2007). Second, this approach also rendered the experimental design more realistic, as asking consumers to review or rate the evidentiary quality of the product is a common goal of actual consumer feedback requests (Best 2009).

4.1.2 Main Study

142 Amazon Mechanical Turk workers from the United States participated in the main study in exchange for payment. Participants were randomly assigned to either a review-writing or rating condition.

Participants read that this was a study about the enjoyment of videos and that they would watch a video, review it for its creators, and fill in a survey about it. They then completed a soundcheck to ensure that they had their computer audio turned on.

After completing this initial check, participants were asked to watch the video “Minions – The Competition,” which was used as a positive stimulus before (see Chun, Diehl, and MacInnis 2017). While watching the video, participants were asked, “How much are you enjoying this movie right now?” (1 = “Not at all enjoyable,” 7 = “Very enjoyable”) every 30 seconds. As the video was around 3.5 minutes long, this resulted in 7 momentary enjoyment ratings, the mean of which was the momentary enjoyment score. If the participants missed one or more momentary enjoyment ratings, they had to re-watch the video. Appendix 1 depicts a screenshot of the momentary enjoyment measurement in study 1.

After watching the video, participants in the review-writing condition were asked to indicate their views on the five systematic cues in writing, while the participants in the rating condition were asked to rate said cues. All five questions were phrased identically in both conditions to prevent any possible framing confounds.

Also, participants in both groups were instructed that this rating or written review “will only be seen by the creators of the ‘Minions’ video (i.e., it is not a public comment)” and that it might be connected to their Amazon Mechanical Turk worker ID. Thereby obviating confounds stemming from the recipient or the anonymity of the feedback.

After completing this step “for the creators,” participants were informed that they would now be asked to fill in a 4-part questionnaire: First, participants were asked to indicate *evaluative clarity*. The two items included in evaluative clarity were “I understand the reasons why I liked/disliked the video.” and “I can explain my feelings about the video.” (1 = “Strongly Disagree” to 7 = “Strongly Agree,” $\alpha = .82$). The measure of evaluative clarity builds on and is contrasted to three similar measures documented in research: understanding (Moore 2012), attitude clarity (Petrocelli, Tormala, and Rucker 2007) and preference clarity (Huffman and Kahn 1998; Simonson 2005).

After responding to the evaluative clarity items, participants were asked to indicate their *retrospective enjoyment* of the video, which consisted of four semantic differentials

(Bad/Good, Disliked/Liked, Not Fun/Fun, Not Enjoyable/Enjoyable, $\alpha = .98$; Chun et al. 2017).

Then, participants indicated their *interaction focus*, which consisted of two items. The measure consisted of “I imagined myself communicating to the creators while rating the video/writing the evaluation.” and “I imagined myself communicating with the creators as if it was a social interaction.” (both rated from 1 = “Strongly Disagree” to 7 = “Strongly Agree,” $\alpha = .90$; adapted from Shen & Sengupta, 2018).

As the last measure pertaining to the hypotheses formulated in chapter 2.6, participants were asked to indicate their agreement to “I feel a personal connection with the creators” (1 = “Strongly Disagree” to 7 = “Strongly Agree”) as a measure of their *connection to the producer (CTP)*, based on self-brand-connection (Escalas 2004) and tie strength (Umashankar, Ward, and Dahl 2017).

Table 3 summarizes the constructs described above, and Table 4 presents the means, standard deviations, and correlations for all mentioned measurements.

Lastly, participants were asked to sort eight scenes from the video to measure *video recall*. Appendix 2 features a screenshot of said question. The mistakes were counted by checking if the right scenes were in their correct relative order. For example, if scenes 1-4 would have been ordered “1,3,2,4,” this would have counted as one out of a maximum of six errors, as only scenes 2 and 3 were incorrectly ordered relative to one another. Scenes 2 and 3 were still in the correct order relative to scenes 1 and 4. This way of counting resulted in a maximum number of 28 mistakes (The triangular number of 7 (8-1); $T_{(7)} = \frac{7(7+1)}{2}$).

After filling in all of these measures, participants had completed the study and were thanked for their effort.

Study 1: Writing a Review Versus Rating an Experience

Construct and Scale Type	Scale Type	Scale Items	Minimum (1) Label	Maximum (7) Label	Construct Adapted from
Momentary Enjoyment	Likert Scale	How much are you enjoying this movie right now?	Not at all enjoyable	Very Enjoyable	Ongoing Enjoyment (Chun, Diehl, and MacInnis 2017)
Evaluative Clarity (EC)	Likert Scale	- I understand the reasons why I liked/disliked the video. - I can explain my feelings about the video.	Strongly Disagree	Strongly Agree	Understanding (Moore 2012)
Retrospective Enjoyment	Semantic Differential	Which adjectives best describe your feelings about the video?	- Bad - Disliked - Not Fun - Not Enjoyable	- Good - Liked - Fun - Enjoyable	Remembered Enjoyment (Chun, Diehl, and MacInnis 2017)

Construct and Scale Type	Scale Type	Scale Items	Minimum (1) Label	Maximum (7) Label	Construct Adapted from
Interaction Focus	Likert Scale	• I imagined myself communicating to the creators while rating the video/writing the evaluation. • I imagined myself communicating with the creators as if it was a social interaction.	• Strongly Disagree	• Strongly Agree	• Interaction Focus (Shen and Sengupta 2018)
Connection to the Producer (CTP)	Likert Scale	• I feel a personal connection with the creators.	• Strongly Disagree	• Strongly Agree	• Self-Brand Connection (Escalas 2004) • Tie Strength (Umashankar, Ward, and Dahl 2017)

Table 3. Scale Items for Construct Measures (Study 1)

Study 1: Writing a Review Versus Rating an Experience

Variable		Mean	SD	1	2	3	4	5	6
1	Review-Writing (vs. Rating)	.51 ^a	.5 ^a	1.00					
2	Momentary Enjoyment	4.92 ^b	1.67 ^b	-.05	1.00				
3	Retrospective Enjoyment	5.36 ^b	1.78 ^b	.04	.85***	1.00			
4	Evaluative Clarity	5.97 ^b	1.07 ^b	.19*	-.05	.03	1.00		
5	Interaction Focus	4.44 ^b	1.67 ^b	.22**	.12	.13	.35***	1.00	
6	CTP	4.92 ^b	1.40 ^b	.14	.43***	.52***	.24**	.28***	1.00

^a values are in a 0-1 format; ^b values are on a 7-point scale format; * $p < .05$, ** $p < .01$, *** $p < .001$

Table 4. Means, Standard Deviations and Correlations among Variables (Study 1) Results

4.1.3 Retrospective Enjoyment

As hypothesized, there was a significant effect of review-writing on retrospective enjoyment when accounting for momentary enjoyment as linear and quadratic terms ($F(1, 138) = 2.43, p = .04$). These controls were added as the authors anticipated a naturally occurring variation regarding the views on the video. In addition, momentary enjoyment exhibited decreasing marginal effects on retrospective enjoyment, implying it to be inserted as a quadratic term. Introducing it increased R^2 and significantly improved model fit ($F(1,138) = 16.65, p < .001$). These controls (i.e., momentary enjoyment as linear and quadratic terms) are used in all further tests, if not mentioned otherwise. The effects of review-writing, momentary enjoyment, and momentary enjoyment squared on retrospective enjoyment are depicted in Figure 5.

Participants' retrospective enjoyment was higher when they wrote a review (Estimated Marginal $M = 5.51$, all subsequent means are estimated marginal means to account for the covariates) versus when they rated ($M = 5.20$) the animated video.

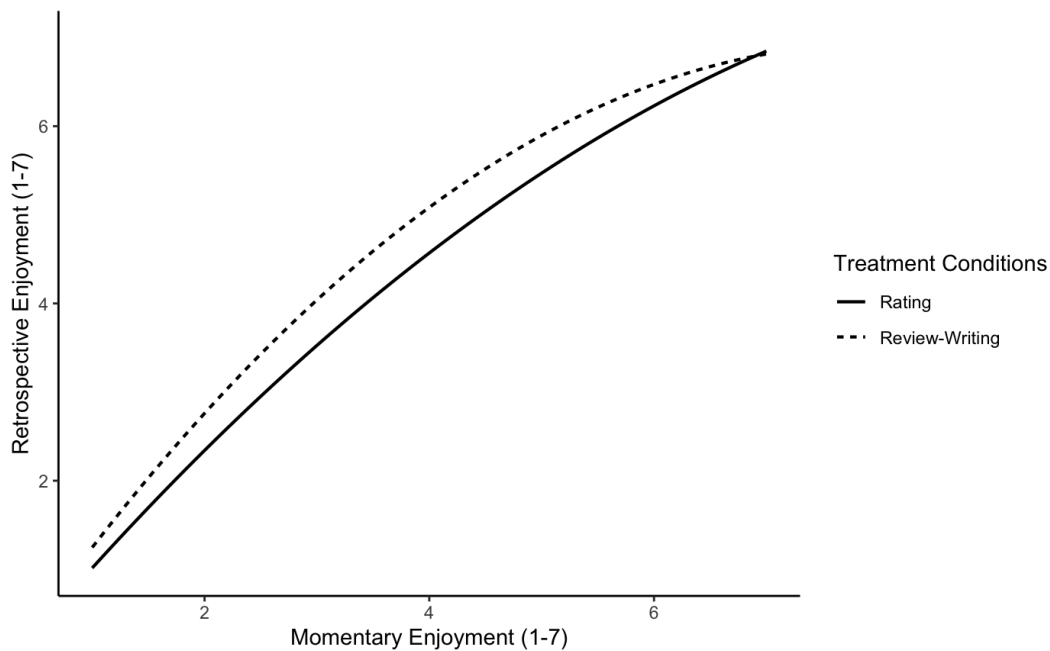


Figure 5. Effects of Review-Writing and Momentary Enjoyment on Retrospective Enjoyment (Study 1)

4.1.4 Evaluative Clarity

There was a significant effect of review-writing on evaluative clarity ($F(1, 138) = 4.36$, $p = .04$). Participants' evaluative clarity was higher when they wrote a review ($M = 6.14$) versus when they rated ($M = 5.79$).

Further, the impact of momentary enjoyment on evaluative clarity (Figure 6) was notable, demonstrating why momentary enjoyment was included as a linear and quadratic term in this regression. A U-shaped relationship between momentary enjoyment and evaluative clarity was observable. Review-writing generally increased evaluative clarity by making those participants' views clearer, who had indicated a non-extreme momentary enjoyment. It seemed that those participants, who had an indifferent enjoyment of the video, developed a greater evaluative clarity when writing a review about the video, thereby lifting them out of the "valley" in the U-shaped relationship between momentary enjoyment and evaluative clarity.

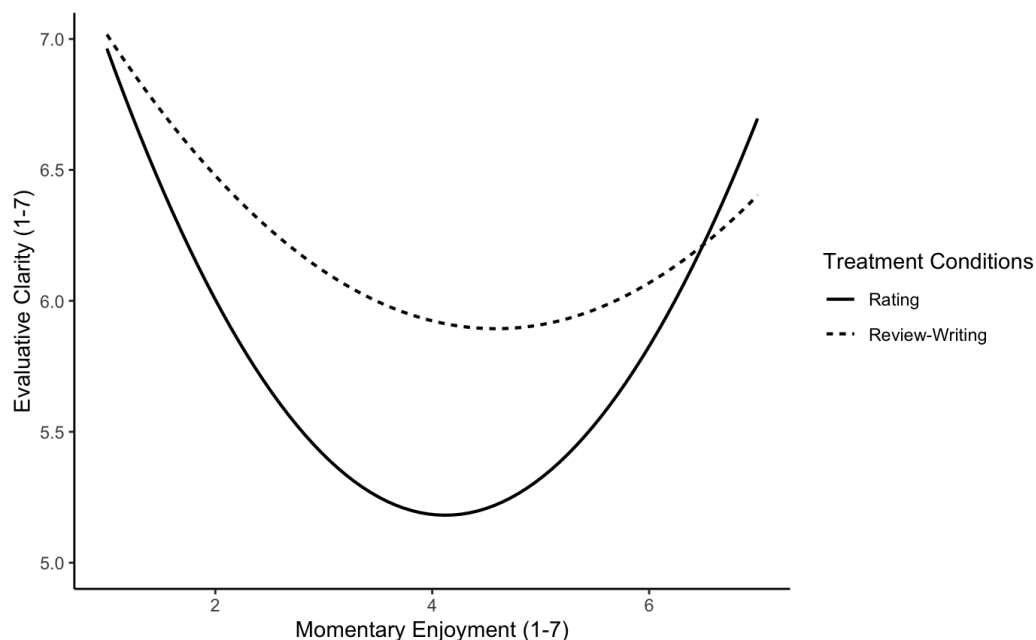


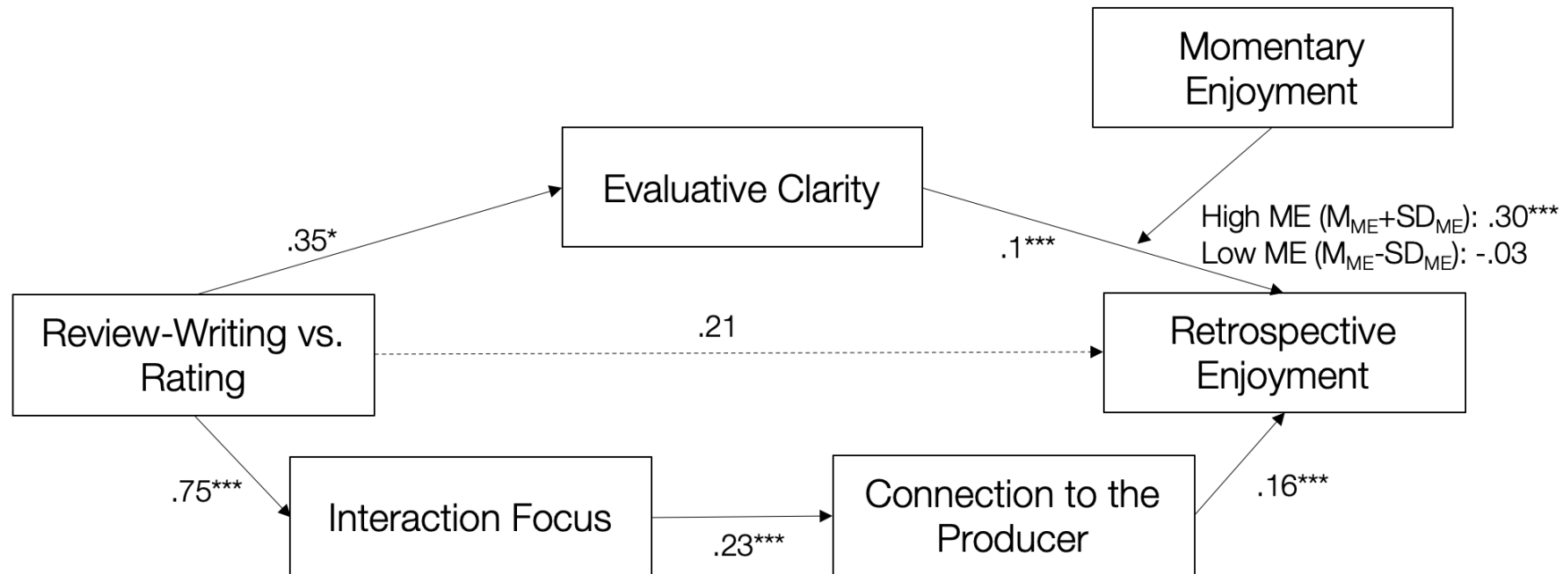
Figure 6. Effects of Review-Writing and Momentary Enjoyment on Evaluative Clarity (Study 1)

4.1.5 Interaction Focus and Connection to the Producer (CTP)

There was a significant effect of review-writing on interaction focus ($F(1, 140) = 7.44$, $p = .007$, no covariates). Participants' interaction focus was higher when they wrote a review ($M = 4.81$) versus when they rated ($M = 4.06$) the animated video. Moreover, there was a significant effect of review-writing on CTP ($F(1, 139) = 4.34$, $p = .04$). CTP was higher when they wrote a review ($M = 5.12$) versus when they rated ($M = 4.70$) the animated video.

4.1.6 Mediation Analyses

All of the above variables were incorporated into a structural equation model (SEM) using the “lavaan” package (Rosseel 2012) in R. This SEM replicated the conceptual model described in chapter 2.6. The experimental manipulation (review-writing vs. rating) and the moderator “momentary enjoyment” were incorporated as exogenous variables and evaluative clarity, interaction focus, CTP, and retrospective enjoyment as endogenous variables. Figure 7 provides an overview of the estimation results for this model.



* $p < .05$, ** $p < .01$, *** $p < .001$

Figure 7. Model Test (Study 1)

Review-writing amplified the effect of previously held, positive views via evaluative clarity, which interacted with momentary enjoyment to increase retrospective enjoyment ($b = .1$, $z = 7.93$, $p < .001$). This interaction is graphed in Figure 8 using the Johnson–Neyman technique for identifying regions in the range of the moderator variable, in which the effect of the independent variable on the dependent variable is and is not significant (Johnson and Neyman 1936; Spiller et al. 2013). The Johnson–Neyman points for $p < .05$ for momentary enjoyment are at 4.21 and 6.20, indicating that higher levels of evaluative clarity result in significantly higher (lower) retrospective enjoyment at momentary enjoyment ratings above 6.20 (below 4.21). The shaded areas represent these differences. In addition, there are no significant differences between the levels of evaluative clarity between the two Johnson–Neyman points.

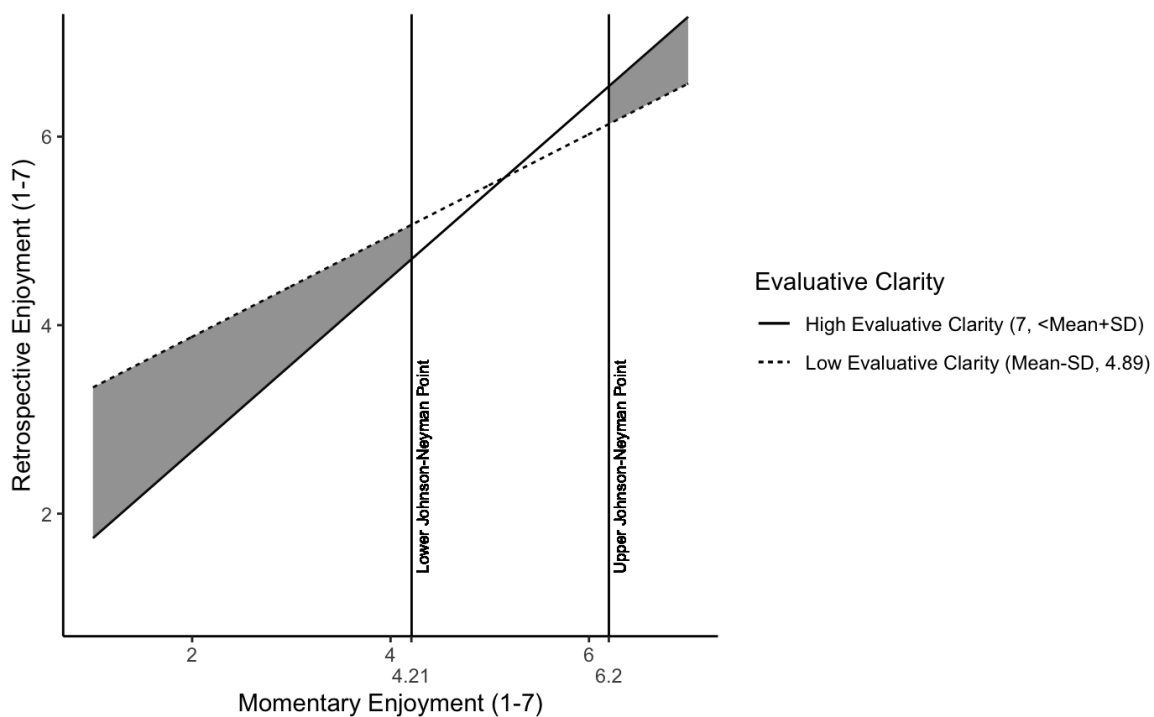


Figure 8. Effects of Evaluative Clarity and Momentary Enjoyment on Retrospective Enjoyment (Study 1)

Review-writing also increased retrospective enjoyment via heightened levels of interaction focus, which had a positive effect on the connection to the producer ($b = .23$, $z = 3.41$, $p < .001$), which increased retrospective enjoyment ($b = .16$, $z = 3.4$, $p < .001$).

These two pathways fully accounted for the overall impact of review-writing on retrospective enjoyment, with the direct effect being insignificant ($b = .21$, $z = 1.5$, $p > .05$).

As a test of overall model fit, the author compared the hypothesized model to a more parsimonious alternative that did not include any indirect (mediational) paths. The hypothesized model used eleven more degrees of freedom, but the corresponding gain in model fit more than offset this reduction in parsimony, as indicated by a chi-square difference test ($\chi^2\Delta(11) = 461.53$, $p < .001$).

4.1.7 Video Recall

Lastly, the second extension of global matching models of memory described in chapter 2.5 predicted that participants would be better able to recall the video after having written reviews about it. As predicted, a Poisson regression revealed that review-writing reduced the number of mistakes when asked to order the eight scenes. Participants in the review-writing condition made .25 fewer mistakes ($\beta = -.25$, $z = -2.46$, $p < .05$). Video recall was measured during a separate post-test ($n = 76$).

4.2 Discussion

4.2.1 Discussion of Findings

Study 1 supports the hypothesis that review-writing can have positive effects on retrospective enjoyment under certain circumstances. In this case, an animated short video was tested, which participants were unfamiliar with, and which was known to be liked.

Moreover, Study 1 informs this finding in two major ways: First, it supports the proposed indirect effects. Participants' views became more explicit and polarized after writing a review. The author had hypothesized that this effect would be driven by how writing structures thoughts using an established syntax and vocabulary. This hypothesis was supported by the mediation of the effect of review-writing onto retrospective enjoyment via evaluative clarity. In contrast, participants in the rating condition did not achieve the same levels of evaluative clarity and, consequentially, their views were less polarized.

Also, participants' views had become clearer because writing a review set a different focus of the interaction. Participants in the review-writing condition were more focused on the social aspect of the interaction, increasing interaction focus, and giving rise to a stronger connection to the producer. This stronger connection to the producer then, in turn, positively impacting their retrospective evaluation of the video. In contrast, participants in the rating condition were more focused on merely transmitting the required information.

Lastly, study 1 also tested an implicit hypothesis, which was the second extension of the effects of the global matching models of memory. The recall question, which was a part of study 1, provided support for this hypothesis. It seems that when consumers wrote reviews about something, they were able to recall that product or experience better. This points towards them having richer, more detailed, and overall better memories of the reviewed experience or product. Alternatively, in terms of global matching models of memory: Writing reviews might help consumers encode more memory traces about the product or experience.

4.2.2 Limitations

While Study 1 demonstrated the reviewer effect and offered support for the hypothesized cognitive processes driving the reviewer effect, it was not without limitations. First, it did not test the hypothesized full model by having used an unfamiliar consumption experience as a stimulus. An unfamiliar stimulus was chosen to create the ideal circumstances to engender the reviewer effect.

Second, Study 1 used a video as a stimulus. While this may be a common consumption experience, it nevertheless is a specific one. For example, as the animated video tells a story, it might be the storytelling that works well with the reviewer-effect. Moreover, the reviewer effect might depend on the chosen systematic cues used to elicit the feedback. It might be that slightly different cues are less apt to elicit the effect of writing reviews on retrospective enjoyment.

Lastly, Study 1 did not yet elicit any downstream effects. It might be that retrospective enjoyment does nothing to improve the performance of the producer. While it is

probable that retrospective enjoyment will influence future consumption decisions, it still needs to be demonstrated.

Therefore, subsequent studies will address these limitations. By expanding the variables, manipulations, and moderators included in the study, the author hopes to provide conclusive support for the hypothesized effects. Moreover, by using different stimuli –thereby also varying the systematic cues – and by varying the experimental setting, the author hopes to address the limitations.

5 Study 2: The Moderating Role of Familiarity

Study 1 demonstrated the reviewer effect. It showed that review-writing (vs. rating) could cause heightened retrospective enjoyment under certain circumstances. It also demonstrated that the reviewer effect was driven by two separate psychological processes: First, by making one's opinion clearer and, second, by strengthening participants' connection to the producer.

Study 2 aims to replicate the findings of Study 1 and additionally introduce familiarity as a theoretically derived moderator of the total reviewer effect. Given that in terms of global matching models of human memory, review-writing is hypothesized to produce a consistently superior number of memory traces versus rating, the author predicted that the reviewer effect would subside for familiar products and experiences. Familiarity should impact the reviewer effect because familiar experiences are already represented by relatively more memory traces in consumers' minds. Therefore, the incremental memory traces created by writing a review (vs. rating) pale compared to extant pertinent memory traces and, subsequently, have little impact on the overall memory when recalled. Moreover, Study 2 aims to generalize the reviewer effect to another type of stimulus.

5.1 Method

5.1.1 Pretest

First, a pretest with 15 Amazon Mechanical Turk workers to identify the systematic cues of songs (Chaiken 1980; Petty and Cacioppo 1986) was conducted. This pretest identified the following systematic cues of songs: The beat or rhythm, the lyrics, the vocals, the variety offered by the song, and how it made one feel. These cues were used to ensure the participants of the main study evaluated the evidentiary quality of the songs.

5.1.2 Main Study

244 Amazon Mechanical Turk workers participated in this 2 (review-writing or rating) $\times$ 2 (familiar or unfamiliar song) between-subjects study in exchange for payment. Participants read that the study was about the enjoyment of songs and that they would

be asked to listen to a song, evaluate it for its creators, and then fill in a survey about their experience.

In the unfamiliar condition, study participants listened to the song “Loving is Easy” by the artist “Rex Orange County” (albeit a clean version, in which explicit language was removed). In the familiar condition, participants listened to the song “Happy” by “Pharrell Williams.” Both songs were about innocuous, positive themes. Participants were asked to rate them every 30 seconds. The mean of the ratings constituted the momentary enjoyment measure. As a song could be less engaging than a video, one change was made compared to Study 1: Participants were asked to indicate their momentary enjoyment within 15 seconds of the momentary enjoyment rating request appearing on their screen. If they did not enter their enjoyment within 15 seconds, their progress was deleted, and they had to re-listen to the song and fill in all momentary enjoyment ratings.

Table 5 presents the means, standard deviations, and correlations for all measured constructs in Study 2.

Study 2: The Moderating Role of Familiarity

Variable		Mean	SD	1	2	3	4	5	6	7
1	Review-Writing (vs. Rating)	.39 ^a	.49 ^a	1.00						
2	Familiarity	.35 ^a	.48 ^a	-.07	1.00					
3	Momentary Enjoyment	4.84 ^b	1.70 ^b	.12	.22***	1.00				
4	Retrospective Enjoyment	5.24 ^b	1.81 ^b	.16*	.24***	.85***	1.00			
5	Evaluative Clarity	6.07 ^b	.92 ^b	.19**	.00	.13*	.13*	1.00		
6	Interaction Focus	4.76 ^b	1.60 ^b	.22***	.01	.36***	.33***	.37**	1.00	
7	CTP	4.85 ^b	1.46 ^b	.15*	.20**	.36***	.71***	.16*	.41***	1.00

^a values are in a 0-1 format; ^b values are on a 7-point scale; * $p < .05$, ** $p < .01$, *** $p < .001$

Table 5. Means, Standard Deviations and Correlations among Variables (Study 2)

5.2 Results

5.2.1 Manipulation Checks

The familiarity manipulation was checked by asking all participants to indicate their aided awareness of the songs before listening to them. This measure consisted of two items (“I am aware of the song ‘Loving is Easy’/ ‘Happy’” and “I am aware of the musician ‘Rex Orange County’/‘Pharrell Williams’”), and participants were asked to indicate their agreement (1 = “Strongly Disagree,” 7 = “Strongly Agree,” $\alpha = .95$). A t-test revealed a significant difference in aided awareness between the popular and unpopular song ($M_{\text{familiar}} = 6.05$, $M_{\text{unfamiliar}} = 1.82$, $t(218) = 23.07$, $p < .001$).

5.2.2 Retrospective Enjoyment

As hypothesized, an ANOVA revealed a significant interaction of review-writing and familiarity on retrospective enjoyment ($F(1, 238) = 6.12$, $p < .05$; see Figure 9). In the unfamiliar condition, review-writing increased retrospective enjoyment ($M = 5.62$) versus rating ($M = 5.14$). In the familiar condition, review-writing did not influence retrospective enjoyment ($M = 5.53$) versus rating ($M = 5.68$). These results imply that review-writing (vs. rating) only influenced retrospective enjoyment in the unfamiliar condition. In the familiar condition (i.e., when participants listened to a familiar song), review-writing did not change their retrospective enjoyment.

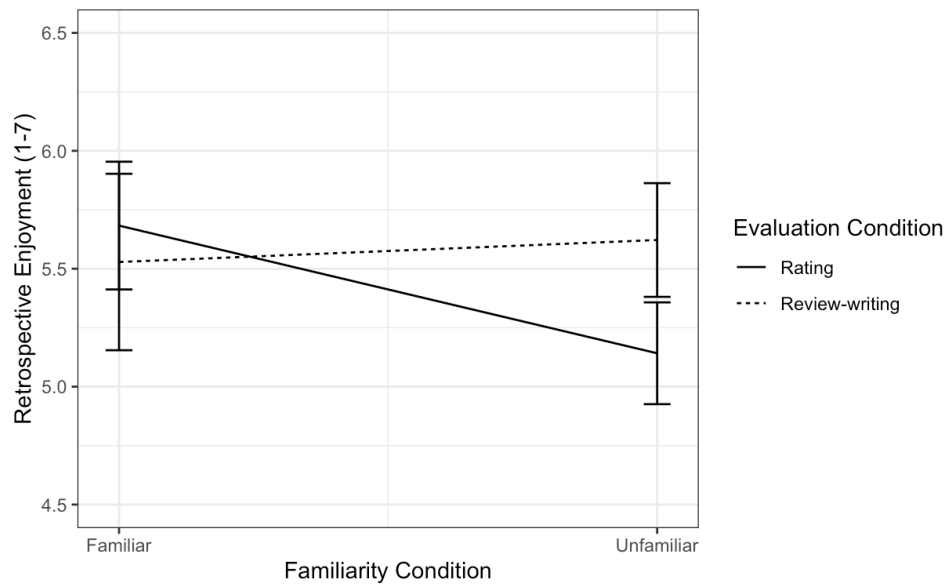
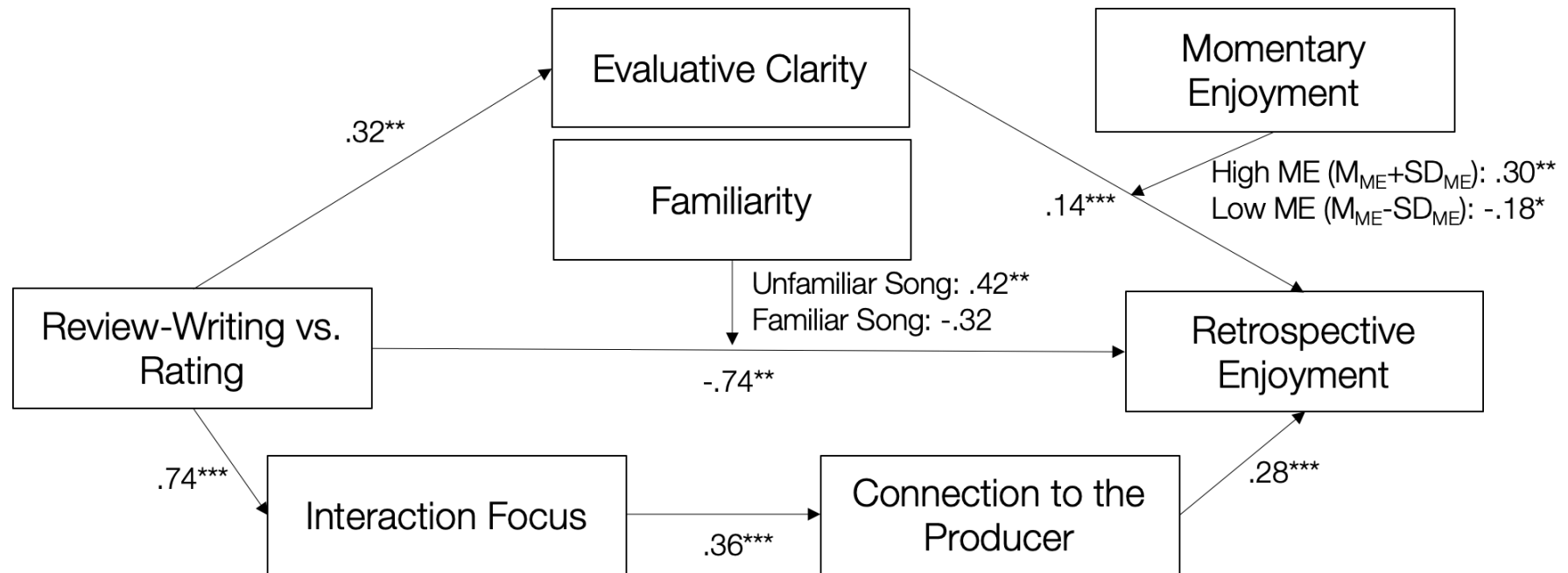


Figure 9. Effects of Review-Writing and Familiarity on Retrospective Enjoyment (Study 2)

5.2.3 Mediation Analyses

As in the previous study, the author estimated a SEM to test the conceptual model. The model followed the same overall structure as in Study 1 and is depicted in Figure 10.



* $p < .05$, ** $p < .01$, *** $p < .001$

Figure 10. Model Test (Study 2)

Compared to the SEM in Study 1, the critical difference was that familiarity was added as the moderator of review-writing's direct effect on retrospective enjoyment. This interaction was significant ($b = -.74$, $z = -3.23$, $p < .01$), meaning that the direct effect of review-writing added onto the indirect effects of writing when the song was unpopular ($b = .42$) and compensated the indirect effects of writing when the song was popular ($b = -.32$).

As a test of overall model fit, the author again compared the hypothesized model to a more parsimonious alternative that did not include any indirect (mediational) paths. The hypothesized model used 15 more degrees of freedom, but the corresponding gain in model fit more than offset this reduction in parsimony, as indicated by a chi-square difference test ($\chi^2\Delta(15) = 733.59$, $p < .001$).

5.3 Discussion

5.3.1 Discussion of Findings

The main finding in Study 2 was that familiarity with the song that was being reviewed diminished the reviewer effect. This finding is informative as it serves as a critical piece of support for the global matching models of memory as the theoretical foundation of the reviewer effect. Review-writing does not merely affect the momentary impression of a product or experience, but it seems to interact with available memory traces in consumers' minds. This interaction with memory could imply that the reviewer effect is beneficial for marketers of novel products. In Study 2, the reviewer effect caused participants to rate an unfamiliar artist and song just as well as a familiar song. The same, unfamiliar song was rated worse than the familiar song when participants simply rated the songs.

5.3.2 Limitations

Study 2 addressed many limitations of Study 1. In contrast to Study 1, Study 2 tested the full conceptual model, including familiarity's moderating impact on the reviewer effect. Moreover, Study 2 did not merely introduce familiarity as a measured variable but actively manipulated this moderator with two different experimental conditions.

However, some limitations of Study 1 remained. First, it could be argued that songs are equally specific consumption experiences as videos. Also, Study 2 again stopped short of demonstrating downstream consequences and did not provide support for review-writing's impact on variables beyond retrospective enjoyment.

The next study will aim to address those two limitations while still replicating the reviewer effect.

6 Study 3: Replication with Physical Products and Downstream Consequences

While Study 1 and 2 demonstrated the reviewer effect in online settings using videos and songs, Study 3 tested the reviewer effect in the lab with physical products. University students were asked to taste jam in the lab and then review it in writing or rate it. The aim was to replicate the findings from both previous studies with physical products: Participants should have more positive views about the jam after having written reviews about it versus having rated it. In addition, Study 3 investigated the potential downstream consequences of the reviewer effect and tested its impact on actual purchasing behavior. Participants were given the opportunity to buy the product at the end of the experiment. The theorizing was that if writing reviews (vs. rating) leads to more positive retrospective enjoyment of the product, participants should also be more likely to buy it after having written a review about it.

6.1 Method

6.1.1 Pretest

10 Amazon Mechanical Turk workers participated in the pretest to identify the systematic cues of jam. Their input was coded and summarized in the same way as for the previous studies.

6.1.2 Main Study

104 students at a major Swiss university participated in this lab study in exchange for payment. Participants were randomly assigned to either the review-writing or rating condition. Participants read that this was a “jam tasting” study and that the study's purpose was to investigate their views of different flavors of jam. The study used “Darbo” jam as a stimulus, an Austrian brand, which most participants would be unfamiliar with, promoting my studied effects. Participants were instructed to taste their individual 25g serving in three scoops – asking them to indicate their momentary enjoyment after each scoop. The mean of these three items constituted the measure of momentary enjoyment. After tasting the jam, participants were asked to discard any remaining jam and evaluate it in writing or rating. After providing their reviews or

ratings, participants responded to the same measures as in the previous online studies, except for two changes.

The first change was that the previously used main dependent variable “retrospective enjoyment” contained items, which did not lend itself to expressing one’s views of jam. For example, deciding whether the product was “fun” vs. “not fun” did not seem appropriate for jam. Also, this opportunity was used to test an extension of the dependent variable. Therefore, it was exchanged for the more suitable dependent variable “retrospective evaluation,” which consisted of five items for participants to report their evaluation of the jam (good/bad, appealing/unappealing, positive/negative, liked/disliked; adapted from Moore, 2012). Table 6 summarizes the changes in measured constructs versus the previous studies.

The second change was that at the end of the study, when participants signed out and picked up their payment, they were offered two options: They could either receive their payment in full or could choose to reduce their payment by 0.5 CHF (approx. \$ 0.51) and additionally receive a 28g miniature jar of jam of the brand “Darbo,” which they had just tasted. An image of a jam purchase form is presented in Appendix 5. In total, 36% of all participants chose this second option and exchanged 0.5 CHF of their pay for a miniature jar of jam. As a downstream consequence, the author hypothesized that a more positive retrospective evaluation would increase the probability of buying a miniature jar of jam.

Table 7 presents the means, standard deviations, and correlations for all measured constructs in Study 3.

Construct and Scale Type	Scale Type	Scale Items	Minimum (1) Label	Maximum (7) Label	Construct Adapted from
Retrospective Evaluation	Semantic Differential	Which adjectives best describe your feelings about the jam?	- Bad - Unappealing - Negative - Disliked	- Good - Appealing - Positive - Liked	Evaluation (Moore 2012)

Table 6. Adapted Scale Items for Construct Measures (Study 3)

Study 3: Replication with Physical Products and Downstream Consequences

Variable		Mean	SD	1	2	3	4	5	6	7	8
1	Review-Writing (vs. Rating)	.50 ^a	.50 ^a	1.00							
2	Familiarity	2.08 ^b	2.14 ^b	.03	1.00						
3	Momentary Enjoyment	4.80 ^b	1.32 ^b	.15	.10	1.00					
4	Retrospective Evaluation	5.11 ^b	1.13 ^b	.02	.15	.71***	1.00				
5	Evaluative Clarity	5.94 ^b	.77 ^b	.16	.11	-.02	.14	1.00			
6	Interaction Focus	4.39 ^b	1.63 ^b	.26**	.12	.16	.03	.16	1.00		
7	CTP	4.32 ^b	1.13 ^b	.13	.26**	.30**	.41***	.18	.37***	1.00	
8	Jam Purchase	.36 ^a	.48 ^a	.05	-.06	.20*	.34***	-.04	-.03	.22*	1.00

^a values are in a 0-1 format; ^b values are on a 7-point scale; * $p < .05$, ** $p < .01$, *** $p < .001$

Table 7. Means, Standard Deviations and Correlations among Variables (Study 3)

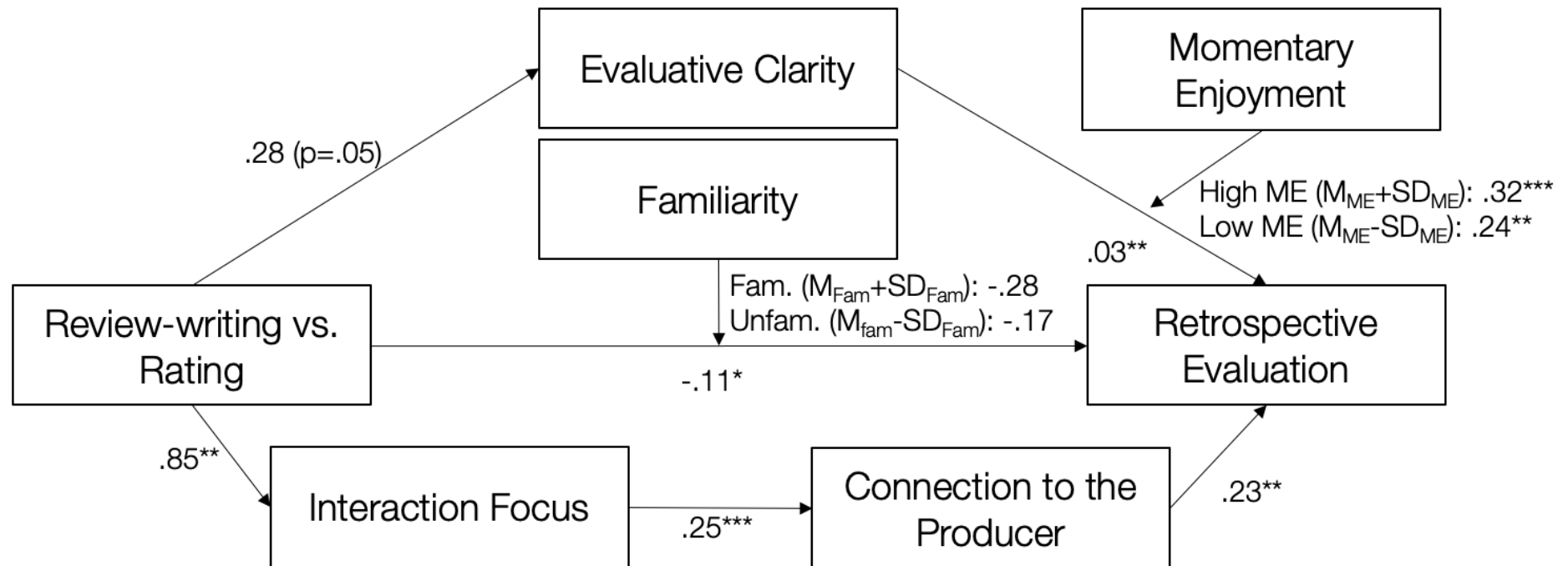
6.2 Results

6.2.1 Retrospective Evaluation

Like Study 2, aided awareness of the brand was used to measure the familiarity with the brand “Darbo.” The author expected aided awareness to moderate the effect of review-writing on retrospective evaluation. As hypothesized, an ANOVA revealed that the effect of review-writing near-significantly interacted with aided awareness of the brand “Darbo” ($F(1, 99) = 3.89, p = .05$) when controlling for previous brand liking. When participants were unfamiliar with the brand (i.e., when aided brand awareness was low; $M-SD$), review-writing increased their retrospective evaluation ($M = 5.24$) vs. rating ($M = 4.94$). This effect disappeared when participants were familiar with the brand ($M+SD$, $M_{\text{RevWrit}} = 5.16$, $M_{\text{Rating}} = 5.06$). As in Study 2, review-writing increased the retrospective evaluation when participants were unfamiliar with the product or experience. In contrast, when participants were familiar with the brand, review-writing did not impact their retrospective evaluation.

6.2.2 Mediation Analyses

As in the previous studies, a SEM was estimated, exchanging the previous dependent variable retrospective enjoyment for retrospective evaluation. The estimated model is depicted in Figure 11 and replicates the effects found in Studies 1 and 2.



* $p < .05$, ** $p < .01$, *** $p < .001$

Figure 11. Model Test (Study 3)

As a test of overall model fit, the hypothesized model was compared to a more parsimonious alternative that did not include any indirect (mediational) paths. The hypothesized model used 17 more degrees of freedom (the delta in degrees of freedom increased versus Study 2 due to the inclusion of previous brand liking as a control), but the corresponding gain in model fit more than offset this reduction in parsimony, as indicated by a chi-square difference test ($\chi^2\Delta(17) = 335.13, p < .001$).

6.2.3 Jam Purchase

Participants were given the opportunity to purchase the jam at the end of the study. They could choose between receiving the full payment or reducing their payment and receiving a jar of jam. As hypothesized, a logistic regression revealed that retrospective evaluation was a significant predictor of the purchase of the jam ($b = .77, p < .01$). As retrospective evaluation increased by one unit, the change in the odds of buying the miniature jar of jam was 2.16, or the probability increased by 68%.

6.3 Discussion

6.3.1 Discussion of Findings

The findings of Study 3 are important in several ways: First and foremost, Study 3 replicated the results of Studies 1 and 2 in an offline lab setting with a physical product as a stimulus. As mentioned in previous discussion sections, one of the limitations of Studies 1 and 2 was that they used experiential products such as videos or songs as stimuli, and albeit common, these are specific consumption experiences. Study 3 addressed this limitation and replicated the reviewer effect using jam as a stimulus.

Second, Study 3 demonstrated the impact of review-writing on downstream consequences. It showed that not only did review-writing increase retrospective evaluation, but it also provided support for retrospective evaluation increasing the actual purchase of the product. While a total effect of review-writing onto the purchase of the jam was not found, Study 3 provided support both for review-writing increasing retrospective evaluation and retrospective evaluation increasing the probability of purchase. Therefore, the reviewer effect leads to more positive views of the product/experience and the producer, leading to more sales.

Third, while Study 2 already introduced familiarity as a moderator, it did so via different treatment conditions. Study 3 replicated the findings of Study 2 regarding the moderating influence of familiarity. However, it did so via the naturally occurring variance in familiarity with the brand used as a stimulus in the participant sample, providing additional support for the finding that the reviewer effect is most potent when consumers are relatively unfamiliar with the product or experience they are reviewing.

Lastly, an additional contribution of Study 3 is that it well concealed the purpose of the study. The study was organized as a jam tasting, and students were asked to review a largely unfamiliar foreign product.

6.3.2 Limitations

While Study 3 addressed the majority of limitations of Studies 1 and 2, it did not yet address one limitation that all three studies have in common. So far, all studies compared review-writing to rating. Moreover, while it was hypothesized that the reviewer effect is unique to writing reviews, the evidence so far only supports its effects compared to rating. It could be that any form of writing initiates the cognitive processes that lead to the reviewer effect. That means that the production of written communication that does not fit this work's definition of reviews in consumer feedback (e.g., messages) could elicit these effects. The next study will address this limitation.

7 Study 4: Comparing Different Modes of Non-Evaluative and Evaluative Writing and Rating

While Studies 1-3 demonstrated the reviewer effect for review-writing various settings and using various stimuli, they demonstrated it in contrast to rating as the control condition. However, the author's theorizing does not specify that it only occurs when comparing review-writing to rating. Instead, the reviewer effect should (at least partially) be observable when comparing review-writing to other forms of written communication. Study 4 investigates the reviewer effect by comparing review-writing to alternative forms of writing: The author tests whether the effect observed in previous studies is (1) exclusive to guided review-writing (i.e., articulating one's views for the five systematic cues), or (2) if it is also a result of unguided review-writing (i.e., just articulating one's views freely) or (3) even writing non-reviewing messages to the producer in general.

Moreover, given that the use of explanative language has been shown to modify the retrospective enjoyment of consumption experiences (Moore 2012), the author studies the language used by participants in Study 4.

7.1 Method

216 Amazon Mechanical Turk workers, who were unfamiliar with the song "Loving is Easy" by "Rex Orange County" (the unfamiliar song used for study 2), participated in exchange for payment. Participants were randomly assigned to one of the following four treatments: First, guided written reviews on systematic cues (using the same systematic cues as study 2), second, unguided written reviews ("Imagine the creators of the song ask you for feedback on it. Please let them know your opinion!"), third, non-reviewing messages ("Imagine you have the opportunity to write a message to the creators of the song! This is not an evaluation of the song. Simply write the creators a message. You may write about anything, but do not evaluate the song!"), and fourth, rating of the systematic cues. Apart from the new treatment conditions, this study followed the same structure as the previous experiments: Participants were asked to listen to a song while indicating their momentary enjoyment every 30 seconds, then to provide the feedback according to their treatment condition (i.e., evaluate the song in

Study 4: Comparing Different Modes of Non-Evaluative and Evaluative Writing and Rating

one of the four different rating or review-writing conditions), and then to fill in the same measures as in the previous studies. Table 8 contains the means, standard deviations, and correlations for all measured constructs in Study 4.

Study 4: Comparing Different Modes of Non-Evaluative and Evaluative Writing and Rating

Variable		Mean	SD	1	2	3	4	5	6	7	8	9
1	Rating (vs. any other treatment)	.32 ^a	.47 ^a	1.00								
2	Written Message (vs. any other treatment)	.23 ^a	.42 ^a	-.38***	1.00							
3	Unguided Review-Writing (vs. any other treatment)	.26 ^a	.44 ^a	-.41***	-.33***	1.00						
4	Guided Review-Writing (vs. any other treatment)	.19 ^a	.39 ^a	-.33***	-.26***	-.28***	1.00					
5	Momentary Enjoyment	4.52 ^b	1.66 ^b	0	-.004	-.01	0.05	1.00				
6	Retrospective Enjoyment	4.94 ^b	1.75 ^b	-.12	-.04	.06	0.12	.87***	1.00			
7	Evaluative Clarity	6.12 ^b	.79 ^b	.01	-.14*	.04	0.09	.04	.04	1.00		
8	Interaction Focus	5.07 ^b	1.40 ^b	-.18**	.08	.02	0.10	.15*	.15*	.34***	1.00	
9	CTP	4.67 ^b	1.28 ^b	-.12	-.11	.15*	0.10	.58***	.65***	.07	.24***	1.00

^a values are on a 0-1 scale format; ^b values are on a 7-point scale format; * $p < .05$, ** $p < .01$, *** $p < .001$

Table 8. Means, Standard Deviations and Correlations among Variables (Study 4)

7.2 Results

7.2.1 Retrospective Enjoyment

As hypothesized, an ANOVA revealed that the treatment conditions impacted retrospective enjoyment ($F(3,210) = 5.25, p < .01$). Retrospective enjoyment was lowest for participants who had rated the song ($M = 4.81$), higher when participants wrote a non-evaluative message to the creator ($M = 5.09$), even higher when participants wrote an unguided review ($M = 5.26$), and highest when participants wrote the guided reviews ($M = 5.40$). Next, a planned contrast analysis grouped the treatment conditions to investigate the effects further. The exact contrasts can be seen in Table 9.

Contrast	Description	Control Condition	Treatment Condition
First Contrast	Any form of writing versus rating	Rating	- Written Messages - Unguided Written Reviews - Guided Written Reviews
Second Contrast	Any form of evaluative writing versus written messages	Written Messages	- Unguided Written Reviews - Guided Written Reviews
Third Contrast	Guided written reviews versus unguided written reviews	Unguided Written Reviews	Guided Written Reviews

Table 9. Planned Contrasts of the Treatment Conditions (Study 4)

Planned contrasts revealed that any form of writing significantly increased retrospective enjoyment versus rating ($b = .10, t(210) = 3.630, p < .001$). Moreover, the second contrast, the effect of written reviews (guided and unguided) versus written messages on retrospective enjoyment approached significance ($b = .08, t(210) = 1.65, p = .1$). The last contrast, the effect of guided versus unguided reviews, was insignificant. This means that – as theorized – while the reviewer effect was observable in all forms of

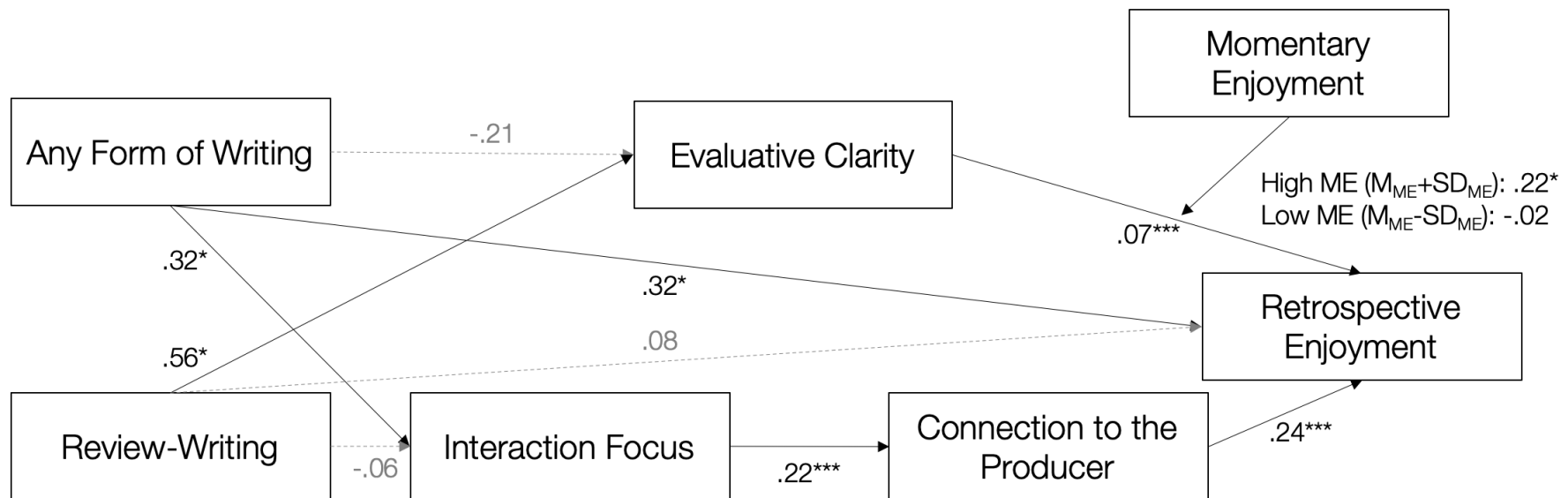
writing (compared to rating), there was a tendency that reviews induced an even stronger reviewer effect in participants than writing messages. However, consistent with our theorizing, it did not make a difference whether the reviews were guided (i.e., participants had to write their review according to the five systematic cues) or unguided (i.e., participants could simply write an open-ended review).

7.2.2 Evaluative Clarity

Unlike hypothesized, an ANOVA did not support the hypothesis that the treatment conditions impacted evaluative clarity ($F(3,210) = 1.98, p = .11, M_{\text{Rating}} = 5.91, M_{\text{Written Messages}} = 6.21, M_{\text{Unguided Written Reviews}} = 6.27, M_{\text{Guided Written Reviews}} = 6.12$). However, planned contrasts revealed that any kind of evaluative writing (i.e., guided and unguided review-writing) increased evaluative clarity ($b = .11, t(210) = 2.435, p < .05$) compared to other forms of writing (i.e., written message; Second contrast in Table 9). All other contrasts were insignificant. The findings imply means that written reviews increased evaluative clarity compared to all other treatment conditions. As hypothesized, the reviewer effect as it pertains to evaluative clarity is exclusive to written reviews.

7.2.3 Mediation Analyses

To test the impact of the different experimental conditions onto the entire conceptual model, a SEM was estimated that featured one critical difference regarding the exogenous variable compared to the SEMs of Studies 1-3. The four treatment conditions were summarized into three dummy variables that mirrored the planned contrasts of the previous analysis (see Table 9): The first dummy variable capture written versus rated interactions with the producer (i.e., 0 for ratings and 1 for all other treatments). The second dummy variable captured review-writing vs. non-review-writing (i.e., 1 for unguided written reviews and written reviews on the systematic cues, and 0 for ratings and written messages). The third dummy variable captured review-writing on systematic cues versus other conditions (i.e., 1 for written reviews on the systematic cues and 0 for all other treatments). However, this third dummy variable was eventually excluded from the model as it did not significantly impact any of the variables. Figure 12 provides an overview of the estimation results for this model.



* $p < .05$; ** $p < .01$; *** $p < .001$. Rating is the base condition. The third contrast, “guided written reviews versus unguided written reviews,” was excluded as it did not significantly impact any variables.

Figure 12. Model Test (Study 4)

My analysis revealed that while any form of writing increased interaction focus ($b = .56$, $z = 2.22$, $p < .05$), writing reviews did not further increase interaction focus. On the other hand, while only review-writing increased evaluative clarity ($b = .32$, $z = 2.44$, $p < .05$), writing messages did not. As in previous studies, evaluative clarity interacted with momentary enjoyment of the song ($b = .07$, $z = 5.10$, $p < .001$) and polarized participants' views. Also, as in previous studies, interaction focus increased participants' connections to the producer (CTP, $b_{\text{IntFoc}} = .22$, $z = 3.66$, $p < .001$), which in turn again increased retrospective enjoyment ($b_{\text{CTP}} = .24$, $z = 5.62$, $p < .001$).

As a test of overall model fit, the author compared the hypothesized model to a more parsimonious alternative that did not include any indirect (mediational) paths. The hypothesized model used eleven more degrees of freedom, but the corresponding gain in model fit more than offset this reduction in parsimony, as indicated by a chi-square difference test ($\chi^2\Delta(11) = 568.46$, $p < .001$)

7.2.4 Explaining versus Non-Explaining Language

Previous research by Moore (2012) found that using explaining language to discuss a consumption experience such as a song might impact retrospective enjoyment. To test this alternative explanation, the author analyzed participants' written texts using the Linguistic Inquiry and Word Count (LIWC) text analysis program (Pennebaker et al. 2015), which contains a suitable dictionary to detect cognitive processes of causation that included words such as "because," "effect," and "hence," similar to the words coded by Moore (2012). No difference in usage of explaining language could be found between the written conditions (written messages: $M = 1.57$, $SD = 1.83$; unguided written reviews: $M = 1.34$, $SD = 1.76$; guided written reviews: $M = 1.84$, $SD = 1.22$; $F(143) = 1.05$, $p = .35$), providing support to discourage this alternative explanation.

7.3 Discussion

7.3.1 Discussion of Findings

Study 4 showed that while any form of writing could increase retrospective enjoyment via interaction focus, only review-writing could impact evaluative clarity. Thereby, the results of Study 4 support the hypothesis that the total reviewer effect is only ignited by review-writing as only this form of writing increases evaluative clarity in consumers. This finding has important practical implications. For example, it strongly suggests that when managers suspect their consumers of being satisfied with their products or experiences, they should let consumers evaluate in written form as this strengthens and polarizes their opinions. Other forms of writing (such as messages) would not suffice to engender the reviewer effect.

Moreover, Study 4 discouraged a potential alternative explanation, namely that the varying use of explaining language might drive the reviewer effect: Participants in the different conditions did not vary in their use of explaining language. Therefore, the finding suggests that the reviewer effect is not driven by the participants' use of explaining language.

7.3.2 Limitations

Study 4 and all previous studies have in common that they all took place in an experimental setting. While some studies did a better job at concealing the research question than the others did, none of the studies took place in a natural review-writing setting.

While this experimental setting was needed to provide causal support for the reviewer effect, the next study will corroborate these findings with correlational field data from a natural review-writing setting.

8 Field Study

The Field Study tested some of the hypotheses using correlational field data and reviews written in a natural review-writing context from the online fashion service company named “Rent The Runway” (RTR). RTR was founded in 2009 and has often been described as the “Netflix of Fashion” (Danziger 2019). Starting at a monthly subscription price of \$89, users can rent clothing items for a limited time and return them when they are no longer needed (Rent The Runway 2020). The RTR review dataset was obtained from the “Repository of Recommender Systems Datasets” (Misra, Wan, and McAuley 2018).

The RTR data set was chosen because of five key aspects of RTR’s review handling that made it suitable for the research question: First, RTR’s products are rented, not bought, which – unlike on, for example, Amazon.com – reduces the producers’ incentive for creating fake positive reviews to increase sales. In RTR’s case, fake positive reviews would only increase the number of times users rent this garment. Moreover, for RTR’s business model, it would not be beneficial if all consumers were to rent the same garment or rent more in general. In RTR’s case, these reviews primarily provide input to the recommendation system, and fake positive reviews would work against this goal.

Second, reviews are only written by paying subscribers who rented the garments – RTR users may not review products they have not experienced.

Third, it is assumed that consumers will not rent garments that they already own, meaning that the reviewers were previously unfamiliar with the product in question.

Fourth, the seller is held stable as the garment is always provided by RTR, reducing possible confounds.

Lastly, RTR intentionally sets the focus of the reviews on the garment's fit, away from non-product related features such as delivery. An example review is presented in Figure 13.



Figure 13. Sample Review on renttherunway.com

The field study's approach was to extract the values for evaluative clarity and connection to the producer (CTP, both direct predictors of retrospective enjoyment in the previous models) from the written RTR reviews. The values were extracted using an automated text analysis that can best be described as a “bottom-up automated text regression” (Humphreys and Wang 2018) or “text relation extraction using a bag-of-words approach and training a supervised machine learning tool” (Berger et al. 2020).

The predicted values for evaluative clarity and CTP were then integrated as independent variables into an OLS regression predicting the 1–5-star rating associated with the reviews. The rating was used as a substitute for the usual dependent variable “retrospective enjoyment.

8.1 Method

The approach can be separated into four steps: First, preparing the data for analysis, second, training and evaluating the machine learning tool on the experimental data collected in other studies of this dissertation, third, predicting the evaluative clarity and CTP scores of the RTR reviews, and fourth, regressing the RTR ratings using the predicted evaluative clarity and CTP scores.

8.1.1 Preparing the Data for Analysis

As a first step, 495 written reviews and their corresponding scores for evaluative clarity and CTP were extracted from Studies 1, 2, 4, and a further study not included in this dissertation. These reviews and their corresponding scores constituted the training data.

The written reviews were prepared for analysis using the “tm” package for R (Feinerer, Hornik, and Meyer 2008): numbers, punctuation, stop words (Porter 2001), and whitespaces were removed. Subsequently, words were reduced to their stems (e.g., words like “shouted” and “shouts” were reduced to their common stem “shout,” Porter 2001). The written reviews were then converted into a document term matrix using term frequency-inverse document frequency (TFIDF) weighting of the terms. TFIDF weighting is a numeral statistic that intends to capture how frequent a word is in the respective review while considering how frequent the word across all reviews (Rajaraman & Ullman, 2011).

8.1.2 Training and Evaluating the Machine Learning Tool on the Experimental Data

After preparing the data, the machine learning models were trained on the document term matrix to predict the evaluative clarity and CTP scores. The author used the “caret” (Kuhn 2008) and “gbm” (Ridgeway 2003) packages to train 4’032 different specifications of generalized boosted regression models (Ridgeway 2003) to predict evaluative clarity and CTP scores, respectively, based on the TFIDF document term matrix of the reviews. The 4’032 variations of the models tested different specifications of interaction depth, number of trees, shrinkage, and the minimum number of observations in a node. The tested specifications are summarized in Table 10. Subsequently, the “caret” function automatically selected the two models to predict evaluative clarity and CTP best. It used 2-fold cross-validation, and root mean square errors (RMSE) as the test method and selection criterion.

Parameter	Tested Specifications
Interaction Depth	1, 2, 3, 4, 5, 10, 15, 20
Number of Trees	10, 20, 30, 40, 50, 100, 150
Shrinkage (Learning Rate)	.001, .01, .025, .05, .1, .125, .15, .2, .5
Minimum Observations in Node	1, 2, 5, 10, 15, 20, 30, 50

Table 10. Tested Specifications of the Tuning Parameters for the Generalized Boosted Regression Models

The selected models performed better than the applicable benchmarks for the training data. In this case, the benchmark was a variable that simply contained the mean of all reviews' evaluative clarity or CTP scores. The results can be seen in Table 11¹.

Metric	Evaluative Clarity	CTP
Model RMSE	.76	1.15
Benchmark RMSE (Mean)	.89	1.53
Model Output Correlation with Target Variable	.64***	.76***

Table 11. Model Performance Versus Benchmark (Field Study)

8.1.3 Predicting the Evaluative Clarity and CTP Scores of the RTR Reviews

After having trained and evaluated the models, the 42,151 RTR reviews were formatted in the same way as the training data (i.e., into an identically structured TFIDF document

¹ The metrics in Table 11 only serve illustrative purposes, as the model selection was completed automatically by the “caret” package and using holdout test data (i.e., cross-validation). The below metrics were not used for model selection as using the same data for model training and testing could lead to overfitting.

term matrix). Subsequently, the two selected machine learning models were used to predict each review's evaluative clarity and CTP scores.

8.1.4 Selecting a Modeling Approach

Theoretically, as the reviews were nested within products (*item_id*) and the person, who posted the review (*user_id*), the data set's structure would warrant a mixed-effects modeling approach. The nested structure of the data set is presented in Table 12. However, it was apparent that there was little actual nesting within the *user_id* variable. 90% of users did not post more than one review. Moreover, the maximum number of reviews posted by one person was 6. Therefore, the nested structure within the *user_id* variable was not investigated any further.

Level 1 n	Level 2	Level 2 n	Average level 1 n (reviews) per level 2 unit
42,151	User (<i>user_id</i>)	37,264	1.31
42,151	Item (<i>item_id</i>)	68	619.87

Table 12. The Nested Structure of the RTR Data Set

In contrast to *user_id*, actual nesting was observable within the *item_id* variable: The 42,151 reviews were about 68 different products, meaning that each product had 620 reviews on average. Two further tests were conducted to determine whether the *item_id* variable was a significant predictor of the reviews' associated star ratings. First, an ANOVA with the rating as a dependent variable and *item_id* as the sole predictor revealed that *item_id* was a significant predictor of the rating of the product ($F(42,083) = 23.61, p < .001$). Second, a hypothetical mixed-effects null model was run with *rating* as the dependent variable and *item_id* as a random effect onto the intercept. However, the random effect of *item_id* onto the intercept only accounted for 3.7% of the intercept's variance, discouraging the mixed-effects modeling approach.

However, the decision was not only whether to pursue a mixed-effects approach or not, but also whether the regression should be run as an ordinal logistic model or an OLS

model. The dependent variable *rating* was a 1-5-star rating, which could warrant an ordinal logistic modeling approach. However, running an OLS regression on 1-5 star ratings is common in research investigating predictors of ratings (Proserpio and Zervas 2017). One could also argue that a 1-5 rating represents an interval scale and can be used as an OLS regression dependent variable.

Therefore, the regression is as an OLS with the 1-5-stars rating as the dependent variable. Additional ordered logistic models and mixed-effect models with *item_id* as a random effect on the intercept are included in Appendix 6.

8.1.5 Constructing the Regression Formula to Test my Hypotheses

The predicted evaluative clarity and CTP scores from the RTR reviews and other relevant variables identified in previous research (Godes and Silva 2012) were used as independent variables. These included the variables length of the review, order, mean rating of the product, and year of the review. Additionally, the “Sentimentr” package (Rinker 2019) was used to calculate the written reviews' sentiment ratings. These sentiment ratings were included to ensure the features extracted from the reviews with the help of the machine learning models were indeed measures of evaluative clarity and CTP and not proxies for the reviews' sentiments. The full list of variables is featured in the equation below.

Lastly, the RTR data set ratings were mostly positive (M = 4.55 out of 5, 92% of reviews featured a positive sentiment). Therefore, it was hypothesized that both evaluative clarity and CTP would positively affect the rating assigned to the item by the consumer. Thus, the following regression for review *i* of product *j* was run:

$$\begin{aligned} Rating_i = & \beta_0 + \beta_1 EvalClar_i + \beta_2 CTP_i + \beta_3 RevLen_i + \beta_4 Order_i + \beta_5 Year_i \\ & + \beta_6 Sentiment_i + \beta_7 (Sentiment_i)^2 + \beta_8 MeanRating_j \\ & + \beta_9 MeanSentiment_j + \varepsilon_i \end{aligned}$$

These variables are summarized in Table 13. Table 14 presents an overview of their means, standard deviations, and correlations.

Variable	Variable Type and Scale/Range	Source	Description	Experimental Equivalent Variable / Reason for Inclusion
Rating	Integer 1 – 5	Included in the RTR data set (Misra, Wan, and McAuley 2018)	The 1 – 5-star rating is associated with the review.	Retrospective Enjoyment, Retrospective Evaluation
Evaluative Clarity	Number 1 – 7	Predicted by the machine learning model	See chapter 2.3.	Evaluative Clarity
Connection to the Producer (1-7)	Number 1 – 7	Predicted by the machine learning model	See chapter 2.4.	CTP
Length of the Review (in Characters)	Integer 1 – ∞	Extracted from the RTR data set using the Stringr package (Wickham 2019)	The length of the review in characters written by the users.	Predictor of ratings identified in previous research (Godes and Silva 2012)
Order	Integer 1 – ∞	Extracted from the RTR data set using the “Lubridate” package (Grolemund and Wickham 2011)	The order of the posted review for the product j. That is, whether it was the first, second, or n th review of the product.	Predictor of ratings identified in previous research (Godes and Silva 2012)
The sentiment of the Review	Number -1.15 – 1.55	Extracted from the RTR data set using the “Sentimentr” package (Rinker 2019)	The sentiment of the review.	Momentary Enjoyment, Predictor of ratings identified in previous research (Godes and Silva 2012)
Mean Rating	Number 1 – 5	Extracted from the RTR data set	The mean rating of the product j.	Predictor of ratings identified in previous research (Godes and Silva 2012)
Mean Sentiment	Number -1.15 – 1.55	Extracted from the RTR data set using the “Sentimentr” package (Rinker 2019)	The mean sentiment of the reviews for the product j.	Predictor of ratings identified in previous research (Godes and Silva 2012)
Year	Integer 2010 - 2018	Extracted from the RTR data set using the “Lubridate” package	The year the rating was posted in.	Predictor of ratings identified in previous research (Godes and Silva 2012)

Table 13. Regression Variables Description and Source (Field Study)

Variable		Mean	SD	1	2	3	4	5	6	7	8	9
1	Rating	4.55 ^a	.71 ^a	1.00								
2	Evaluative Clarity	6.02 ^b	.28 ^b	.02***	1.00							
3	CTP	4.61 ^b	.47 ^b	.05***	.04***	1.00						
4	Review Length (in Characters)	63.19	46.97	-.03***	-.33***	-.01	1.00					
5	Order of the Review	439.52	405.86	.01*	-.01**	-.01	.02***	1.00				
6	Sentiment of the Review	.23 ^c	.19 ^c	.26***	.05***	.10***	-.22***	.00	1.00			
7	Mean Rating (per Product)	4.55 ^a	.14 ^a	.19***	-.02***	-.07***	.06***	.06***	.03***	1.00		
8	Mean Sentiment (per Product)	.23 ^c	.02 ^c	.07***	.05***	.06***	-.06***	-.05***	.08***	.38***	1.00	
9	Year of the Review	2014.38	1.3	.06***	.03***	.00	-.04***	-.08***	.01**	.16***	.13***	1.00

^a values are on a 1 – 5 scale format, ^b values have been predicted by the machine learning models and are on a 7-point scale format, ^c values have been predicted by the Sentimentr (Rinker 2019) package and are on a -1.18 (most negative sentiment) – 1.55 (most positive sentiment) scale; * $p < .05$, ** $p < .01$, *** $p < .001$

Table 14. Means, Standard Deviations and Correlations among Variables (Field Study)

8.2 Results

The rating regression results for the coefficients are presented in Table 15. The model was run using the complete equation and only using evaluative clarity and CTP as independent variables. Both configurations produced the hypothesized, significant results. However, the reporting here will focus on Model 2, the model configuration that includes all covariates.

As hypothesized, the output variables from the generalized boosted regression models – the predicted scores for evaluative clarity and CTP – positively influenced the rating associated with the review. A one-unit increase of evaluative clarity (as the generalized boosted regression models were trained on the scales from the online studies, the predicted values for evaluative clarity and CTP were also limited to a 1-7 scale) increased the rating (on a scale of 1-5) by .047 ($\beta_1 = .047$, $t(42,141) = 3.88$, $p < .001$, see Model 2). A one-unit increase of CTP increased the rating by .044 ($\beta_2 = .044$, $t(42,141) = 6.30$, $p < .001$, see Model 2). These effects were significant predictors of the rating, despite the regression equation controlling for other known predictors.

	Model 1 (no covariates)	Model 2 (full model)
Predictors	Estimates	Estimates
Evaluative Clarity	.042***	.047***
CTP	.071***	.044***
Review Length (in Characters)		0
Order		0
Sentiment		1.650***
Sentiment ²		-1.198***
Mean Rating (per Product)		.492***
Mean Sentiment (per Product)		-1.346***
Year		.017***
Constant		-33.629***
Observations	42,151	42,151
R ²	.003	.123
Adjusted R ²	.002	.123
Degrees of Freedom	42,148	42,148
Residual Std. Error	0.714	0.669
F Statistic	52.83 ***	659.121 ***

* p < .05, ** p < .01, *** p < .001

Table 15. Regression Results for the RTR Reviews

8.3 Discussion

The field study provided correlational support that the reviewer effect demonstrated in the experimental studies also held in a natural setting. Specifically trained machine

learning algorithms demonstrated that evaluative clarity and CTP are present in the language consumers use to write their reviews. It is important to re-iterate that these algorithms were trained on written reviews of videos and songs but still were generalizable to reviews of fashion items. This finding has broad practical implications and may help companies steer their consumers' review-writing in the direction most beneficial for them. One could imagine managers employing software to give consumers real-time input to incentivize consumers to write their reviews in ways that increase evaluative clarity and connection to the provider. Lastly, the Field Study demonstrated that the reviewer effect has positive implications for the producer in a natural review-writing environment.

9 General Discussion

Five studies demonstrate that writing reviews molds consumer's views and thoughts about the producer and its offerings. Writing reviews increased participants' retrospective enjoyment of a broad range of products and experiences.

The studies shed light on the psychological processes that drive these effects. By requiring consumers to articulate their views using the structure, grammar, and vocabulary of written language, consumers gain higher evaluative clarity. In addition, consumers also approached writing reviews more as a social interaction, heightening their interaction focus, and increasing their connection to the producer (CTP).

Moreover, the studies provide support for two findings deduced from global matching models of memory. First, review-writing led to the creation of more memory traces, thereby creating better memories of videos (Study 1), and second, when reviewing a familiar song (Study 2) or brand of jam (Study 3), the reviewer effect subsided as available extant traces eclipsed the memory traces encoded by review-writing.

Moreover, study 3 tested a potential downstream consequence of engendering a more positive retrospective evaluation, possibly through writing a review. Participants' probability of buying a jam significantly increased when retrospective enjoyment increased.

Finally, the studies cast doubt on an alternative explanation. While one might wonder whether the reviewer effect might arise from the use of explaining language (Moore 2012), Study 4 showed that the different modes of written communication to the requester did not vary in their use of explaining language.

9.1 Managerial Implications

The present research has important implications for how managers should solicit consumer feedback, which they see as one of the most important indicators of their performance (Hundredx 2016). In practice, most advice has focused on making consumer feedback easy to analyze and making consumer participation as easy and likely as possible. What followed was a boom in simplistic forms of consumer feedback measurement, such as the four-smiley consoles mentioned in the introduction (Owen

2018) or standardized one-question surveys such as the “Net Promoter Score” (Satmetrix Systems Inc. 2020). However, if these simplistic ways of measuring consumer feedback squander valuable touchpoints with consumers, they might have detrimental effects for otherwise consumer-centric companies. Compared to simple ratings, this research finds that written reviews can improve consumers’ retrospective enjoyment.

This research suggests that managers should carefully consider how to request consumers to provide their feedback. Simplistic methods of collecting consumer feedback may come at the expense of enabling consumers to reflect on their views sufficiently and focus on the social interaction.

Nevertheless, writing reviews will not always increase retrospective enjoyment. Study 2 showed that it would not work for familiar products or services. Building on work by Moore (2012), it is also imaginable that review-writing might even decrease retrospective enjoyment of enjoyable hedonic experiences when the consumer uses specific, explaining language.

Importantly, whether the reviewer effect positively impacts retrospective enjoyment will depend on the combination of product or experience, enjoyment, and familiarity. However, the author cautions managers to carefully balance the quality and the quantity of the consumer feedback they seek to obtain.

9.2 Theoretical Contributions

The present research furthers our understanding of consumer feedback. Consumer feedback has been exhaustively investigated from the perspective of managers and firms (e.g., see Fornell and Wernerfelt 1988; Homburg and Fürst 2005; Voorhees, Brady, and Horowitz 2006). However, the impact on the consumers providing the feedback had yet to be broadly studied. This research’s findings illuminate the psychological processes that take place when consumers provide written reviews. Simply asking consumers to write reviews can mold their retrospective enjoyment, increase evaluative clarity, focus them on the social interaction, and strengthen their connection to the requester.

Second, this research furthers our understanding of how articulating one's views for others in writing impacts internal processes and mental states. Previous research in word of mouth has found explaining language to amplify or dampen one's evaluation (Moore 2012) or talking to connect oneself more to the respective brand than when writing about it (Shen and Sengupta 2018).

Third, this research extended the application of global matching models of memory. By anchoring consumer reviews within the global matching models, the author was able to make, test, and provide support for predictions of actual attitude and behavior changes.

Fourth, this work relates to the literature on mere measurement effects. Previous research has shown that measuring purchase intentions increases the accessibility of product-specific attitudes (Morwitz and Fitzsimons 2004; Morwitz, Johnson, and Schmittlein 1993). However, whereas these prior articles primarily examined the effects of measuring versus not measuring, the current research demonstrates that the mode in which answers are provided to identical questions also influences mere measurement effects.

9.3 Future Research

The current conceptualization of writing reviews versus rating provides several exciting avenues for future exploration. The most worthwhile avenue would be to delve deeper into the notion that evaluating a product or service in writing (vs. rating) initiates psychological processes in consumers' minds, resulting in higher evaluative clarity.

One immediate avenue of future research would be to investigate the reviewer effect and the effect of evaluative clarity on negative consumption experiences. Based on the present theorizing, the author would expect the reviewer effect to subside or to revert. However, additional aspects might influence the reviewer effect that are not accounted for in the present work's model, which applies to positively viewed consumption experiences exclusively.

Another particularly intriguing area of future research would be to test whether heightened evaluative clarity might have more substantial effects on consumers' retrospective enjoyment of products or services that are complex (vs. simple). To specify, this suggests that consumers, who review complex experiences such as a two-

week holiday, might benefit more from the evaluative clarity obtained through writing than increasing evaluative clarity on a simple experience. Building on global matching models of human memory, the author would hypothesize that the increase in evaluative clarity from writing would, therefore, benefit consumers reviewing complex experiences (vs. simple ones) to a greater extent.

As these speculations suggest, there is room for further inquiry into the phenomenon investigated in this research. By taking the first step in that direction, the current research hopes to spark further research into an area of clear relevance to consumer behavior, but which remains understudied.

10 Appendix



You have 30 seconds left to insert your first evaluation:

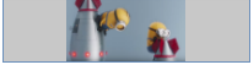
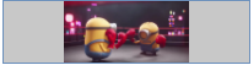
Evaluation 1: How much are you enjoying this movie RIGHT NOW?

Not at all enjoyable ☐ ☐ ☐ ☐ ☐ ☐ **Very enjoyable**

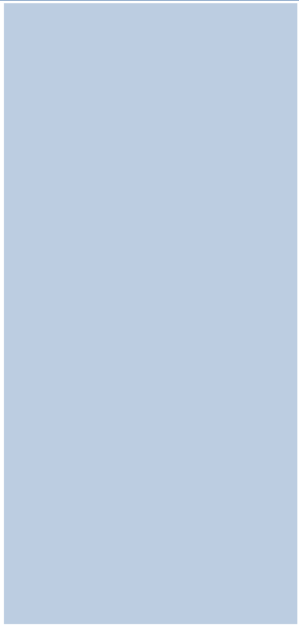
Appendix 1. Momentary Enjoyment Measurement (Study 1)

Show us how well you remember the video.

In order to see how well you recall the video, please sort the scenes from the video in the order in which they appeared in the video.







Appendix 2. Video Recall Measurement (Study 1)

Appendix

Seconds Listened (Needs to be above 231)

On a scale from 1 to 7, how much are you enjoying the song **right now**? Answer to continue listening to the song
Answer within **8** seconds!

Appendix 3. Momentary Enjoyment Measurement (Study 2)

Scoop 1 of 3

Now please open the package, take the first scoop of jam and taste it.



Evaluation 1: How much are you enjoying the jam RIGHT NOW?

Not at all ☐ ☐ ☐ ☐ ☐ ☐ ☐ **Very much**

You will be able to proceed after 20 seconds.

Appendix 4. Momentary Enjoyment Measurement (Study 3)

Confirmation of Payment

Please fill in and sign this form at your desk. After having filled it in, you can stand up, and hand it to the experimenter in exchange for your payment.

Name:



Date:

09.10.2019

How do you wish to be paid? You have two options – You can either receive 8 CHF or choose to receive 7.5 CHF and this 28g miniature jar of Darbo jam of a flavor of your choice (you can exchange the flavors of the jam at the experimenter when handing in this form). Please make your choice.



☐ I wish to receive 8 CHF. *I will return this miniature jar of jam to the experimenter.*

☒ I wish to receive 7.5 CHF and this 28g miniature jar of Darbo jam of a flavor of my choice.

I confirm that I have received the payment of my choice. (Sign now and hand this sheet over to the experimenter in exchange for the payment of your choice).



Signature

Appendix 5. Jam Purchase Form (Study 3)

	Mixed-Effects Model (with <i>item id</i> as a random factor onto the intercept)		Ordinal Logistic Model	
	Model 1 (no covariates)	Model 2 (full model)	Model 1 (no covariates)	Model 2 (full model)
Predictors	Estimates	Estimates	Estimates	Estimates
Evaluative Clarity	.053***	.047***	.223***	.212***
CTP	.093***	.044***	.200***	.160***
Review Length (in Characters)		0		-.001***
Order		0		0
Sentiment		1.650***		4.25***
Sentiment ²		-1.198***		-2.736***
Mean Rating (per Product)		.492***		1.619***
Mean Sentiment (per Product)		-1.346***		-5.508***
Year		.017***		.039***
Constant		-33.630***		
Constant 1 2			-2.786***	90.309***
Constant 2 3			-1.612***	91.513***
Constant 3 4			-.318	92.879***
Constant 4 5			1.671***	95.036***
Observations	42,151	42,151	42,151	42,151
Log Likelihood	-44,913.77	-42,903.95	-37,238.18	-34,982.21
Akaike Inf. Crit.	89,837.54	85,831.89	74,488.36	69,990.43

* $p < .05$, ** $p < .01$, *** $p < .001$

Appendix 6. Alternative Modelling Approaches for the RTR-Regression (Field Study)

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12 Curriculum Vitae

Personal Information

Date of Birth: July 6th, 1988

Place of Birth: Bregenz, Austria

Research Interests

Online Consumer Behavior, Consumer Reviews, Mass-Customization

Education

2018 – 2021 *University of St. Gallen (HSG), St. Gallen, Switzerland*

Doctoral Studies in Management

Supervisor: Prof. Dr. Dr. hc. Torsten Tomczak

Co-Supervisor: Prof. Dr. Johanna Gollnhofer

2006 – 2011 *Vienna University of Economics and Business (WU
Wien), Vienna, Austria*

Undergraduate and Graduate Studies in Business

Administration and International Management (CEMS)

Supervisor: Prof. Dr. Günther Stahl

Work Experience

2017 – 2021 *Institute for Customer Insight, University of St. Gallen
(HSG), St. Gallen, Switzerland*

Research Associate

2016 – 2017 *Coty, Geneva, Switzerland*

Global Senior Marketing Manager

2011 – 2016 *Procter & Gamble, Geneva, Switzerland*

Assistant Brand Manager

2010 *Roland Berger Consultants, Berlin, Germany*

Intern