"That Book Gave Me the Feels"

The Relation Between Tension and Kama Muta When Reading Fiction

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Summary

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Reading fiction can be a profoundly moving experience, and emotions are an important explanatory factor when it comes to fiction's psychological impact on the reader. Emotions arise when events of the story relates to the reader's wishes and concerns (Oatley, 1999), and they have the ability to direct attention, prompting readers to focus on specific issues (Vuilleumier, 2005). What remains less clear, is how the overall reading experience is affected by the dynamic interplay of emotions throughout the narrative. This thesis undertakes one aspect of emotional responses to fiction reading, namely the effect "built-up" tension has on the experience of being moved (feeling kama muta) by a narrative.

The main question raised in this thesis is whether antecedent tension can lead to a stronger kama muta experience. To investigate this topic, I conducted an online survey, consisting of short stories preselected to evoke kama muta, along with questions about felt emotions and probability evaluations of the story's outcome. A tension scale was also developed, consisting of nine items, based on the general model of tension presented by Lehne and Koelsch (2015). Participants were selected through an online snowball sample, as well as through Clickworker.com.

When partaking in the survey, participants were first tasked with reading the first half of a randomly selected short story. They were then asked about felt tension, their desired story outcome and probability estimates of said desire. Participants then proceeded to the second story half, before finally rating their kama muta experience, as well as whether the ending corresponded to their hopes and were emotionally satisfying. They also rated other felt emotions, and whether they were familiar with the story outcome form before.

Results showed that tension strongly predicted kama muta intensity; participants who felt more tension while reading, also felt more kama muta. Moreover, a strong desire for a specific story outcome further predicted tension. This was supported by a mediation analysis of desirability of outcome and kama muta, with tension as the mediating variable. A full mediation

effect emerged, indicating that tension fully accounted for the effect desirability of outcome had on kama muta. Tension also correlated with other emotions, suggesting that felt tension increases emotional intensity, regardless of the quality of the emotional response.

This thesis is part of the larger research work done on kama muta at the University of Oslo, and data was collected independently by the author.

Key words: Kama muta, tension, epistemic probability, emotional probability, Bayesian approach to narrative, fiction reading

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Introduction

He tried to shake me off, but I kept holding on, until he stopped shouting and I felt the fight go out of him. Then I realised he too had his arms around me. And so we stood together like that, at the top of the field, for what seemed like ages, not saying anything, just holding each other, while the wind kept blowing and blowing at us, tugging our clothes, and for a moment, it seemed like we were holding onto each other because that was the only way to stop us being swept away into the night.

- Kazuo Ishiguro, *Never Let Me Go* (2005, p. 269).

I have always taken some pride from the fact that I never cry when I read fiction. But last year, I read Kazuo Ishiguro's *Never Let Me Go* (2005), and when I finished, I clutched the book to my chest and sobbed for about twenty minutes. Cleary, the turmoil of these fictional people must have stirred something deep within me. As evidenced by this anecdote, reading fiction can be a profoundly emotional experience. Furthermore, fiction reading has shown a range of positive, psychological effects. For example, people who read more books early in life, including leisure reading, are more successful students, according to a meta-analysis (Mol & Bus, 2011). Early leisure reading also improved reading comprehension, and verbal- and spelling skills. Moreover, reading fiction enhanced social-cognitive performance (Dodell-Feder & Tamir, 2018), prompted deeper reflection (Koopman, 2015), and even subverted habitual emotional engagement in avoidantly attached individuals (Djikic, Oatley, Zoeterman, & Peterson, 2009). Research has also found evidence for fiction reading increasing empathy and theory of mind, suggesting that people who engage in reading (especially fiction) have a better understanding of other people than those who do not (Bal & Veltkamp, 2013; Kidd & Castano, 2013; Oatley, 2016; Panero et al., 2016).

Emotions are an important explanatory component when it comes to these effects of fiction. Fiction reading is capable of emotionally emerging the reader in to fictional, and even fantastical, worlds (M. Green, Brock, & Kaufman, 2004; Kuijpers, Hakemulder, Tan, & Doicaru, 2014; Oatley, 2016), and emotions have the ability to direct attention, thus prompting readers to focus on specific issues (Vuilleumier, 2005). Moreover, emotions may point to goals within a fictional narrative; they arise when events of the story relates to the reader's wishes and concerns (Oatley, 1999). What remains less clear, is how the overall reading experience is affected by the dynamic interplay of emotions throughout the narrative.

This thesis will concern itself with one aspect of how emotions are elicited during reading; specifically, I will investigate the psychological mechanisms underlying the readers' experience of "being moved" in relation to the narrative's structures for building "tension" in readers. For this purpose, I conducted an online study where participants were tasked with reading a short story and asked to report on different felt emotions during and after the reading. Hopefully, this thesis will provide insights into how the state of tension may elicit stronger emotional responses to a fictional narrative.

Literature
Emotion Approaches to Fiction Reading

Literature elicits emotions on several levels, and different emotions emerge when reading the narrative for the first time compared to a re-read (2010). Furthermore, when studying emotions in reading literature, one needs to keep in mind that the emotions experienced by readers are not only the emotions described for characters within the narrative. There are also aesthetic emotions, defined by Menninghaus et al. (2018) as full-blown, discrete emotions which always include an aesthetic evaluation and/or appreciation. Thus, aesthetic emotions stem from the interpretation of the art piece as a whole: its style, quality, place in tradition, and so on (Mar et al., 2010), and they are tuned to a specific type of aesthetic appeal, associated with subjectively felt pleasure or displeasure. As such, they become a powerful predictor of the enjoyment of the aesthetic piece (Menninghaus et al., 2018). Importantly, aesthetic emotions refer to the appreciation of the elicitor (i.e. the art piece, narrative or otherwise) as well-made and powerfully engaging. Menninghaus et al. (2018) call this the aesthetic emotion meaning.

Narrative emotions, by contrast, arise specifically from entering the fictional world, and can be further divided into five subtypes, which may occur in different circumstances (Mar et al. 2010): (1) *Emotions of sympathy*, where readers sympathize with the character as they recognize patterns or situations which concerns the character, (2) *emotions of identification*, where readers imagines themselves to be in the character's position, (3) *emotions of empathy,* in which emotions arise as a consequence of empathic bonds between readers and characters, (4) *relived emotions*, where the readers experience a resurge of latent, personal emotions from their own past, as they identify similar events within the narrative, and (5) *remembered emotions*, in which readers recognize emotions they observe in the character, and gain deeper insight into the characters' experiences by remembering what those emotions are like. Knut Hamsun's *Hunger*

(1890) can serve as an illustrative example. During the story, the protagonist is at one point saved from starvation as one of his texts is accepted for publication and he earns ten kroners. The experience of relief in the character may not lead to a relived emotion for the reader, as they may not have been in the same starvation situation themself. However, relief may still be elicited in the reader as they recognize a pattern of remembered experiences; they understand the general relief of a bad situation not getting worse, which may prompt further insight into the protagonist's overall desperate circumstances (Mar et al., 2010).

Narrative emotions have been studied on numerous occasions. In one study, researchers gave participants instructions to read short stories while either imagining what it was like to be the character or imagining that they looked on to the action as a spectator (Cupchik, Oatley, & Vorderee, 1998). The identifying readers reported feeling "fresher" emotions (emotions arising from new experiences and realizations based on the narrative), while spectators felt more "remembered" emotions (emotions driven by personal recollection). Another study found that people who read characters describing themselves in their own words connected more with the characters than people who were told by narrators what the characters felt (Kotovych, Dixon, Bortolussi, & Holden, 2011). Such engagement may involve an understanding of the character the same way we form impressions of people through conversations – by inferring what kind of person we are interacting with based on what they say about themself and their life situation (Oatley, 2016). As such, it is easier to form empathic bonds when the character gets to speak for themself, as the reader begins to care for the character when they learn what the character is like.

Kama muta as an emotion evoked by fiction reading. An emotion that has been closely related to empathy, but which has yet to be studied in a fiction reading context, is *kama muta* (Zickfeld, Schubert, Seibt, & Fiske, 2017). In colloquial English terms, the emotion is often labeled are *being moved, touched, having the feels, nostalgia* or feeling *tenderness* (Steinnes, Blomster, Seibt, Zickfeld, & Fiske, 2019; Zickfeld et al., 2018). However, not at all of these lexical terms apply to kama muta experiences all the time, so they do not amount to a definition of the emotion by themselves (Fiske, Seibt, & Schubert, 2017).

Kama muta is a positive emotion in five respects: (1) people report liking it and rate it as positive; (2) people actively seek out kama muta (re)experiences; (3) people want to give kama muta experiences to others; (4) people want to experience kama muta with others; and (5) in many cultures, kama muta is appreciated as a culturally valued emotion (Fiske et al., 2017).

When people have a strong kama muta experience, they tend to feel a series of somatic sensations: a pleasant warmth or swelling in the chest region, moist eyes or "happy" tears, goosebumps, and/or a lump in the throat. They may also place one or both hands to the heart, take a deep breath or pause in breathing, and sometimes an utterance such as *aww* (Fiske et al., 2017; Steinnes et al., 2019). The emotion typically lasts no longer than a minute or two but may occur in short successions during an event, prolonging the overall kama muta experience.

Although kama muta itself is a positive emotion, the whole experience does not necessarily need to be positive, as kama muta may co-occur with other emotions, such as sadness (Fiske et al., 2017; Zickfeld et al., 2017). In religious contexts, it may also co-occur with awe. Some emotions, like anxiety, may precede kama muta – consuming a narrative filled with emotional cues of anxiety may for instance lead readers to a negative affective state before then a kama muta resolution triggers positive, emotional elicitation. Furthermore, kama muta may co-occur with surprise, and people often report emotions such as happiness and joy alongside kama muta (Fiske et al., 2017).

The concept of kama muta is based on the relational model theory (RMT) (Fiske et al., 2017; Schubert, Zickfeld, Seibt, & Fiske, 2016; Steinnes et al., 2019). RMT claims that people use four psychologically inherent models to understand, coordinate, motivate, plan and evaluate their social world (Fiske, 1992). In the model of *authority ranking*, people attend to their position in a linear hierarchy; in *equality matching*, people keep track of imbalances among the group/relation; in *market pricing*, people orient around a ratio value, such as money; in *communal sharing*, people view other member(s) of the relation as equivalent. Kama muta relates to the last of the four models, suggesting that people experience kama muta when they perceive an intensification of a communal sharing relation (Fiske et al., 2017; Schubert et al., 2016; Steinnes et al., 2019; Zickfeld et al., 2017). This intensification could manifest as acts of selfless generosity, reuniting with a loved one, observing or receiving surprising kindness, to name a few. The underlying principle is then a subjective increase of trust or feeling of unity with an interaction partner or relationship (Schubert et al., 2016; Steinnes et al., 2019). Kama muta may further assume different qualities depending on the perspective of the perceiver: first-person kama muta occurs when the person themself feels a sudden new or intensified communal sharing relation; second-person kama muta occurs when the person takes initiative, either creating or intensifying a communal sharing relation with another; and third-person kama muta

occurs when the person perceives a creation or intensification of a communal sharing relation in other people, either real or fictional (Fiske et al., 2017).

Kama muta elicited by fiction reading should be third-person kama muta by default, as the reader themself does not engage in the (fictional) events which evoke the emotion in the first place. Moreover, this type of kama muta may result from a variety of narrative emotions (Mar et al., 2010). Fiske (2019) argues that kama muta is present in many acclaimed literary works, such as *Odyssey* and *Uncle Tom's Cabin*. Storytellers universally induce kama muta in their readers or listeners by reuniting lovers, family members, or comrades. Audiences feel kama muta by seeing, reading about, or hearing the protagonist's struggles against obstacles, or even their sacrifice for the sake of the community, which is common in the heroic prototype story, according to Hogan (2003). Fiske (2019) further states that experiencing the character's pain triggers a kind of protective communal sharing relation between the reader and the character, potentially strengthening the empathic bond, referencing the importance of empathy as a narrative emotion in kama muta elicitation.

Fialho (2019) categorizes six underlying components, which have been detected in adults reporting on reading experiences with a transformative effect on them – on of which is *identification*. For narrative emotions, identification is important. The degree to which the reader imagine themself to be in the character's position, may change the reader's insight of what other people's lives might be like (Fialho, 2019). This may increase the perceived meaningfulness of the text, as well as foster different forms of self-reflection and emotional resonance, i.e. how the reader relates the character's experiences to their own lives. In narrative emotion terms, emotional resonance may arguably result from a mixture of identification and relived emotions – as readers identify with the character's situation, they draw meaning towards their own lived experiences. Identification (and by extension emotional resonance) may help us understand how kama muta may be evoked by narrative consumption (Fiske, 2019). According to Seibt (personal communication, April 10, 2020), some unpublished, early studies on kama muta suggest a relation between identifying with a person and feeling kama muta. The studies included soldier homecoming videos and showed a high correlation between identification with either the child or the soldier and experienced kama muta. The real-person identification evoked by these videos could mirror how readers identify with fictional characters. However, it remains to be assessed whether identification and emotional resonance with real people can be discussed along the same

lines as identification with characters in fiction. Yet, it seems plausible that readers may feel kama muta more powerfully if they also identify with the characters involved in the narrative.

Although some studies have investigated kama muta responses to everyday storytelling, kama muta has yet to be empirically studied in the specific context of reading fiction. In one study (Zickfeld, 2015), participants listened an audio-recording of a woman narrating her life as a coffee shop owner. In the kama muta condition, she recalled how she gave free coffee to the homeless, and how she was surprisingly repaid with kindness. Results indicated that the kama muta condition evoked stronger kama muta feelings and warmth in chest the participants, when compared to amusement and neutral conditions of the same experiment. Studies on being moved by fiction reading have been made, although none of them relate specifically to kama muta. For instance, one study showed that participants who were moved by reading reported significantly greater change in self-reported experience of personality traits (Djikic, Oatley, & Moldoveanu, 2013). However, this result underscores the ambiguity of the label *moved*, as "moved by art" may also allude to an experience of being personally affected or changed by art, rather than a kama muta experience per se. "Moved by art" may indicate an aesthetic emotion appraisal of the piece, while kama muta responses to art may be evoked due to narrative emotional responses. However, it remains unclear whether kama muta can also be an aesthetic emotion in some instances (Menninghaus et al., 2018), and different instances of being "moved by art" may not be as dichotomous as presented here.

The role of sadness in kama muta elicitation. Art consumption is widely believed to be driven by pleasurable expectations and experiences. After all, reading a book should be enjoyable, eliciting positive and pleasing emotions, and if it were not, why would people still choose to read? Thus, seeking negative emotions in art is often seen as a paradox (Menninghaus et al., 2017). However, research suggest that negative emotions have a distinct potential for high intensity of subjective feelings, as well a strong impact on memory and attention (Carretié, Mercado, Tapia, & Hinojosa, 2001; Kaspar, Gameiro, & König, 2015; Norris, 2019). Negative emotions may not be an extraordinary art phenomenon restricted to specific genres (such as fear being fundamental to horror), but rather an universal key component utilized by most, if not all, forms of art (Menninghaus et al., 2017). Representational art, especially artistic forms involving narratives, routinely employ conflicts which both represent and evoke negative emotions (Lehne & Koelsch, 2015; Menninghaus et al., 2017; Ware, Young, Harrison, & Roberts, 2014). Negative

emotions seem not only to be *represented* in the story and *expressed* by the characters, but also, at least to an extent, *felt* by the audience (Menninghaus et al., 2017).

Menninghaus et. al (2017) argues that chills and goosebumps when consuming art are highly likely to be not just a "peak" in emotional experience of an unspecific nature, but rather correlate with psychological states of being moved. They further argue that "being moved" involves a coactivation of both positive and negative emotions. This proposal somewhat contradicts kama muta theory, which postulates that kama muta is a distinctively positive emotion (Fiske et al., 2017), even though it can combine with negative emotions. Empirical findings suggest an interesting correlation between being moved and sadness in some instances, implying that although kama muta itself is a positive emotion, the whole experience does not necessarily need to be positive (Fiske et al., 2017; Zickfeld et al., 2017). In fact, one study suggests that feelings of sadness may be an intensifier of the (positive) emotional state of being moved (Hanich, Wagner, Shah, Jacobsen, & Menninghaus, 2014). One explanation for this may be that sadness provides a background for later intensification of communal sharing relations (Schubert et al., 2016). This observation accommodates the proposition that being moved involves a coactivation of positive and negative emotions to some extent. However, this is not true in all kama muta instances; some moving moments may not involve a concurrent elicitation of sadness, making these experiences noticeably positive.

In a narrative context, however, negative emotions may still play an integral part to the overall kama muta experience. As Fiske (2019) suggests, the reader's exposure to the characters struggles may form a communal, protective bond, which helps inform the relation between negative emotions and positive kama muta responses. Compassion could be an important factor here, and it may provide further explanation for the evident correlation of sadness and kama muta (Fiske, 2019). At the same time, it is worth distinguishing between the negative emotions elicited by narrative conflict, and the positive emotions evoked by a strengthening of communal relations within the story, even if they occur simultaneously.

Cognitive Approaches to Fiction Reading

As discussed in the previous section, emotions clearly influence the reading experience of a fictional text. However, cognitive components are also involved in the reading process, such as word recognition (Bouwhuis & Bouma, 1979), mental imagery (Pressley, 1976), and short-term

memory (Cohen, Netley, & Clarke, 1984). Another way in which cognition affects the reading experience, is through the interpretation of the narrative plot.

A narrative often takes fantastical, unexpected and unrealistic turns, yet readers typically accept these events as the most plausible direction for the narrative. In *The Great Gatsby* (Fitzgerald, 1925), the poor farm boy James "Jimmy" Gatz transforms himself into one of New York's most lavish *nouveau riche* – Jay Gatsby. When José Arcadio dies from a mysterious gunshot wound in *One Hundred Years of Solitude* (Márquez, 1967), his thread of blood runs through the entire village, before entering his family house. And in *A Little Life* (Yanagihara, 2015), four broke college roommates later prosper in exceptional carriers; Malcolm becomes a star architect, Jude a revered litigator, J.B a successful New York artist, and Willem an award-winning actor. In real life, such events would most likely be interpreted as almost out of this world, yet something happens to readers' sense of probability when they engage in narrative fiction. Our overarching impression of the story is impacted by how the narrative manipulates our probability judgements throughout (Kukkonen, 2014).

The Bayesian approach to narrative. One recent explanation for how readers interpret probability regarding narrative deploys a Bayesian model (Kukkonen, 2014, 2020). The Bayesian approach proposes that the human mind copes with the uncertainness of the surrounding reality through a mathematical calculus of inference in uncertainty, i.e. probability theory (Chater, Oaksford, Hahn, & Hahn, 2010). It provides a predictive model that allows the mind to quickly interact with the environment, and whenever a prediction is contradicted, the new information is used to update the Bayesian model. For instance, when waiting at a bus stop, we might check the real-time display sign to estimate when the bus is likely to arrive. If the display indicates five minutes, we will likely anticipate the arrival of the bus in about that time – provided we consider the real-time indication as trustworthy. This way, our prediction about the bus arrival is updated with the available real-time information. Now, say it is rush hour, and the added traffic suddenly raises the estimated time from five to seven minutes. We may then further update our predictive model, given this new information; we may even predict that the bus will not arrive until ten minutes later, due to the increased traffic. Consequently, our predictive model is updated not only with the available real-time display information, but also with our information about the current traffic. This process is known as Bayesian inference (Chater et al., 2010; Kukkonen, 2014, 2020).

According to Kukkonen (2014), also readers engaging in fiction draw such Bayesian inferences. This is conceptualized in terms of a feedback loop between readers' probabilistic model and the fictional world they experience as they read a story. As readers progress through a narrative, they revise their probabilistic beliefs about the fictional world and usually develop a grasp of the plausible outcomes that gets progressively better through a feedback loop between prior hypotheses about the narrative's outcome and new observations presented by the narrative's progression. In this way, readers can make sense of the narrative through the way the plot is structured, referred to as probability design (Kukkonen, 2014, 2020).

In the Bayesian approach, plot is understood as the pacing of observations about the fictional world. The arrangement and the order in which information is presented gives rise to three cognitive effects: curiosity, suspense, and surprise. Kukkonen (2014) presents these effects through a prototypical narrative example (drawing on Brewer and Lichtenberg (1981)):

(a) Butler puts poison in the wine
(b) Butler carries wine to Lord Higginbotham
(c) Lord Higginbotham drinks the wine
(d) Lord Higginbotham dies

The ordering of these plot points establishes which cognitive effect is provoked. If only the final point (d) is presented, *surprise* is triggered in the reader – as no previous information suggested that Lord Higginbotham was going to die, the turn of events is likely unexpected. If the reader is presented with the points (b) to (d), curiosity is evoked, as readers tries to backtrack their mental operation to figure out what happened before the events which they are aware of (being point (a)). And if (a) to (c) is presented, readers are left with suspense – a forward-thinking process in which they are left with a desire to figure out what happens *after* the events they are presented with (being point (d)) (Kukkonen, 2014).

Our sense of possibilities can be understood as a *Bayesian net*, that is, a set of links or possibilities which connects the events of the narratives, where some possible courses of events are weighed as more probable than others (Kukkonen, 2014). While curiosity may arise as different possible outcomes are weighed against one another, suspense may be understood as a specific outcome becoming more and more probable. This may be due to an active exclusion of

other possibilities or the presence of a deadline (Kukkonen, 2014). These three effects are not necessarily distinct but can be seen as part of a continuous probability design.

In Bayesian approach to narrative, the emotional implications of probability are critical, as they reflect the stakes that specific characters (and consequently the reader) have in a specific outcome (Kukkonen, 2014). During their predictive processes, readers may place what we could call their "emotionally investment" in a particular plot prediction (Kukkonen, 2020). This investment is important to readers' evaluation of the likely plot development (Kukkonen, 2014, 2020). For predictive processes, the rivalry between epistemic probabilities (what the readers interpret as likely to happen) and emotional probabilities (what the readers themselves want to happen) informs the probability design (Kukkonen, 2020). The epistemic and the emotional assessment are closely related: possibilities are often evaluated against epistemic probabilities of the fictional world, while at the same time being weighed against the emotional probabilities. A narrative's probability design may thus cue readers to hope for a different outcome than the one currently established as most likely, exacerbating this rivalry of the epistemic and the emotional. Readers may look for new observations which prompt revisions to their established, probabilistic grasp of the fictional world – observations which may ultimately lead to closure for the readers desired outcome (Kukkonen, 2014).

The concept of precision is another important component of probability design. Precision of prior distribution refers to our confidence in our existing predictions, while precision of the likelihood distribution refers to the ambiguity of new observations (Edwards, Adams, Brown, Pareés, & Friston, 2012; Palmer, Lawson, & Hohwy, 2017). Together, these two parameters give an indication of how reliable or informative new observations are regarding the true state of the world, and the weighed term of said parameters is known as *the learning rate* (Palmer et al., 2017). The strength of these parameters offers an explanation as to how likely readers are to interpret new plot evidence as reliable. If the reader has a strong precision of prior distribution and a weak precision of the likelihood distribution, they can then be expected to hold on to their existing beliefs about the story outcome, even when the plot presents them with evidence that said outcome is highly improbable. Consequently, the learning rate slows down, as the reader is less liable to update their predictions when faced with new observations. The precision weighing is further informed by precision expectations, i.e. expectations about where we are likely to find reliable precisions (Edwards et al., 2012). In the case of fiction reading, genre convention may be

one example of precision expectations. For instance, in romance fiction, readers are likely to hold on to the belief that the couple will end up together in the end, as this is an expected genre convention, even when faced with strong, contradictory evidence. This indicates strong precision of prior distribution, and it may be further informed by emotional probabilities, namely readers *want* the couple to reunite. Thus, they stick to that belief. In contrast, readers of detective stories are likely to continuously update their probabilistic model as a mean to solve the *whodunnit*-puzzle. As such, they may find new plot evidence reliable, strengthening their precision of the likelihood distribution, and updating their epistemic probability model of the narrative mystery throughout the reading (Kukkonen, 2020).

Relation Between Cognition and Emotion in Fiction Reading

The relation between cognition and emotion has long been of scientific interest. One of the first renowned theories on the relation between cognition and emotion is Schachter-Singer Two-Factor Theory of Emotion (1962). They argued that individuals who experienced physiological arousal with no clear explanation would assign an emotional label to their arousal based on available cognition. Moreover, an individual would react emotionally to their circumstances only to the extent that they experienced a physiological arousal (Schachter & Singer, 1962). Since then, the relation between cognition and emotion has been extensively researched on a variety of topics, such as emotion regulation (Brockman, Ciarrochi, Parker, & Kashdan, 2017; Richards & Gross, 2000), learning (Cho & Heron, 2015; Tyng, Amin, Saad, & Malik, 2017), and memory (Bäuml, Pastötter, & Hanslmayr, 2010; Carstensen & Mikels, 2005). As research on this topic suggests, emotional and cognitive processes do not necessarily occur in separated instances; they may also intertwine and feed into one another. When considering fiction reading, the Bayesian approach to narrative may shed some light on the gap between cognitive interpretation of a story and its emotional implications in the reader, since Bayesian inferences are influenced both by our epistemic and emotional grasp of the story development (Kukkonen, 2020). Another psychological concept which may inform the emotion-cognition relation, is *tension* – an affective state said to directly arise from cognitive evaluations of our circumstances, including fiction reading (Lehne & Koelsch, 2015).

The general model of tension. Although often employed in everyday language, tension as a psychological concept remains somewhat unexplored and undefined. One general model of tension, presented by Lehne and Koelsch (2015) as an overall explanation of the phenomenon,

defines the concept as such: an affective state which (a) is associated with conflict, dissonance, instability, or uncertainty, (b) creates a yearning for resolution, (c) builds on future-directed processes of expectations, anticipation and prediction, and (d) concerns events of potential emotional significance.

Creative writes often refers to tension as a tool to captivate the reader (Dean, 2019; H. R. Green, 2017; Hillerich, 2016). Tension experiences usually stem from conflict, dissonance, instability or uncertainty, which causes a yearning for more stable or secure states (Lehne & Koelsch, 2015). Narrative conflict is a typical tool used by writers to ensure engagement in the reader (Menninghaus et al., 2017; Ware et al., 2014), in which tension may also be a response. Moreover, narrative conflict causes the audience to ask questions and form expectations about the outcome, which propels them through the story (Ware et al., 2014). Similar to the theory of homeostasis (Cummins, 2016), people may feel an urge resolve the experienced tension as a mean to maintain a stable, psychological state (Lehne & Koelsch, 2015). This also plays into the theory of cognitive dissonance, which claims that people aim to achieve "constant" cognitive states (Festinger, 1957). The sub-component of *conflict* thus feeds into the sub-component of *yearning for resolution*. Consequently, tension elicitation highlights how a textural feature (narrative conflict) may lead to emotional responses in the reader (yearning for resolution).

Lehne and Koelsch (2015) points out that tension may not always be associated with negative emotions, such as anxiety, and may instead promise excitement and intense emotional experiences. This is especially true in entertainment media, including literature, as tension elicited by a narrative or music does not suggest the same negative real-life consequences as tension otherwise would. Emotional experiences after tension may also be preferable to the ones before tension was provoked, which justify some self-imposed tension moments. Tension is also associated with uncertainty; more precisely, obvious instances of uncertainty triggers tension if the anticipated events contain high emotional significance (Lehne & Koelsch, 2015). As such, a high amount of uncertainty in the narrative outcome may elicit tension if the reader is sufficiently invested in the emotional stakes of the story. This notion aligns with the Bayesian approach to narrative, which postulates that epistemic probability (what readers find likely to happen) are constantly weighed against emotional probability (what readers *wants* to happen) (Kukkonen, 2020), and tension might arise from the rivalry between the two probability terms. Readers continuously look for new observations which prompt revisions to their established,

probabilistic grasp of the fictional world (Kukkonen, 2014), and the Bayesian inference may be partially motivated by readers' felt tension and effort to resolve this psychological state.

Another component of tension is its *future-directed processes of anticipation, expectation and prediction[1]*. Lehne and Koelsh (2015) argue that as events unfold, either in real-life or throughout a narrative, we constantly calculate outcomes based on a background of predictions, which is continuously updated during the temporal evolution of the events. This is further supported by the Bayesian approach's presumption that the human mind orientate in the world through a probability calculus, evaluated against a myriad of possibilities within the Bayesian net (Kukkonen, 2014). Anticipated events of high emotional significance may elicit tension, and based on the emotional valence of the outcome, tension may be interpreted as either hope or anxiety (Lehne & Koelsch, 2015). Anticipated events of positive valence may elicit emotions of hope, while anticipated events of negative valence may elicit emotions of anxiety. Someone experiencing tension not only expects things to happen, but also typically desires one or a few specific outcomes to become true, or not true. In fact, the amount of tension experienced appears to be directly related to the amount of desirability of a specific outcome (Lehne & Koelsch, 2015). This highlights the final sub-component of tension, namely *emotional significance*, and it further alludes to the role of emotional probability during tension elicitation (Kukkonen, 2020). As an extension of this, tension also stems from a lack of control – if an individual desire a specific outcome, but yield full ability to ensure said outcome, tension elicitation would be decimated. This seems plausible in a narrative sense; readers do not control the unfolding plot of a narrative, they only control whether they choose to read on. As such, readers may feel compelled to continue reading if they experience sufficient tension, as they aspire to reduce the tension state, which can only be achieved through a sufficient narrative resolution. If the reading experience entails a great degree of tension and a correspondingly fulfilling ending, they would likely feel emotionally satisfied by the outcome of the story.

Further considering the Bayesian approach to narrative, the effectiveness of each tension sub-component may be evaluated against the readers' precision (Edwards et al., 2012; Palmer et al., 2017). If a strong precision of prior distribution exists, readers may experience tension due the anticipation of their believed story outcome – a plot prediction they are likely to consistently

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[1] [1] It is worth pointing out that Lehne and Koelsch do not explicitly refer to predictions in terms of Bayesian probability design; however, they do argue that the general model of tension aligns with the Bayesian approach.

maintain, even when faced with contrary evidence. On the other hand, if the readers have a strong precision of the likelihood distribution, tension may arise from uncertainty, as readers feel unsure about their prior outcome hypotheses, and will easily update their probability model in light of new observations. In conclusion, I argue that even if the four sub-components of tension may generally ring true, not all sub-components may elicit tension all the time.

As these key components suggest, tension is dependent upon a time-varying aspect. Tension takes time to "build up," and as such reflects a time-dependent facet of emotional appraisal. However, the quality of tension as an affective state is somewhat ambiguous considering narrative and aesthetic emotions (Mar et al., 2010). In cases where an empathic bond with the character is established, tension could arise due to a yearning for the character's conflicts to be resolved. Sympathy with a character caught in an extreme situation may also elicit tension, or it could happen as the reader recognizes similar predicaments as the protagonist within their own lives, causing tension due to identification or relived emotions. Tension may principally also arise from an aesthetic appreciation of the art piece, which, among other things, seems to be the case in music (Lehne & Koelsch, 2015). More research on this topic could further inform the quality of tension in relation to narrative consumption. Interestingly, as tension is closely related to cognitive predictive abilities, it may point to the bridge between the "cold" cognition and the "hot" emotions (Lehne & Koelsch, 2015). Tension may, as such, provide a "missing link" between cognition and emotions.

Although tension is of critical importance to my problem formulation, the term remains ambiguous. One primary concern is that of definition. In their paper, Lehne and Koelsch (2015) use the terms *tension* and *suspense* somewhat interchangeably. They do claim that the two concepts are distinct, yet related, but without providing any further explanation as to how and why. Other researchers have argued that suspense arises from a lack of information on whether, where, when, how, or why an event has occurred or will occur (Delatorre, León, Salguero, Palomo-Duarte, & Gervás, 2018; Knight, 1921), underscoring its cognitive quality. Seemingly, the two concepts – tension and suspense – are distinct, yet with some shared characteristics. Both seem to arise from anticipation of future events, and both seem to compel the reader (or viewer) to continuously consume the narrative until the stakes are resolved. Moreover, Kukkonen (2014) also refers to the term *suspense*, yet her concept differs from Lehne and Koelsch's use of *tension*. Kukkonen describes suspense primarily in terms of epistemic predictions, i.e. an appraisal

stemming from readers probabilistic evaluation as specific possibilities becomes more and more probable. Lehne and Koelsch (2015) defines tension as an affective state aroused by a desire for a specific outcome (implying emotional probability), and conflict concerning whether said desire eventually will come true. To conclude, suspense and tension may be distinct in that they derive from, and are evoked by, epistemic and emotional probabilities respectively. One could further argue that suspense and tension are cognitive and affective sides of the same underlying phenomenon, namely an appraisal based of outcome predictions, yet more empirical evidence is needed on this proposition. It is not given that suspense exclusively refers to cognition, and tension exclusively to emotions, in current theories.

It is worth pointing out that other researchers have provided alternative definitions of tension: according to Wolff, Stiglmayr, Bretz, Lammers and Auckenthaler (2007) tension is synonymous with aversive emotional arousal, while Barlow and Hall (2007) relates tension to a sense of unease. However, in linguistic terms, tension seems to be utilized in a variety of not necessarily unified contexts, such as emotional experiences of borderline patients (Wolff et al., 2007) and upsetting events between students and instructors (Barlow & Hall, 2077). In terms of narrative interpretation and emotional appraisal, I choose to define tension as an affective state aroused by conflict/uncertainty, anticipation of future events, need for resolution, and concerns of emotional significance, presented as such by Lehne and Koelsch (2015).

The paradoxical role of uncertainty in tension. An interesting enigma, possibly related to tension, is the paradox of suspense. The paradox postulates that suspense elicitation is resistant to reduction upon repeated exposure (Delatorre et al., 2018; Lehne & Koelsch, 2015). The concept is also known as *anomalous suspense* (Coëgnarts & Kiss, 2017; Geal, 2017; Kukkonen, 2020), and it has long baffled researchers when considering uncertainty's role in suspense elicitation. Empirical evidence indeed suggests that suspense may be evoked even when the outcome of a narrative is known to the audience (Coëgnarts & Kiss, 2017; Gerrig, 1989). Some researchers propose that suspense raised on subsequent readings (or viewings) of a narrative, is built upon sympathy with the characters, who themselves are uncertain of the outcome of the narrative (Skulsky, 1980). Others have stated that continuously submerging oneself in the same tension-filled narrative involves a game of make-believe, in which a kind of feigned uncertainty, rather than actual uncertainty, raises the audience's suspense (Walton, 1978). I will argue that another explanation may reside in relived narrative emotions; as the audience remembers the

outcome upon repeated narrative exposure, they may also recall how they felt during their initial encounter with the story. As such, they may anticipate the same emotional responses at the same plot points, thus queueing them to relive the same emotions. Intuitively, familiarity with the outcome should greatly strengthen the precision of prior distribution, as the audience is now certain about the unfolding events, inflating their anticipation even further.

How the paradox of suspense relates to tension remains somewhat uncertain, considering the blurred distinction between tension and suspense in previous literature. For this paper, tension is the main issue, and one of the questions I intend to investigate is whether tension, similar to suspense, remains the same even if one knows the outcome. However, as uncertainty is theorized to be a key component of felt tension, I still predict that uncertainty will have an impact.

Theoretical Predictions of Current Study

The current thesis aims to investigate how tension is elicited by fiction reading, and how said tension may affect kama muta experiences at the emotional climax of the story. As mentioned earlier, kama muta has yet to be studied in the context of fiction reading. As such, my thesis will also be an empirical investigation of whether literature can elicit said emotion. Moreover, this thesis will be the first investigation on the relation between tension, as presented by Lehne and Koelsch (2015), and kama muta.

Tension is believed to impact the emotional texture of the successive emotions, and the emotional experience after a "release" of tension is theorized to be preferable to the emotional state prior to the tension elicitation (Lehne & Koelsch, 2015). As such, I predict that people who experience higher amounts of tension will also experience higher amounts of kama muta at the end of the story.

Predictive abilities should further influence the tension elicitation. The Bayesian approach to narrative (Kukkonen, 2014, 2020) claims that readers probability grasp of the narrative is continuously informed by the rivalry between epistemic and emotional probability. I propose that tension will arise due to this rivalry of probabilities. Tension seems to be associated with anticipation, conflict and uncertainty, and emotional investment of certain outcomes (Lehne & Koelsch, 2015). If readers interpret the plot as leaning towards a plausible, but undesired ending, they should perceive a narrative conflict. They should thus feel compelled to keep reading (Ware et al., 2014), to investigate whether the story might still lead to the ending they –

although unlikely – desire, prompting uncertainty towards the story outcome. Since uncertainty and conflict are considered a sub-component of tension, readers predictive capabilities should directly influence tension, which should further intensify the kama muta experience.

Methodology

The core aim of my thesis is to explore whether antecedent tension evoked by a short story has an effect on the intensity of a kama muta experience. Overall, I have three goals: (1) Construct a psychometrically satisfying scale of tension, based on Lehne and Koelsch' general of model of tension (2015), as to my better knowledge, no such scale currently exists. (2) Test the preregistered hypotheses about the relations between emotional and epistemic probabilities, tension and kama muta. And (3) explore the relations among these variables, various emotional responses to the short stories, familiarity with the stories' outcome, and resonance. To investigate this topic, I had participants read a short story preselected to evoke kama muta and asked them about their reading experience midway through the reading, as well as after.

My thesis is an empirical study of a theoretical research problem. My first hypothesis (H1) was based on Lehne and Koelsch' general model of tension (2015), which they describe as an affective state built upon four contributing elements. These are (1) conflict or uncertainty within the narrative, (2) anticipation of (several) possible outcomes, (3) emotional significance of the stakes, and (4) a yearning for a resolution. H1 was further derived from Kukkonen's (2014, 2020) Bayesian approach to narrative, in which she suggests that readers' constantly weigh what they *want* to happen (emotional probabilities) against what they find *likely* to happen (epistemic probability) when they infer their probabilistic grasp of the unfolding plot. I argue that the rivalry between the epistemic and the emotional directly relates to tension. Specifically, if a participant has a strong desire for a specific outcome of high emotional significance, yet finds this outcome improbable, conflict is expected to be high, which should increase felt tension. Moreover, an epistemic and emotional probability discrepancy should further instill tension as readers look for new observations which confirms their desired – although unlikely – ending. This need to confirm an unlikely ending should lead to perceived uncertainty about the outcome, which should further increase tension. The epistemic probability was indicated by participants' probability rating, while emotional probability was indicated by their score on desirability of outcome. These variables, alongside tension, were measured midway through the reading.

My second hypothesis (H2) was based on the characterization of kama muta as a positive emotion (Fiske, 2019; Fiske et al., 2017; Schubert et al., 2016; Zickfeld et al., 2018). High amounts of antecedent tension should increase the strength of felt kama muta, since emotional states after a tension elicitation are suggested to be preferable to emotional states before elicited tension (Lehne & Koelsch, 2015). However, I expected a "build-up" of tension to lead to a strong experience of kama muta only when the ending is in line with what the reader had hoped for – measured as hoped-for ending. This was due to tension also deriving from perceived emotional stakes and a yearning for resolution; high scores on hoped-for ending should indicate that a reader's desire for a specific emotional resolution is met. If the ending, by contrast, fails the reader's hopes, then other emotions, such as disappointment, may prevail instead of kama muta.

In sum, I predicted the following two path models:

H1: Lower scores on probability rating (X1) predicts higher scores on tension (Y), and higher scores of desirability of outcome (X2) predicts higher scores on tension (Y). I further predict that the main variance on tension will stem from desirability of outcome. Moreover, I predict an interaction effect between probability rating and desirability of outcome's effect on tension, where the effect of desirability of outcome on tension is moderated by the levels of probability rating.

H2: Tension's (X) effect on kama muta (Y) is moderated by levels of hoped-for ending (M), i.e. higher scores on tension will only predict high scores on kama muta if the participant scored high on hoped-for ending.

In addition to the two main hypotheses, I intended to further explore several additional variables to investigate the topic of emotional responses to fiction reading. I hypothesized that the emotional satisfaction of a short story – how pleased readers are with the overall story conclusion – would further affect the strength of their felt emotion. I thus proposed the following, additional hypotheses: (H3) Emotional satisfaction positively correlates with other emotions (anger, sadness, happiness, surprise, fear, disgust).[2] (H4) Emotional satisfaction positively correlates with kama muta. (H5) Emotional satisfaction negatively correlates with boredom.

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[2] The selection of the other emotion labels was based on Ekman's (1992) theory of basic emotions.

The ending corresponding to the reader's hopes should further instill emotional satisfaction of the overall reading experience. I thus proposed that (H6) emotional satisfaction positively correlates with hoped-for ending. Moreover, as uncertainty is theorized to be a key element of tension elicitation, I predicted that (H7) being familiar with the outcome of the story negatively correlates with tension. And finally, as previous, unpublished studies suggest a relation between kama muta and identification with the character (B. Seibt, personal communication, April 10, 2020), I expected that (H8) resonating with the character positively correlates with kama muta.

Survey Construction and Procedure

The study was conducted through an online survey, consisting of a selection of short stories and sets of questionnaires asking participants about their desired outcome of the relevant stories, their probability rating of said desire, their tension experience, their kama muta levels, actual interpretation of the ending, emotional satisfaction and resolved hopes, resonance with the story, other emotions felt while reading, and familiarity with the outcome. An online survey was considered appropriate for the scope of this thesis, as it allows for easy data recruitment, and does not require extensive time and resources to conduct (Wright, 2005).

A total of five short stories were selected for the study. The short stories were sampled from an online literature search, based on key words such as *moving short story, heartwarming short story, touching short story, feel-good short story,* and *sad short story.* The following criteria were set for the selection: (1) The story had to meet certain literary qualities, meaning they had to be written by an established author; (2) the story needed clear conflicts, either between characters or between one characters and society at large; (3) the story had to have a recognizable kama muta resolution, and (4) the story should not take more than 25 minutes to read at a comfortable reading pace.

Before continuing, it is worth pointing out one disclaimer for the third criterion: Although the story needed to end with a basic sense of kama muta, this did not require explicit positive valence. Although kama muta is seen as a positive emotion (Fiske et al., 2017; Steinnes et al., 2019), it has been shown to co-occur with other emotions, such as sadness (Zickfeld et al., 2017). Moreover, Mennighaus (2017) argues that being moved by a narrative occurs as a co-activation of both positive and negative emotions, and although this proposition deviates from kama muta theory, it does suggest that readers may feel moved even while feeling simultaneous negative

emotions. Consequently, a short story could theoretically be moving, and yet still end on mixed emotional valence. For the purposes of this study, the kama muta resolution was identified not by positive, emotional valence, but through an identifiable communal sharing intensification, be it between two people, one person and an imagined person, or one person and a nostalgic moment, such as a happy memory with another person. The emotional appraisals felt by the author of this thesis while reading the short stories, were also taken into consideration.

Before the selection, four to six short stories were determined as advantageous for the study. Simply including one moving story could possibly make the data too story-specific, putting into doubt whether the study yields generalizable assumptions about emotions and fiction reading. A total of 70 short stories were reviewed, from which five were eventually selected according to the criteria outlined above: *The Little Match Girl,* by Hans Christian Andersen (1845), *An Angel in Disguise,* by T. S. Arthur (1867), *Alyosha the Pot,* by Leo Tolstoy (1911), *Paper Menagerie,* by Ken Liu (2011), and *This is What it Means to Say Phoenix, Arizona,* by Sherman Alexie (1993).

Survey procedure. In the survey, participants were randomly selected into one of five conditions. Each condition included one of the five stories, so that each participant only read one story. Participants were first asked to inform consent, which included the statement that the survey is anonymous, making it impossible for participants to withdraw consent once the data was sent (see Appendix B for full version). Participants were also reminded of this at the end of the survey. They were then presented with the first half of the selected short story.

After the initial reading, participants were given an attention question, based on the previous text. The questions were designed to be easily answered if participants read the story, but hard to answer if they skipped the reading. Participants then indicated their ending desirability and probability rating before answering a 9-item tension scale. The items were constructed from the four aspects of tension in Lehne and Koelsch' model (2015) (more on this in the section on variable measurement – see page 27).

Participants were then asked to proceed to the reading of the second story half. After completing the story, they were presented with the second attention question, before answering questions about their interpretation of the ending valence, and whether the ending was as they hoped for and emotionally satisfying. Participants then filled out the KAMMUS-S scale for kama

muta measures, as well as the Resonance scale, and they also rated other emotions. Finally, they were asked whether they were familiar with the outcome of the story from before.

Considerations during survey construction. As mentioned in the section above, the readings were interrupted in the middle with a question block. The split was due to tension being rooted in readers' predictive and anticipating abilities, thus measurements *before* the story resolution was considered necessary. By asking participants about their desired ending before they knew the actual outcome, I prevented that answers would be colored by hindsight. With such a split, it would be possible to determine the relation between the desire (emotional probability) and probability interpretations (epistemic probability) of an outcome, and emotions elicited by the ending.

I aimed to keep the questions at the split as brief as possible. This way, participants did not have to spend more than a minute answering questions before continuing the read. Moreover, the split was inserted at a natural breaking point in the stories, where it would be appropriate for the reader to pause. Consequently, the split took place approximately halfway through the narrative in each of the five stories. Before the split, the basic conflict of the characters involved had to be presented, and enough plot information had to be given so that readers could predict the narrative outcome. This way, it is fair to assume, most of the components needed to experience tension were present. Some reliable tension measures may thus be achieved, although it may not represent the overall tension experience of the narrative.

Before they were implemented into the survey, each individual story split was discussed with Karin Kukkonen, co-supervisor for this project and professor at the Department of Literature, Area-Studies and European Languages at the University of Oslo. A specific account for each split will be clarified in the section on the short stories (see page 28-30).

Variable measurements. The key determining variables of this study were tension and kama muta. Other variables, which enabled me to further explore the goals of my thesis, include desirability of outcome, probability rating, hoped-for ending, emotional significance, other emotions (anger, sadness, happiness, fear, surprise and disgust), boredom, resonance and familiarity with outcome. In this section, I will briefly present how each variable was measured in the survey before (see Appendix C for an extended overview of variable measures included in the survey).

Tenison. As mentioned previously, one goal of my thesis was to construct a psychometrically satisfying scale of tension. Eight items were developed to reflect the four sub-aspects of tension – two items per sub-aspect – while the ninth question was a general tension measure. The items were developed based on the theoretical proposal of what each sub-aspect should entail of emotional experience.

The items concerning the aspect of conflict and uncertainty were *I felt unease or on edge* and *I felt uncertain about the outcome of the story.* Items concerning yearning for a resolution were *I longed to find out how the story ends* and *I hoped the problems of the story would be resolved by the end.* For anticipation, the items were *I felt anxious about where the story was going* and *I felt hopeful for where the story was going.* The emotional significance, items were *I cared about the story and/or the characters* and *I felt excited about reading more.* Finally, the general tension question was as following: *When reading this story, I feel a lot of tension.* All items were rated on a Likert scale of 1 to 5.

To investigate whether this 9-item tension scale was psychometrically satisfying, a factor- and reliability analysis was conducted after the initial scale construction and data collection. See result section for the outcome of the analyses (page 31-32), and discussion section for further elaboration on the topic (page 39-40). A mean score of the tension scale was calculated using SPSS, for further analysis of the thesis' hypotheses.

Kama muta. Kama muta was measured using the KAMMUS-S scale, which is an abbreviated version of the Kama Muta Multiplex Scale (KAMMUS-Two) (Zickfeld et al., 2018). KAMMUS-S consists of 12 items across five sections – sensations, appraisals, motivations, valence, and labels – and a mean score was computed for further analysis. All items were rated on a Likert scale of 1 to 5.

Desirability of outcome. Participants indicated their desirability of outcome through a combination of three different items. Firstly, they rated how much they desired a happy ending on a Likert scale from 1 to 5. They also rated how much they desired a sad ending on a similar scale. Then, they answered which emotional valence they preferred; happy, sad or mixed. If they answered happy, their desirability of outcome was indicated by their rating on the happy ending scale. If they answered sad, their desirability of outcome was correspondingly indicated by their sad ending rating. If they preferred a mixed ending, however, their desirability of outcome was based on the mean score of both the happy and sad ending scale. This way, participants were

allowed to indicate the strength of their desired ending, while also accounting for the emotional valence of said desire. In Bayesian terms, the desirability of outcome score indicated participants' emotional probability, i.e. what they *want* the outcome of the story to be (Kukkonen, 2020).

Probability rating. Probability rating was measured through a simple item presented immediately after the desirability of outcome items, namely: *How likely do you think it is that they story will end the way you are yearning for?* In Bayesian terms, this indicated their epistemic probability (Kukkonen, 2020). Participants rated this from 1 to 5.

Hoped-for ending and emotional satisfaction. Both variables were each measured by a single item, after participants read the second half of the short story. For hoped-for ending, the item was *This was the ending I yearned for*, and for emotional satisfaction, the item was *I felt emotionally satisfied by the ending*. Variables were rated on a Likert scale of 1 to 5.

Other emotions and boredom. The other emotion labels, in addition to boredom, were each rated on a single item, which all occurred in the same question block. Variables were rated on a Likert scale of 1 to 5.

Resonance. Resonance is a 7-item section of the Transformative Reading Scale (Fialho, Hakemulder, & Hoeken, in prepreation). Resonance indicates how much a reader identified with the character(s) of the story, as well as how much they related the scenarios of the unfolding plot to their own lived experiences. The scale was rated on a Likert scale from 1 to 5. A mean score was calculated before continued analysis. In terms of narrative emotions (Mar et al., 2010), resonance may imply both felt identification and relived emotions.

Text Material. *The Little Match Girl* by Hans Christian Andersen (1845) is a short story following an unnamed, poor girl on New Year's Eve, in an unspecified European country during the 19th century. The girl is selling matches, yet no one has bought any that night, and after her shoes are stolen, she sits down next to a brick wall and begins lighting matches to keep herself warm. Through the light of the matches, she gets different visions, which culminate in her believing she is seeing her late grandmother, who has come to take her away. The little girl dies by the brick wall, yet with a smile on her face, due to the final, imagined visit from her grandmother. The story is by far the shortest of the five, consisting of 940 words, and with the most distinctly sad ending. It was split at the 470-word mark – after the little girl has struck the first match against the wall.

An Angel in Disguise by T. S. Arthur (1867) follows the wheelwright Joe Thompson, who decides to take in a bedridden girl named Maggie, after her mother dies. The first half of the story describes the circumstances of the little girl after the death of her mother, which culminates in Thompson bringing her home. The second half of the story follows the doubts of Thompson's wife on whether to let the child stay with them, which they eventually choose to do. This story contains the most traditional kama muta resolution of the five, with a distinctly happy ending through an intensification of communal sharing relations. The story consists of 2694 words and was split at the 1193-word mark – right after Mr. Thompson has brought the girl back to his home.

Alyosha the Pot by Leo Tolstoy (1911) follows the life and death of a simpleminded, uncomplaining worker named Alyosha. At 19, his father sends him to work for a merchant, where he is tasked to do menial errands for the family. Alyosha does this happily and quietly. After a year and a half of service, he falls in love with the family cook, but the relationship is broken off by the merchant and his father. In the end, Alyosha falls from a roof and dies two days later, still cheerful. The ending is markedly sad. However, it does contain some elements of mixed emotions, as Alyosha seems content with the situation, even on his deathbed. The story consists of 2111 words and was split at the 1111-word mark – at the initiation of the relationship between Alyosha and the family cook.

Paper Menagerie by Ken Liu (2011) follows the relationship between an American boy and his Chinese mother. The mother has the ability to blow life into paper animal figures that she makes for the boy to play with. Eventually, the boy loses interest in these paper toys, and he asks for action figures instead, alienating his mother. After he has grown up, his mother dies, and the protagonist discovers a letter inside one of the folded paper animals, in which his mother explains her upbringing and what the years caring for the son were like for her. The ending may be seen as sad, yet there is also an element of communal sharing intensification in the letter from the mother, as it somewhat mends the broken relation between the two. This story is the longest of the five. Still, it was included as the language was simple and the ending was reported as quite moving during piloting. The story consists of 4919 words and was split at the 2050-word mark – at the point when the narrator demands action figures from his parents.

This is What it Means to Say Phoenix, Arizona, by Sherman Alexie (1993), follows the relationship between two Native Americans through a mixture of flashbacks and fictional

narrative present. The story begins when Victor learns that his father has died, and he needs to travel to Arizona to collect his father's ashes. However, Victor cannot afford the trip, so Thomas-Builds-The-Fire offers to help, as long as he is permitted to accompany Victor. Thomas is unpopular at the reservation, due to his tendencies of retelling the same stories, and Victor and Thomas have had a troubled relationship in the past. However, Thomas joins Victor on his trip, and Victor promises to listen to one of Thomas stories after they return home. The emotional valence of the ending is somewhat mixed, as Victor admits to himself that he and Thomas can never be friends, however, there is a recognizable intensification of communal sharing in their developing relationship throughout the story and at the eventual deal. The story consists of 3946 words and was split at the 1570-word mark – right before the trip commences.

Ethical Considerations, Piloting, Preregistration and Data collection

The thesis was recommended by the Department of Psychology's Research Ethics Committee in November 2019 (reference number 5547602), and the survey was piloted in December 2019. The pilot was initiated to investigate whether the survey items made sense to participants, as well as to check if the short stories' length were appropriate. The results of the pilot were positive, and all stories were decidedly included in the survey, despite the length differences. Minimal changes were conducted on the questionnaires.

The study was preregistered on AsPredicted.org on January 7th, 2020. The preregistration included a total of eight hypotheses, as mentioned above. A linear regression was registered to analyze H1, while a hierarchical regression was registered to analyze H2. All predictors were centered. For the additional hypotheses, a simple bivariate correlation was registered. Alpha levels were set to .05.

Participants were recruited through different online recruitment techniques. Some participants were recruited through a social media snowball effect, while others were recruited through Clickworker.com, and payed 3 dollars for 20 minutes of participation.

Based on estimates using GPower, 89 participants were required to get a power of 95 % for a medium effect of f2 = 1.5 for one predictor. For 150 participants, I detected an effect size of .09. 10 % outliers are expected. Thus, I aimed at collecting at least 100 participants to be able to detect a medium effect.

Data collection took place between January 11th and January 21st, 2020. In the preregistration, January 19th was set as a final deadline, however, due to a delay at Clickworker,

the final recruitment job of 80 participants was not accepted until January 20th. After the job was completed on January 21st, the recruitment process was stopped.

A total of 110 participants were recruited for the study. A data screening was conducted, and participants were excluded based on attention question responses, as well as completion rates. Participants who did not complete the survey were excluded, along with participants who failed to answer both attention questions correctly. Where the latter was the case, time spent on survey was also evaluated – if participants spent less than two standard deviations below the mean of time spent, they were excluded. After the screening, 18 participants were removed from the dataset, which left a total of 92 participants for the analysis. This fitted the estimates from GPower.

Data was initially stored at Qualtrics, on the account which only my supervisor and I had access to. As the material included no identifiable or sensitive information, it was classified as green according to the guidelines of data storage at the University of Oslo, and thus it was saved at my personal computer for further analysis. Aside from this, the material was not shared or stored at any other places.

Results

Firstly, I will present the results of the factor- and reliability analysis for the tension scale, before continuing to the results of the main, additional, and exploratory hypotheses.

Results from Factor- and Reliability Analysis

Using an Eigenvalue of 1 as an extraction criterion, the initial factor analysis of the tension scale suggested that items clustered around two factors, which could be interpreted as positive (hopeful) and negative (anxious) valence. The two factors may also resemble empathic distress and compassion (Singer & Klimecki, 2014). The pattern matrix shows the distribution of the items along the two factors (see Table 1 in Appendix A).

The amount of explained variance by factor 1 was 55.00 percent. When adding one additional factor, the explained variance increased by 14.07 percent, up to 69.07 percent explained variance. However, the factor correlation matrix showed a high correlation of .608 between the two factors. Moreover, the theoretical framework proposed by Lehne and Koelsch (2015) suggests that these two components (anxious and hopeful appraisal) are both sub-factors

of the general tension model. A reliability analysis was conducted to further investigate possible item exclusions.

The Cronbach's α of the full scale was 0.895 (see Table 2, Appendix A), which is considered strong (Tavakol & Dennick, 2011). Only one item (*I felt uncertain about the outcome of the story*) showed an increased α when removed, to an α of 0.901 (see Table 3, Appendix A). Moreover, this item did not correlate as strongly with the factors as the other eight items in the factor analysis (correlation was 0.361 with factor 1 – see Table 1, Appendix A). Thus, the item was removed from the scale, resulting in a mean tension score of eight items. See the discussion section for an elaborated explanation of this choice (39-40).

Results from Main Hypotheses

Mean scores of the tension scale, KAMMUS-S and resonance was computed in SPSS before the analysis was initiated. Also, the desirability of outcome was defined based on ratings on happy/sad ending, and preferred ending valence.

H1 suggested a path model where lower scores on probability rating (X1) predicted higher scores on tension (Y), and higher scores on desirability of outcome (X2) predicted higher scores on tension (Y). The main variance was predicted to stem from desirability of outcome. An interaction effect between probability rating and desirability of outcome was also predicted, where the effect of desirability of outcome on tension was moderated by the levels of probability rating. A linear regression analysis was conducted using SPSS, and both predictor variables were centered.

Results showed a significant R^2 of .245 with desirability of outcome and probability rating as predictors, and tension as outcome (see Table 4, Appendix A). The coefficient table showed a β of .478 of desirability of outcome, and of .081 of probability rating, confirming the predicted steeper slope for desirability of outcome than for probability rating. The unstandardized B was .445, 95% CI [.273, .616] for desirability of outcome, and .068 for probability ratings, 95% CI [-.087, .222]. As predicted, the coefficient was significant for desirability of outcome, $t(89) = 5.15$, $p < .001$, but contrary to predictions, it was not significant for probability rating, $t < 1$ (see Table 5, Appendix A).

Including the interaction term in the path model did not improve model fit. The R^2 increased slightly to .251, which corresponds to a non-significant R^2 Change of .005. Accordingly, the interaction term was not a significant predictor, β = .076, $t < 1$. The coefficient

table showed an unstandardized B of .461 for desirability of outcome, 95% CI [.284, .638], .054 for probability rating, 95% CI [-.105, .212], and .066 for the interaction term, 95% [-.101, .234]. β was .064 for probability rating, and .495 for desirability of outcome. Probability rating was not significant, $t < 1$, while desirability of outcome was significant, $t(89) = 5.18$, $p < .001$ (see Table 5, Appendix A).

For H2, the path model predicted that tension's effect (X) on kama muta (Y) would be moderated by hoped-for ending (M). In other words, tension should only predict high scores on kama muta if the participant scored high on hoped-for ending. A hierarchical regression analysis and F-test was conducted using SPSS, again with both predictors centered.

Results showed a significant R^2 of .514 for the path model with the two centered predictors, excluding the interaction term (see Table 6 in Appendix A). The coefficient table for the path model without the interaction term showed a significant unstandardized B of .727 for tension, 95% CI [.567, .887], $t(88) = 9.03$, $p < .001$, and .177 for hoped-for ending, 95% CI [.067, .288], also significant, $t(88) = 3.19$, $p = .002$ (see Table 7, Appendix A). β was .671 for tension and .237 for hoped-for ending.

When including the interaction term, the R^2 was .521, and a non-significant R^2 Change was .007. Again, the interaction was not a significant predictor, $t(87) = 1.12$, $p = .266$. β was .101 for the interaction term, and the unstandardized B for the interaction term was .073, 95% CI [-.057, .203]. The unstandardized B was .747 for tension, 95% CI [.583, .911], and .137 for hoped-for ending, 95% CI [.005, .269], both significant (for tension, $t(87) = 9.06$, $p < 0.001$, for hoped-for ending, $t(87) = 2.07$, $p = .042$). β was .690 for tension and .184 for hoped-for ending (see Table 7, Appendix A).

Results from Mediation Analysis

Because the results for H1 showed that desirability of outcome predicted tension ratings, and the results for H2 showed that tension and hoped-for ending both predicted kama muta (tension being the stronger predictor), I added a mediation analysis following the steps of Baron and Kenny (Kenny, 2018), to determine whether desirability of outcome (X) increases kama

muta (Y) by increasing tension (M). See discussion for justification on method of choice (page 38-39).

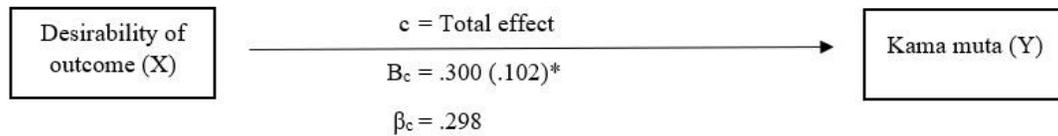| Desirability of outcome (X) | c = Total effect
B_c = .300 (.102)*
β_c = .298 | Kama muta (Y) |

Figure 1: Total effect of Desirability of outcome on Kama muta (standard error of B in parentheses).

The first step showed a significant total effect between the desirability of outcome (centered) and kama muta, $t(89) = 2.95$, $p = .004$. The unstandardized B was .300, 95% CI [.098, .503], and the β was .298 (see Table 8, Appendix A).

Tension (M)

B_a = .455 (.086)** B_b = .756 (.097)**

β_a = .489 β_b = .698

a   b

Desirability of outcome (X)

c'

$B_{c'}$ = -.043 (.091)

$\beta_{c'}$ = -.043
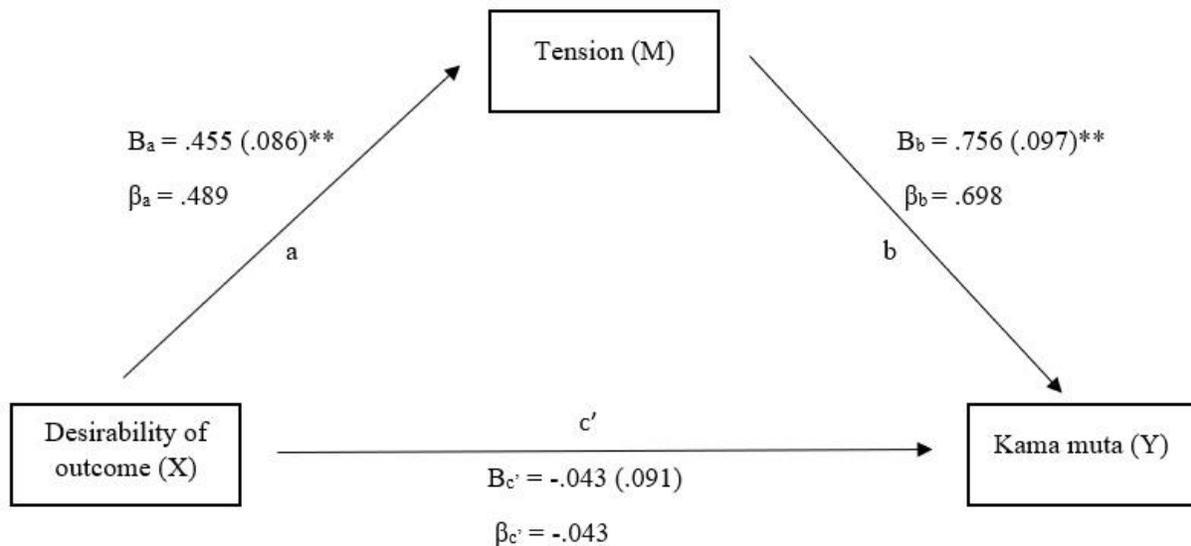
Kama muta (Y)

Figure 2: Indirect effect of Desirability of outcome and Kama muta via Tension (standard error of B in parentheses).

Step two showed a significant correlation between desirability of outcome as the predictor, and tension as the dependent variable, both centered, $t(90) = 5.32$, $p < 0.001$. The unstandardized B was .455, 95% CI [.285, .625] and the β was .489 for path a (see Table 9, Appendix A). In step three, path b showed a significant correlation between tension (centered) as the predictor, and kama muta as the dependent variable, while controlling for desirability of outcome (centered), $t(88) = 7.77$, $p < .001$. The unstandardized B was 0.756, 95% CI [.562,

.949], and the β was .698 for path b (see Table 10, Appendix A). Finally, step four showed a non-significant regression weight ($t < 1$) of the centered desirability of outcome on kama muta when controlling for tension. The unstandardized B for path c' was -.043, 95% CI [-.233, .137], and the β was -.043, suggesting a full mediation (see Table 10, Appendix A).

The indirect effect was calculated by multiplying the unstandardized B and β of path a and b. The unstandardized B of the indirect effect was 0.455 * 0.756 = 0.344, while the β was 0.489 * 0.698 = 0.341. To check whether the indirect effect was significant, a Sobel test was conducted. The results of the test showed $z = 4.38$, and a significant $p < 0.001$ (see Table 11, Appendix A).

Results from Additional Hypotheses

As for the additional hypotheses, some predicted correlations were discovered (see Table 12, Appendix A). All additional hypotheses were investigated using bivariate correlation analysis in SPSS. Considering other emotions, emotional satisfaction with the ending was positively correlated with happiness (.626), and negatively correlated with disgust (-.217), both significant.
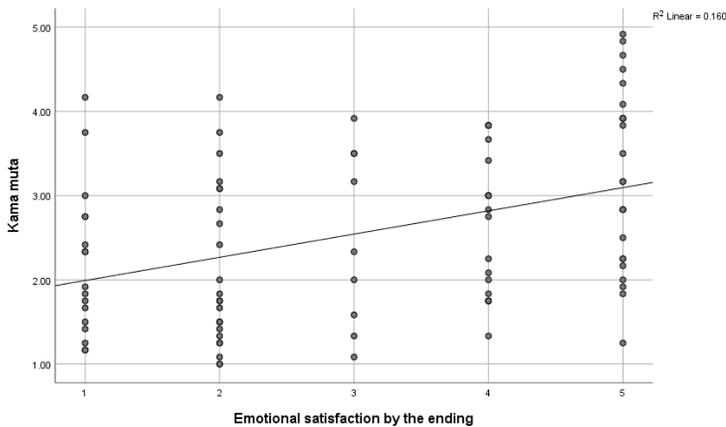
Figure 3. Correlation between emotional satisfaction and kama muta.
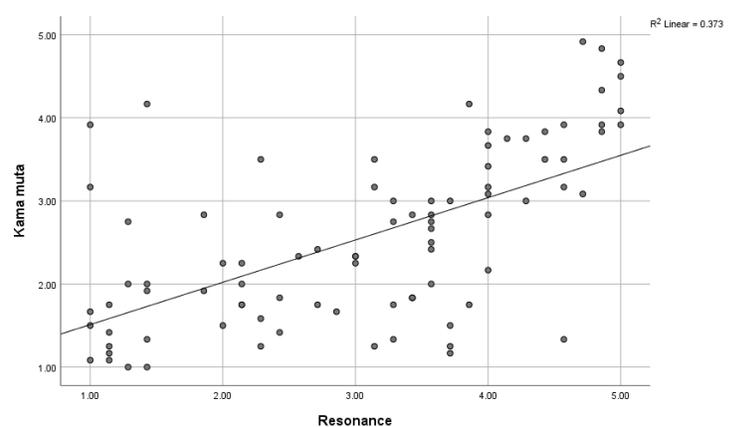
Figure 2. The correlation between resonance and kama muta.

Surprise, anger, fear and sadness were not significantly correlated with emotional satisfaction. In addition, emotional satisfaction significantly correlated with kama muta, as expected (.400) (see Figure 3), but not with boredom. Hoped-for ending significantly correlated with emotional satisfaction (.662), and kama muta significantly correlated with resonance (.610 – see Figure 4). However, tension did not significantly correlate with familiarity with outcome, contrary to expectations.

Table 13 (see Appendix A) shows descriptive statistics of the variables. Somewhat surprisingly, sadness had the highest mean score of all reported emotions (3.34), almost one scale point above kama muta (2.57).

Results from Exploratory Analysis

In addition to the main and secondary hypotheses of this thesis, I further tested some variable relations outside of the preregistration. This was due to intriguing discoveries from the initial analyses.

Firstly, I conducted a bivariate correlation analysis on tension and all other reported emotion variables (anger, sadness, happiness, surprise, disgust, fear and boredom). Tension significantly correlated with all emotions except disgust, where sadness showed the highest correlation (.594). Anger (.314), happiness (.399), surprise (.280) and fear (.362) all showed a positive correlation with tension, while boredom correlated negatively (-.468). For comparison, tension showed a significant correlation of .677 with kama muta (see Table 12, Appendix A).

Secondly, I conducted a bivariate correlation analysis on kama muta and all other reported emotion variables. The results indicated a positive, significant correlation between kama muta and sadness (.430), happiness (.680) and surprise (.460). Anger and disgust did not significantly correlate. Somewhat surprisingly, kama muta and fear showed a significant correlation (.280). There was also a negative, significant correlation between kama muta and boredom (-.286) (see Table 12, Appendix A).

Discussion

The main question raised in this thesis is whether antecedent tension can lead to a stronger kama muta experience. This assumption is supported by the results: tension turned out to be a strong predictor of kama muta, indicating that readers who felt more tension during the reading also experienced more kama muta. These results are in line with the theoretical proposition that the emotional state achieved after a tension experience is preferable to the state before tension was elicited (Lehne & Koelsch, 2015), and they provide intriguing insight into the dynamic interplay between affective states during a fiction reading.

Tension, Epistemic and Emotional Probability

Generally, the results of the analyses were mostly in line with the predictions. In their general psychological model of tension, Lehne and Koelsch (2015) state that the degree of felt

tension appears to be directly related to the range of anticipated events and their emotional valence. This proposition is in line with the results from H1, where the main variance of tension stemmed from desirability of outcome. Indeed, the tension model's sub-components of anticipation and emotional significance do seem to affect the amount of experienced tension; the higher the desire for an outcome with a preferred emotional valence, the more tension was felt. This discovery supports the notion that emotional probability (what readers wants to happen) is crucial in tension elicitation.

I further proposed that when people interpret their desired outcome as highly unlikely, they would experience increased tension. I suggested that this also aligned with the Bayesian approach to narrative, which claims that readers evaluate plausible plot outcomes against what they themselves wish to happen (Kukkonen, 2014, 2020). The discrepancy between predictions informed by epistemic sense of likelihood and emotional investment should indicate uncertainty and narrative conflict – another sub-component of tension. As probability rating did not have a significantly effect on the explained variance of tension, the assumption that epistemic probability negatively mediates emotional probability's effect on tension was discarded, at least on the grounds of the five stories included within this specific study. The findings could be explained, if for example the epistemic probability rating does not correlate with tension in a linear pattern. If a participant interprets their desired outcome as highly unlikely, they may in fact feel certain that another, *undesired* ending is imminent, reducing ambivalence about the outcome, possibility making the reader less engaged.

Another explanation for the lack of a significant effect may be due to the precision established by the stories in the study (Edwards et al., 2012; Kukkonen, 2020; Palmer et al., 2017). As all five stories were building to a kama muta resolutions, participants may have easily formed early expectations about the plot development, consequently strengthening their precision of prior distribution. Thus, they could experience more arising tension due to their anticipation of their existing beliefs, while disregarding evidence of new observations within the plot. This may have reinforced the effect of desirability of outcome (emotional probability), while simultaneously reduced the effect of uncertainty (epistemic probability – which may be more closely related to precision of likelihood distribution). Other stories, utilizing other narratives of tension elicitation (such as psychological thrillers or crime fiction) may yield different results. Such stories may, however, elicit suspense rather than tension, as it is

theoretically conceivable that narratives depending on epistemic probability primarily evoke suspense (Beecher, 2000; Kukkonen, 2020). As of this paper, the relation between epistemic probability interpretation and tension remains inconclusive, and further research on this topic is encouraged.

Tension and Kama Muta

The results of H2 suggest that the main predictor for kama muta elicitation is tension. Hoped-for ending also significantly correlated with kama muta, however, the effect was weaker. If the narrative outcome proves to fulfill readers' hope (i.e. the story ended as the reader wished it to end), it should have some effect on how strongly readers are moved by a kama muta ending – yet it is the amount of antecedent tension which explains most of the experienced kama muta at the end of the reading. I further proposed a moderation effect between hoped-for ending and tension on kama muta. The assumption was that readers would only experience kama muta if they felt sufficient amount of tension in advance, and if the ending proved to meet their hopes. This was not the case, as the path model including the interaction did not explain significantly more variance. This does suggest that, to some extent, the quality of the ending can be surprising, and readers may still be moved by it, provided there is enough antecedent tension. This notion is further supported by kama muta positively correlating with surprise, which will be further discussed shortly. Previous research further support this claim (Zickfeld et al., 2017).

Since desirability of outcome predicted tension in H1, and tension further predicted kama muta in H2, a mediation analysis was conducted to investigate whether tension mediated the effect of desirability of outcome on kama muta. Initially, a correlation between desirability of outcome and kama muta was discovered, implying that having a desire for a certain outcome while reading a story, may lead to a more powerfully moving end. When including the indirect effect in the model, however, the significance of the direct effect vanished. This suggested a full mediation, that is, tension fully accounted for the effect desirability of outcome had on kama muta. Theoretically, this model makes sense; if readers interpreted a specific, desired outcome at the earlier stages of the read, felt tension would increase, as readers should feel emotionally invested and anticipate their desires. This increase in tension further heightened the amount of experienced kama muta, which aligns with the results from H2.

I used Baron and Kenny's (1986) steps for mediation to determine the mediation effect. However, recently literature has recommended "index" approach to mediation, where the causal

model is ascertained by a single statistical test, rather than several steps (Biesanz, Falk, & Savalei, 2010; Fritz, Taylor, & MacKinnon, 2012; Hayes & Scharkow, 2013). The reasonings behind the index approach are numerous, including increased statistical power, and that a single index can point to the plausibility of the underlying casual model (Yzerbyt, Batailler, & Judd, 2018). However, Yzerbyt, Batailler and Judd (2018) argues that the problem with single index approaches are two-folded: Firstly, the confidence in a single, statistical index is prone to Type 1 error (rejection of a true null hypothesis – so-called "false positive"), and secondly, the use of a simple statistic may discourage researchers to further explore the individual relations in the model. They further state that the index method substantially inflated alpha levels, particularly during instances in which one of the two components of the indirect effect equaled zero, and the other was relatively large. Consequently, I decided on the four-step model, to be able to further investigate the path model of the mediation effect, although the approach is less liberal. As a full mediation effect still emerged from this approach, it may suggest that the effect is relatively robust.

Construction of Tension Scale

For the purposes of this survey, a tension scale was constructed based on the sub-components of the tension model proposed by Lehne and Koelsch (2015). Some interesting distinctions were discovered in the factor analysis. The analysis showed a cluster around two factors, which could be interpreted as positive (hopeful) and negative (anxious) valence. The two clusters may also resemble the concepts of empathic distress (resulting from negative valence) and compassion (resulting from positive valence) (Singer & Klimecki, 2014). As Table 1 shows, most items (the exception being *I felt uncertain about the outcome of the story)* correlated highly with just one of the factors. The eigenvalue further suggested that the two-factor model was the best fit. The results did raise the question of whether items measured the same latent variable – namely tension. However, the factor correlation matrix showed a high correlation of .608 between the factors. Moreover, both hope and anxiety has been suggested as tension experiences, resulting from either positive or negative valence of the anticipated narrative outcome. (Lehne & Koelsch, 2015). A reliability analysis was consequently performed to examine item fit.

The reliability analysis showed a good Cronbach's alpa of .895, which initially indicate that all nine items fit the scale. Only one item increased the alpha (to .901) when removed, specifically *I felt uncertain about the outcome.* Ultimately, the item was removed from the scale,

both as a result of the reliability analysis, and due to the item not correlating as strongly with either of the two factors in the factor analysis. This resulted in a total of eight items for the tension mean score. One could argue that an alpha above .90 is undesirable (Tavakol & Dennick, 2011), as it may indicate redundancy in the questionnaire. However, as the initial scale only consisted of nine items, which further derived from distinct sub-components of the latent variable, redundancy was not considered an issue. Moreover, as the items in the factor analysis clustered around two factors – which theoretically stemmed from the same latent variable – I further concluded that the items measured separate variance of tension.

It is interesting that it was the item *I felt uncertain about the outcome of the story* which proved a lesser fit on the scale. The finding aligns with the results of the probability rating, which implied that feeling uncertain about the desired outcome did not affect tension. As mentioned earlier, this may be due to the nature of the selected stories, possibility prompting a strong confidence in precision of prior distribution (Edwards et al., 2012; Palmer et al., 2017), making tension elicitation less reliant on uncertainty and new observations. Lehne and Koelsch (2015) suggest that uncertainty of a narrative is a key component of tension – however, it may not be the case within this specific study. As such, the item *I felt uncertain about the outcome of the story* may prove a better scale fit in studies with stories utilizing other methods of tension elicitation.

Relation Between Tension, Kama Muta and Other Emotion Responses

Aside from the main hypotheses, several correlation analyses were conducted to investigate further relations between the variables. I hypothesized that feeling emotionally satisfied by the narrative ending would have a strong impact on the affective outcome. As expected, there was a positive, moderate correlation between emotional significance and kama muta, suggesting that people who felt moved by the ending, also felt emotionally satisfied by it to some extent. However, although the short stories were selected based on a recognizable kama muta outcome (specifically an intensification of a communal sharing relation), it was not given that all participants specifically felt kama muta by the ending. Thus, other emotional outcomes were also investigated.

A strong correlation between happiness and emotional satisfaction was discovered, which implies that participants who felt joy by the end of the story, also felt more satisfied. Interestingly, a significant, negative correlation between emotional satisfaction and disgust was discovered. On a surface level, this implies that narrative outcomes which evoke revulsion or distaste in the reader, may reduce emotional satisfaction by the end of the reading. However, the correlation may also be due to the nature of the selected stories; as all five stories were building to a kama muta outcome, disgust could possibly be considered an opposite emotional reaction, explaining why people who felt emotionally satisfied, also felt less disgusted. Other stories, which play on emotional reactions such as revulsion or shock, may see a stronger correlation between disgust and satisfaction. More research on this topic is encouraged.
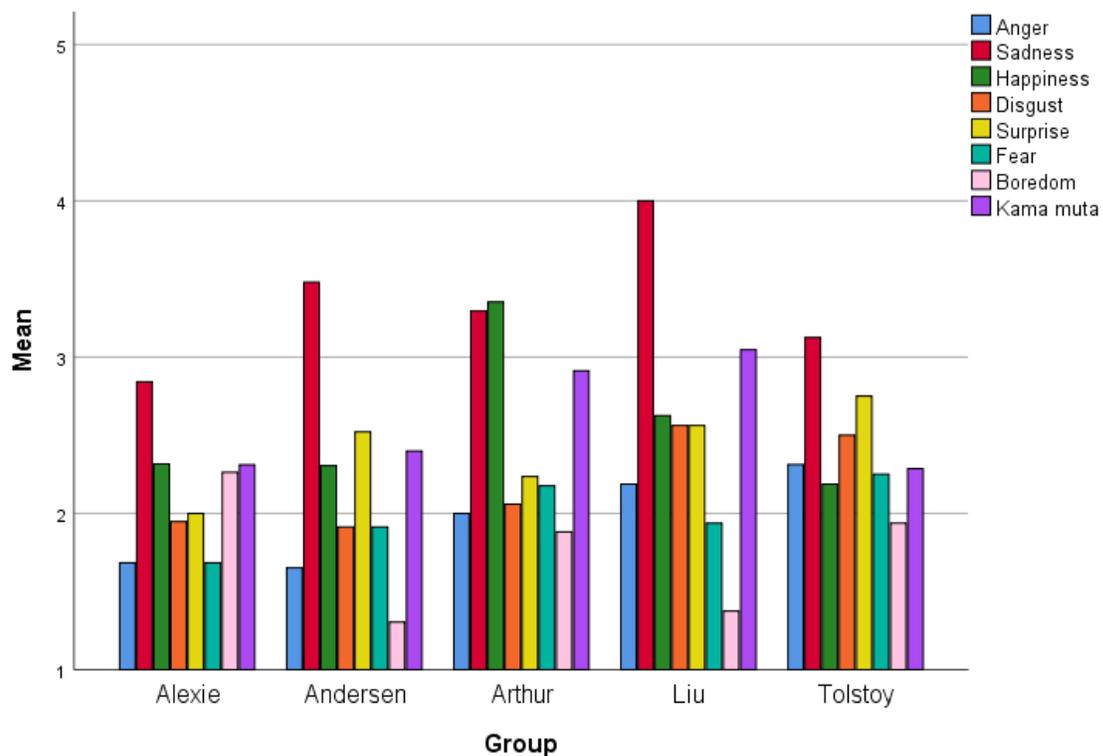
Figure 5. The mean score of all reported felt emotion across the five short stories. The bars indicate that sadness was the strongest reported emotion for most stories.

Anger, fear, sadness and boredom did not prove to correlate significantly with emotional satisfaction. The most surprising of the four were sadness and boredom. Firstly, several of the selected stories (noticeably *The Little Match Girl, Paper Menagerie,* and *Alyosha, the Pot*) employed sad or mixed emotional elicitation as the foundation for emotional movement. Figure 6 shows that participants indeed felt sad while reading, with a mean score of 3.34, higher than any

other reported emotion (also see Table 13, Appendix A). Consequently, the short stories selected for this study may indeed have been primarily sad instead of moving, or they could possibility be viewed as a sad sub-genre of kama muta narratives. However, negative emotions, such as sadness, should theoretically affect the reader both powerfully and pleasantly (Menninghaus et al., 2017), which to some extent would suggest that people who felt either negative emotions or a mix of emotions would be emotionally satisfied by the ending. One possible explanation for the non-significance could be that not all stories included elements of sadness, which may intervene with a possible relation in some of the stories. For now, the non-significance of the results is inconclusive, yet the topic is intriguing and should be further researched.

Boredom was the other surprising variable with no significant effect on emotional satisfaction. Intuitively, it seemed likely that that people who felt emotionally satisfied with the story, also felt less bored by reading, and vice versa. A negative correlation was thus expected. However, the effect was not present, implying that boredom does not predict (less) emotional satisfaction by the end of the narrative. It may be possible that a reader could be bored by a fictional story, yet still feel satisfied by the story's conclusion. How and when these instances occur should be further investigated.

As expected, a strong correlation between emotional significance and hoped-for ending emerged. This indicated that readers felt emotionally satisfied to some extent when the ending corresponded to their own wishes. More surprisingly was the lack of a significant correlation between tension and familiarity with outcome. It was assumed that participants who knew the outcome of the story from before, would feel less tension than participants who were not familiar with the ending, as uncertainty is considered a key-component of tension experiences (Lehne & Koelsch, 2015). However, the non-significance does indeed align with the paradox of suspense, which claims that suspense is resistant to reduction upon repeated exposure to the same narrative (Coëgnarts & Kiss, 2017; Geal, 2017; Gerrig, 1989). This effect seemingly rings true for tension as well, which in this instance may be explained by a strong effect of the anticipation of a desired outcome. Relived narrative emotions may constitute a further explanation (Mar et al., 2010), since participants might have anticipated the same emotional responses as during their initial exposure to the story, queuing them to reexperience the same emotional responses. If such is the case, then these relived, narrative emotions may be interpreted as a kind of aesthetic emotion (Mar et al., 2010; Menninghaus et al., 2018), as emotions arises due to an appreciation of the

emotional appeal which the narrative initially held. Thus, the distinction between narrative and aesthetic emotions may be more fluid than originally suggested (Mar et al., 2010). However, the results of this study are not sufficiently extensive to draw any conclusions on this topic, and more research is encouraged.

The exploratory analysis showed an expected co-occurrence with kama muta and other emotions. Kama muta positively correlated with both sadness and happiness, suggesting that readers may feel moved by an ending that is simultaneously sad or happy. Kama muta also positively correlated with surprise. This aligns with previous research on the topic (Zickfeld et al., 2017). Moreover, a significant, negative correlation between kama muta and boredom was discovered, which might indicate that people who felt kama muta also were more engaged in the narrative (Tilburg & Igou, 2017; Westgate, 2020). Interestingly, and somewhat baffling, kama muta also positively correlated with fear. The relation could be explained by anxiety, which has been proposed as a "lead-up" emotion to kama muta in some instances (Fiske et al., 2017; Seibt, Schubert, Zickfeld, & Fiske, 2017). Anxiety is further theorized to be an interpretation of tension, if the person feeling tension envisions an outcome of significant, negative valence (Lehne & Koelsch, 2015). A potential anxiety arousal while reading may have impacted the fear item due to a kind of *attribute substitution* (Honda, Matsuka, & Ueda, 2017; Kahneman & Frederick, 2002). "Anxiety" was not one of the emotions labels in the questionnaire, thus participants might have attributed their anxiety to fear when they read the available fear option, as this became a simple, heuristic explanation for their arousal. That being said, it may be possible that fear itself could have had an effect on kama muta. Readers might have feared for the life of the girl in *The Little Match Girl*, for instance, which may have affected a kama muta response later in the story. As of this paper, the correlation between fear and kama muta remains uncertain.

The exploratory analysis further indicated an interesting facet of tension concerning emotion elicitation. Tension correlated positively not only with kama muta, but also with sadness, anger, happiness, surprise, and fear. This implies that antecedent tension does in fact increase the power of subsequent emotions, regardless of the quality of the emotion. These results suggest that tension plays an integral role in emotion elicitation throughout a narrative reading. Moreover, tension negatively correlated with boredom. As such, tension may indeed

promise excitement, as suggested by Lehne and Koelsch (2015), which could explain some amount of self-imposed tension experiences.

Finally, there was a significant correlation between kama muta and resonance. The correlation was expected, as previous research has shown a significant correlation between identification with either the father or the child in soldier homecoming videos, and reported kama muta (B. Seibt, personal communication, April 10, 2020). This implies that participants may experience kama muta more powerfully if they identify with the character(s) and are able to infer personal experience into the narrative events, which could conceivably also evoke relived emotions. Seemingly, identification and relived emotions contribute to the intensity of the kama muta experience, even when the people we resonate with are fictional. The relation between these variables is intriguing, and future research on how and when resonance happens, as well as how it affects the emotional involvement of the narrative, could broaden the perspective of fiction reading as emotionally transformative experiences (Fialho, 2019). Moreover, future research may expand upon the relation between kama muta other narrative emotions, such as sympathy and remembered emotions (Mar et al., 2010), as well as aesthetic emotions (Menninghaus et al., 2018) to further explain how kama muta can be elicited by narratives.

Limitations and Future Research

Although the results of this study suggest interesting relations between tension, kama muta and fiction reading, there are some limitations. Firstly, the sample size of the survey is quite small, with only 92 participants. This may cause issues with for the factor analysis, as factor analyses are sensitive to sample size and communalities. One rule of thumb is that a factor having four or more loadings > .06 is reliable regardless of sample size (Guadagnoli & Velicer, 1988), which did fit the pattern matrix for factor 1 (see Table 1). As a mostly clear pattern emerged from the loadings, the results were considered agreeable and theoretically meaningful, despite the smaller sample size.

Due to the small sample size, it is also impossible to determine statistical effects across different short stories. The descriptive statistics presented in this paper showed some variation in felt emotions after reading across the stories – however, this number is interpreted at face value, and a larger sample for each individual story is needed to detect statistical patterns across the five selected short stories.

The results are also reliant on self-report measures, which requires some level of emotional awareness for an honest report. Self-report measures may also succumb to social desirability bias, i.e. participants may feel inclined to answer in a way they perceive as favorable (Mortel, 2008). For instance, they may report a higher emotional reaction than what they actually felt in order to appear as if they "got" the story. People also answered at home, which could lead to more disturbances during the reading, increasing the amount of data error. Apart from the screening initiated before the analyies, there was also little control over whether participants read the story properly or answered the questions honestly. Another weakness of self-reported measures is that participants may not be willing to think their way through their answer. Acquiescence bias is one example of this, which is a tendency for respondents to positively answer questions or agreeing with statements (sometimes referred to as "yea-saying"), without considering their real preference (Dolgov & Schwark, 2018; Kuru & Pasek, 2016). Further research in experimental conditions could reveal different emotional responses than the results of the current study.

Furthermore, the factor- and reliability analysis were conducted on the same data set as the analyses for the preregistered hypotheses, which is generally unadvisable. However, due to the limited scope of this thesis, there was neither sufficient time nor resources to recruit one sample large enough for the factor- and reliability analyses, and another sample for the regression and correlation analyses. Consequently, the same data set was used throughout this study.

There is also the issue of tension measures during the story split. The aim of this thesis was to investigate the dynamic relation between tension and subsequent emotional responses – yet, with only one tension measurement midway through the read, there is no definite measurement of the whole tension experience throughout the participation. Some readers may have felt more tension during the second half of the read, which might have inflated the emotion reports at the end, or they may have felt a significant decrease in tension due to the story split, deflating ensuing emotion reports. The story split may further have affected the results on probability ratings. Readers may feel different levels of uncertainty at different times during the reading, and this may have influenced their tension experience, without being accounted for within the tension measurement. Future research could correct these issues by implementing

systems which allows readers to report their tension levels throughout the reading, without being removed from the narrative investment.

The fact that both tension and kama muta were each measured at one specific point in the survey, also raises some questions about causality. The included short stories were selected due their kama muta-inducing *ending*, and since tension was measured midway through the story, it seems plausible that tension preceded kama muta. However, there is no definite way to conclude that participants felt kama muta only at the story conclusion, and as such, kama muta may just as well have occurred before elicited tension. Future, experimental studies on this relation could help clarify the causality of these variables.

Another issue is that the study focuses mainly on short stories. The aim of the thesis is to investigate the emotional impact of fiction reading, and even though short stories are a valid form of fiction, more research is needed on emotional impact of fictional novels, or non-fictive readings such as memoirs, for instance. Future research on the topic of tension, kama muta and other emotional responses to different kinds of readings can further uncover intriguing relations and effects on this topic.

Hopefully, the discussion between the fields of psychology and literary studies may be furthered by this thesis. Despite its limitations, the results of the current study suggest interesting dynamics between different affective responses to a narrative. Tension may help broaden our understanding of why we respond emotionally to fiction, such as my own desperate desire for the characters in *Never Let Me Go* (Ishiguro, 2005) to live happy, fulfilling lives – a desire which, ultimately, broke my heart, and yet still moved me to tears.

Conclusion

The main purpose of this thesis was to investigate whether antecedent tension would affect kama muta experience during fiction reading. I proposed that higher amounts of tension during the reading would lead to a more powerful kama muta elicitation at the climax of the short story. Results of the analyses confirmed that this was indeed the case – participants who reported more tension also reported higher levels of kama muta. Furthermore, tension turned out to be the strongest predictor for subsequent kama muta, while hoped-for ending (i.e. the ending corresponding to the readers wishes) also showed some effect.

Desirability of outcome turned out to be the strongest predictor of tension, which aligns with the theoretical model of anticipation and emotional investment as sub-components of tension. In terms of the Bayesian approach to narratives, this suggests that emotional probability plays a crucial role in tension elicitation. Probability ratings (or epistemic probability) did not significantly predict tension, indicating that readers may feel tension despite how likely or unlikely their desired story ending seems to them. However, the non-significant effect of probability ratings may be explained by the nature of the selected stories, which could have prompted readers to anticipate a specific, desired outcome while discarding new plot observations, thus reducing the effect of uncertainty on tension. Stories such as psychological thrillers or crime fiction, which utilize epistemic probability to engage the reader, may yield a different relation between tension and epistemic and emotional probability (Kukkonen, 2020). However, it may also be the case that these stories evoke suspense rather than tension. Future research could help clarify the distinction between the two concepts, as well as the instances in which each of them occur.

Further analysis indicated a full mediation of tension on desirability of outcome's effect on kama muta – that is, the relation between desirability of outcome and kama muta was fully explained by experienced tension. The path model showed a significant correlation between desirability of outcome and tension, and a strong, significant correlation between tension and kama muta. As such, if a participant imagined a desired outcome while reading, they may experience heightened tension, which again may increase the kama muta elicitation at the communal sharing ending.

Moreover, a correlation between kama muta and emotional satisfaction was discovered. Participants who felt moved by the ending, were also more likely to feel satisfied by it. Emotional satisfaction also positively correlated with happiness, and negatively with disgust. There was also a significant correlation between hoped-for ending and emotional satisfaction, suggesting that readers who felt like the story ended as they wanted to, also were more likely to feel satisfied by the ending. Finally, a correlation between resonance and kama muta also emerged, supporting previous suggestions that people are more likely to feel moved by others if they identify with them and their experiences – which, in this case, was characters within the stories.

Tension further appeared to be a significant predictor for several emotions. Conclusively, antecedent tension does indeed seem to increase the power of the subsequent emotional elicitation at the climax of the narrative, regardless of the quality of the elicitation. The results of this thesis suggest that tension plays an intrinsic part in the magnitude of the emotion elicited by reading.

Although intriguing relations between tension and subsequent emotional responses were detected in this thesis, the study is not without flaws. The data stemmed from self-reported measures, which is susceptible to social desirability bias and errors due to disturbances or an unwillingness and/or unawareness to answer honestly. The sample size is also small ($n = 92$), due to the limited scope and resources on this thesis. And even though the study investigated the emotional responses to *reading*, only short stories were included in the survey. Future research may discover different effects of tension and emotional development over the course of a novel reading, for instance. However, the results of this study are promising for future research on tension's effect on emotion elicitation, as well as factors which may influence kama muta experiences, and further investigation on these topics is encouraged.

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Appendix A – Results Overview

Table 1

Pattern Matrix[a]

	Factor	
Items	**1**	**2**
I longed to find out how the story ends	**.899**	.010
I felt excited about reading more	**.879**	-.041
I felt hopeful for where the story was going	**.815**	-.109
I cared about the story and/or the characters	**.767**	.075
I hoped the problems of the story would be resolved by the end	**.632**	.059
I felt uncertain about the outcome of the story	**.361**	.082
I felt unease or on edge	-.027	**.884**
When reading this story, I feel a sense of tension	-.032	**.880**
I felt anxious about the way the story was going	.173	**.714**

Extraction Method: Principal Axis Factoring.

Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 4 iterations.

Table 2

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.895	.894	9

Table 3

Item-Total Statistics

	Cronbach's Alpha if Item Deleted
When reading this story, I feel a sense of tension	.887
I felt unease or on edge	.886
I felt anxious about the way the story was going	.880
I cared about the story and/or the characters	.877
I felt uncertain about the outcome of the story	**.901**
I longed to find out how the story ends	.871
I felt excited about reading more	.877
I felt hopeful for where the story was going	.886
I hoped the problems of the story would be resolved by the end	.886

Note: Items that will increase the initial Cronbach's alpha higher are bolded

Table 4

Model Summary

					Change Statistics				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Std. Error of the Estimate	F Change	df1	df2	Sig. F Change
1	.495a	.245	.228	.83755	.245	14.470	2	89	.000
2	.501b	.251	.225	.83935	.005	.617	1	88	.434

a. Predictors: (Constant), desirability_c, probability_c

b. Predictors: (Constant), desirability_c, probability_c, prob_desire_c

Table 5

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	95.0% Confidence Interval for B Lower Bound	95.0% Confidence Interval for B Upper Bound
1	(Constant)	3.254	.087		37.266	.000	3.081	3.428
	probability_c	.068	.078	.081	.870	.387	-.087	.222
	desirability_c	.445	.086	.478	5.145	.000	.273	.616
2	(Constant)	3.244	.088		36.665	.000	3.068	3.420
	probability_c	.054	.080	.064	.672	.503	-.105	.212
	desirability_c	.461	.089	.495	5.176	.000	.284	.638
	prob_desire_c	.066	.084	.076	.786	.434	-.101	.234

a. Dependent Variable: tension_mean

Table 6

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics Std. Error of the Estimate	Change Statistics F Change	df1	df2	Sig. F Change
1	.717[a]	.514	.503	.73206	.514	46.524	2	88	.000
2	.722[b]	.521	.504	.73101	.007	1.254	1	87	.266

a. Predictors: (Constant), hoped_for_c, tension_c

b. Predictors: (Constant), hoped_for_c, tension_c, tension_hoped_c

Table 7

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	(Constant)	2.304	.082		28.054	.000	2.140	2.467
	tension_c	.727	.081	.671	9.026	.000	.567	.887
	hoped_for_c	.177	.056	.237	3.186	.002	.067	.288
2	(Constant)	2.294	.082		27.830	.000	2.130	2.458
	tension_c	.747	.082	.690	9.062	.000	.583	.911
	hoped_for_c	.137	.066	.183	2.067	.042	.005	.226
	tension_hoped_c	.073	.065	.101	1.120	.266	-.057	.203

a. Dependent Variable: kama_muta_mean

Table 8

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	(Constant)	2.570	.104		24.601	.000	2.363	2.778
	desirability_c	.300	.102	.298	2.945	.004	.098	.503

a. Dependent Variable: kama_muta_mean

Table 9

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	(Constant)	.362	.087		4.146	.000	.188	.535
	desirability_c	.455	.086	.489	5.316	.000	.285	.625

a. Dependent Variable: tension_c

Table 10

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	(Constant)	2.570	.104		24.601	.000	2.363	2.778
	desirability_c	.300	.102	.298	2.945	.004	.098	.503
2	(Constant)	2.296	.088		26.005	.000	2.121	2.472
	desirability_c	-.043	.091	-.043	-.479	.633	-.223	.137
	tension_c	.756	.097	.698	7.765	.000	.562	.949

a. Dependent Variable: kama_muta_mean

Table 11

Sobel test

	Input:		Test statistic:	Std. Error:	*p*-value:
a	0.455	**Sobel test:**	4.37739228	0.07858103	0.00001201
b	0.756	**Aroian test:**	4.35293329	0.07902258	0.00001343
S_a	0.086	**Goodman test:**	4.40226826	0.07813699	0.00001071
S_b	0.097				

Table 12

Correlation table

	Emotional satisfaction	Kama muta	Tension
Anger	-.174	.182	.314**
Sadness	.043	.430**	.594**
Happiness	.626**	.680**	.399*
Disgust	-.217*	.121	.173
Surprise	.038	.460**	.280**
Fear	-.075	.280**	.362**
Boredom	-.139	-.286**	-.468**
Kama muta	.400**		.677**
Hoped-for ending	.662**		
Familiarity with outcome			.043
Resonance		.610**	

*Note: ** p < 0.01*

Table 13

Descriptive Statistics

	N	Minimum	Maximum	Mean		Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic
Emotional satisfaction	92	1	5	3.08	.158	1.514
Hoped for ending	92	1	5	2.73	.145	1.392
Anger	92	1	5	1.92	.115	1.102
Sadness	92	1	5	3.34	.136	1.303
Happiness	92	1	5	2.53	.133	1.279
Disgust	92	1	5	2.15	.129	1.240
Surprise	92	1	5	2.42	.142	1.361
Fear	92	1	5	1.97	.129	1.235
Boredom	92	1	5	1.73	.115	1.100
Kama muta mean	91	1.00	4.92	2.57	.109	1.038
Resonance mean	90	1.00	5.00	3.07	.131	1.240
Tension mean	92	1.00	5.00	3.25	.099	.953
Valid N (listwise)	89					

Appendix B – Informed Consent

Welcome to this study about feelings that arise when we read fiction. The goal is to better understand what makes us feel emotions, and which emotions we feel.

This study is conducted in association with the University of Oslo. You can contact jonassun@student.sv.uio.no for questions or comments about the study.

What does the study entail?

In this study, you will be presented with a short story, and asked to read at your own pace. The story is separated into two parts. After you have read the first part, you will be asked some questions about how you interpret the story, as well as what you feel. You will then be presented with the second part of the story, and finally a second set of questions.

There is no time limit to this survey. The entire procedure will take approximately 15-25 minutes, depending on your reading speed.

You are free to withdraw from the survey at any given time. Just exit the internet browser.

Potential advantages and disadvantages

The story that you are going to read is selected because it may evoke emotional reactions. Some of the material might cause some sadness, among other emotions. If you recently suffered a traumatic experience, you may feel that you do not want to finish the study. However, none of the stimuli features any graphic violence, disturbing scenes, or sexual content.

What will happen to the information about you?

The data that are registered about you will only be used in accordance with the purpose of the study, as described above. All the data will be processed without name, ID number or other directly recognizable type of information. It will not be possible to identify you in the results of the study when these are published.

Voluntary participation

Participation in the study is voluntary. You can withdraw your consent to participate at any time throughout the survey, without stating any particular reason. If you wish to withdraw, just exit the internet browser. This will not have any consequences for you. This survey is completely anonymous, meaning it is impossible to identify your data once they are sent in. It is thus not possible for you to delete your responses after completing the survey. We ask you to consider this before you click send at the end of the survey. Thank you for participating!

Appendix C – Online Survey[3]

Desirability of outcome and probability measure

Think about what you have read so far.

What type of ending do you yearn for? Please rate the questions below.

	Not at all	A little bit	Somewhat	Quite a lot	Very much
I yearn for a happy ending	○	○	○	○	○
I yearn for a sad ending	○	○	○	○	○

What type of ending to you desire the most?

○ A happy ending

○ A sad ending

○ Both happy and sad ending

Please consider how you think the story will end

	Very unlikely	Somewhat unlikely	Neither likely nor unlikely	Somewhat likely	Very likely
How likely do you think it is that the story will end the way you are yearning for?	○	○	○	○	○

Tension scale

Consider the following statement:

	Not at all	A little bit	Somewhat	Quite a lot	Very much
When reading this story, I feel a sense of tension	○	○	○	○	○

How much did you feel the following sensations while reading?

	Not at all	A little bit	Somewhat	Quite a lot	Very much
I felt unease or on edge	○	○	○	○	○
I felt anxious about the way the story was going	○	○	○	○	○

---

[3] Short stories and the relevant attention questions are excluded from this survey overview, as they did not contribute to the variable measures.

	Not at all	A little bit	Somewhat	Quite a lot	Very much
I cared about the story and/or the characters	○	○	○	○	○
I felt uncertain about the outcome of the story	○	○	○	○	○
I longed to find out how the story ends	○	○	○	○	○
I felt excited about reading more	○	○	○	○	○
I felt hopeful for where the story was going	○	○	○	○	○
I hoped the problems of the story would be resolved by the end	○	○	○	○	○

Actual ending interpretation

How do you interpret the ending of the story?

	Not at all	A little bit	Somewhat	Quite a lot	Very much
It was a happy ending	○	○	○	○	○
It was a sad ending	○	○	○	○	○

Consider the following statements:

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
This was the ending I yearned for	○	○	○	○	○
I felt emotionally satisfied by the ending	○	○	○	○	○

KAMMUS-S

Please indicate whether you experienced any of the following sensations while reading, and if so, to what extent:

	Not at all	A little bit	Somewhat	Quite a lot	Very much
Tears	○	○	○	○	○
Chills and shivers	○	○	○	○	○
A warm feeling in the center of the chest	○	○	○	○	○

	Not at all	A little bit	Somewhat	Quite a lot	Very much
Choked up	○	○	○	○	○
Refreshed, energized or exhilarated	○	○	○	○	○

Please rate to what extent each of the following statements are true:

I felt/observed...

	Not at all	A little bit	Somewhat	Quite a lot	Very much
An extraordinary feeling of welcoming or being welcomed	○	○	○	○	○
An exceptional sense of closeness appear	○	○	○	○	○

Please indicate whether you had each of the following feelings just after reading, and if so, to what extent:

	Not at all	A little bit	Somewhat	Quite a lot	Very much
I felt like telling someone how much I care about them	○	○	○	○	○
I wanted to hug somebody	○	○	○	○	○

Please rate to what extent the following statement is true:

	Not at all	A little bit	Somewhat	Quite a lot	Very much
I had positive feelings	○	○	○	○	○

Please rate how much you felt the following sensations while reading:

	Not at all	A little bit	Somewhat	Quite a lot	Very much
Moved	○	○	○	○	○
Touched	○	○	○	○	○

Resonance scale (Section from Transformative Reading Scale)

Please consider the following statements:

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
The character's thoughts and feelings made me recall thoughts and feelings I also had in the past	○	○	○	○	○
The character's situation reminded me of situations I lived in the past	○	○	○	○	○

The character's situation made me recall past experiences of/with other people or things	○	○	○	○	○
While reading the story, I recognized aspects of myself in the characters	○	○	○	○	○
The story mood brought me past memories	○	○	○	○	○
While reading the story, I often compared aspects of my life with aspects of the life of the characters	○	○	○	○	○
This text reminded me of how my past is still with me	○	○	○	○	○

Other emotions measure

Please rate how much you felt the following emotions while reading:

	Not at all	A little bit	Somewhat	Quite a lot	Very much
Anger	○	○	○	○	○
Sadness	○	○	○	○	○
Happiness	○	○	○	○	○
Disgust	○	○	○	○	○
Surprise	○	○	○	○	○
Fear	○	○	○	○	○
Boredom	○	○	○	○	○

Familiarity with outcome measure

Where you familiar with the outcome of the story from before?

○ Yes

○ No