

MASTER THESIS

**The influence of information integration in written short stories on information recall among young adults**

Author:

**Leon van den Berg**

Supervisor:

Linda Effinger MSc, Jonas Pastoor MSc

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# Declaration of Authorship

I, Leon van den Berg, declare that this thesis titled, “The influence of narratives on eating habits of young adults” and the work presented are my own. I confirm that:

* This work was done wholly or mainly while in candidature for a research degree at this University.
* Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated.
* Where I have consulted the published work of others, this is always clearly attributed.
* Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work.
* I have acknowledged all main sources of help.
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*“This research has taught me not only the effects of narratives on young adults, but taught me about independency, planning, discipline, and the risks involved.”*

**Leon van den Berg**

Breda University of Applied Sciences

# Abstract

Academy for AI, Games and Media

Master of Game Technology

**The influence of information integration in written short stories on information recall among young adults**

By Leon van den Berg

People use stories to teach ethics, values, or other lessons. This research measures the effect of different levels of message integration in short stories on recall of information for young adults. The theoretical framework and literature review concentrate on narrative influence, with narrative transportation, identification, personal relevance, and Systematic Message Processing as core measurements. However, it also reveals lack of empirical evidence within the Entertainment-Education Strategy which is part of the field of communication. The aim of this research is to support the development of educational material for young adult through gathering empirical evidence. This thesis adopts a quantitative methodology. An online survey was conducted with 29 participants, divided into three groups. Each group was exposed to a different health topic stimulus related to Chlamydia: a fact sheet, a low-integration story, or a high-integration story. ANOVA and correlation tests were used to analyse the data in SPSS. The results were compared with findings from relevant literature to provide additional context in order to answer the research questions posed in this thesis. The findings indicate that short stories with highly integrated messages increase recall in this experiment (p = 0.005). Further research is needed to confirm the results in reference to applicability.

**Categories:** psychology, creative writing, narrative pedagogy

**Keywords:** Adult learner theory, Message processing, Communication Theory, Entertainment-Education

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# List of Abbreviations

* A = Arithmetic mean, average. All numbers counted up and divided by the amount of instances.
* CFA = Confirmatory Factor Analysis. A statistical technique used to test whether the data fit a hypothesized measurement model.
* CFI = Comparative Fit Index. an incremental (or comparative) fit index that assesses how well a hypothesized model fits the observed data relative to a “null” or baseline model in which all variables are assumed uncorrelated. CFI values range from 0 to 1, with higher values (commonly ≥ .95) indicating better fit.
* EE = Entertainment-education.
* M = Median. The middle number.
* SD = standard deviation.
* p = p-value; probability value. Helps to determine whether the results of a study are significant with 0.05 as a threshold.
* F = Fisher-statistic; the ratio of two variances (or mean squares), comparing explained variance to unexplained variance in analyses such as ANOVA.
* N = number of participants.
* α = Cronbach’s alpha. A reliability coefficient and a measure of the internal consistency of tests and measures.
* SRMR = Standardized Root Mean Square Residual. An absolute index of model fit in structural equation modelling (SEM) and confirmatory factor analysis (CFA) and quantifies the standardized average discrepancy between observed and model-implied correlations, ranging from 0 (perfect fit) to 1 (poor fit), with values below .08 generally indicating acceptable fit.
* r = correlation coefficient. Measures strength of relationship between two variables from -1 to +1 in which 0 is no correlation and +1 is perfect positive correlation.
* a.k.a. = also known as.
* MD = Mean Difference.
* ANOVA = analyse of variance.
* SEM = structural equation modelling.

# List of Terminology

In alphabetical order:

* Audience involvement = the degree to which audience members engage in reflection upon, and parasocial interaction with, certain media programs, thus resulting in overt behaviour change. (Sood, 2002)
* Case study = a particular instance of something used or analysed in order to illustrate a thesis or principle.(The Oxford Pocket Dictionary of Current English, 2025)
* Identification = an imaginative process invoked as a response to characters presented within mediated texts.(Cohen, 2001)
* K-12 = In this thesis we define this as an expression to refer to children from kindergarten to 12th grade based on the American school system. They are in this at age 3 or 4 till age of 17 or 18 years.
* Learning = the activity of obtaining knowledge (Cambridge University Press, 2024)​​.
* Narrative = A collection of stories (Halverson et al., 2011)
* Narrative dominance = the proclivity to give cognitive priority to narrative content when processing messages. (Quintero Johnson et al., 2012)
* Narrative transportation = the phenomenological experience of being cognitively and emotionally involved in the unfolding events of a story.(Quintero Johnson et al., 2012)
* Pedagogy = the art, science, or profession of teaching.(Merriam-webster, 2025)
* Plot = For the purpose of this paper, we define it as a sequence of related events in a story.
* Prose = written or spoken language in its ordinary form without metrical structure. (WordReference Random House Unabridged Dictionary of American English, 2025)
* Recall = In this thesis this is defined as the ability of an audience member to remember information shortly after it is presented to them.
* Retention = In this thesis this is defined as the ability of an audience member to remember information presented to them after a period of time.
* Story = In this thesis this is defined as an account of one or more events.
* Short story = In this thesis this is defined as a story between 1000 and 5000 words.
* Storytelling = In this thesis this is defined as the verbal telling of a story contradictory to the general accepted definition of the writing and telling of stories, not including visuals (Oxford Learner’s Dictionaries, 2024)​​ in order to be more specific.
* Systematic Message Processing = An effortful mode of processing characterized by careful attention to and scrutiny of the claims made in a persuasive text. (Quintero Johnson et al., 2012)
* Young adults = In this thesis this is defined as humans between the age of 18 and 25.

# Chapter 1: Introduction

Short stories can be an effective teaching method as they give context, allowing the information to be remembered for longer (McNett, 2016). The effectiveness of the recall of the information within a story can be influenced by several factors, including but not limited to: Personal relevance, Systematic Information Processing, Identification, Audience Involvement, Narrative Transportation, Audience Evaluation, and Integration of the message in the story (Quintero Johnson et al., 2012). The study of these factors falls within the field of Entertainment-Education (EE).

The EE field explores how entertainment media can be used to educate audiences effectively (Moyer-Gusé, 2008)​. While there has been research on the effects and benefits of storytelling in formal educational settings (McNett, 2016), there is a lack of research on the effect recall of information contained in short stories on young adults outside of classroom environments. This gap presents the opportunity for this study to investigate the mechanisms behind message retention and how stories can be optimized for informal educational purposes.

This thesis aims to contribute to the discovery of the effective levels of message integration in short stories needed for optimizing information recall in young adults, with the goal of producing insights that are applicable beyond formal education contexts.   This research focuses on learning done outside of a classroom setting, as this is the learning done by a majority of the population, thus maximizing the societal benefit of this study. Due to this the focus lies more on the quality of the story itself, rather than the communication between two readers.

Multiple fiction writers have attempted to teach an informal audience through narrative, but the measurable influence of those stories is not researched to the extent that authors attempting to do the same could benefit from the findings. In this context, an informal audience refers to individuals that are not part of a formal learning environment such as a classroom, and do not necessarily intend to learn. Examples of such works include: “Sophie’s World” teaching philosophy (Gaarder, 1991), “The Richest Man of Babylon” teaching finances (Clason, 1926), “Theo’s Odyssey” teaching religion (Clement, 1999), and “The goal” teaching management (Goldratt, 2014). There are also multiple examples of animated TV-shows in this area including: “Avatar: The Last Airbender”(DiMartino & Konietzko, 2005), “How a realist hero rebuilt the kingdom” (Dojyomaru, 2021), “Cells at Work” (Suzuki, 2018), and “Dr Stone” (Iino & Inagaki, 2019). The latter three are Japanese adaptations. The fact that they are adaptations could be used for future studies where a comparative analysis can be done.   
The fact that they are Japanese, means there are different cultural standards as well, cultural standards and acceptance also affect learning. There is a lack of research in terms of their pedagogical effectiveness and therefore it is currently still unknown how to improve fictional stories to teach information to an informal audience. Aaron Ehasz, lead writer on “Avatar: The Last Airbender”, noted that a connection between the audience and the character should established first and only then make the characters interact with the moral of the story (van den Berg, 2024). He also specified that people learn through the motivation of the character related to the moral of the story instead of through the moral of the story itself which can be read in Appendix A (van den Berg, 2024). While prior studies have demonstrated some effects of audience involvement, personal relevance, and message integration on learning from stories (Quintero Johnson et al., 2012), further research is needed in other areas related to stories and their factors, including emotional language, writing style, setting, sentence structure, genre, dialogue, and descriptive techniques, as well as research to better the understanding of areas already studied. Research on these literary and stylistic factors could help further refine stories as a pedagogical method.

By pushing this field forward, researchers can get closer to finding effective methods of teaching an audience through fiction. The entertainment-education strategy field is mostly focused on providing health information in an entertaining way in the hope that people can learn while not being focused on learning actively (Quintero Johnson et al., 2012). Short stories in particular are an accessible method to learn new information as they require little time commitment, therefore it facilitates learning about important topics for busy audiences. By further understanding this interdisciplinary field we can better understand how stories influence learning and memory, therefore contributing to other fields, such as educational game design, interactive narrative studies, and other creative industries.

Overall, the field of Entertainment-Education strategy shows potential for increasing information retention. This study aims to contribute to the field by both improving the current methodology used to test these factors, as well as aid in defining how specific engagement-related factors can be used more effectively to improve information recall. This study focuses on young adults as they have an increased resistance to persuasion, compared to children, yet still have developing brains (Quintero Johnson et al., 2012). The central hypothesis of this thesis is that highly integrated messages in short stories are more effective in creating recall of information than low integrated messages in short stories. The confirmation or rejection of this hypothesis would help in solving the problem of creating effective stories that can aid in teaching young adults.

# Chapter 2: Literature review

## 2.1 Introduction

The use of short stories as an educational tool has garnered increased attention over the past decade, particularly within the field of Entertainment-Education (EE), as evidenced by the growing body of related scholarly publications such as (Dudley et al., 2023;Clason, 1926); Hursting & Comello, 2021). This field explores how narrative media can be used to convey educational messages effectively.

This chapter reviews the theoretical background and models, as well as empirical findings relevant to the use of short stories for enhancing information recall among young adults. It examines key cognitive and narrative factors shown to influence learning outcomes, including narrative transportation, character identification, personal relevance, systematic message processing, audience evaluation, and message integration. Understanding the interplay between these elements could be essential for optimizing storytelling techniques that support informal education and increase long-term retention of information.

## 2.2 What is Entertainment-Education?

Entertainment–education (EE) is an interdisciplinary field that intentionally designs and implements educational content in entertainment media to increase or change audience members’ awareness, knowledge, attitude, norms, and behaviors (Singhal & Rogers, 2002; Moyer-Gusé, 2008). The start of the field of EE can be traced back to Bandura’s social cognitive theory which provides strong evidence that learning skills by viewing models similar to oneself is more likely to increase self-efficacy and willingness to attempt the behavior than when less similar models are viewed (Bandura & Cervone, 1986). A variety of studies have shown that information contained in fictional messages can influence beliefs (Prentice et al., 1997; (Slater, 1990; Christian Wheeler et al., 1999; Green & Brock, 2000; Strange & Leung, 1999). EE focuses on developing effective methods to integrate educational content into entertainment media to facilitate learning and influence behavioral change in the audience, for example, by providing role models to the audience (Singhal & Rogers, 2002). Entertainment–education has also been found to be an important agent of social change by the use of persuasive design (Singhal & Rogers, 2012). The entertainment-education strategy, sometimes referred to as entertainment-education programming, is a collection of research backed recommendations about how to integrate learning and information into entertainment media such as stories and movies designed to address both pro and counter-attitudinal audience members (M. D. Slater & Rouner, 2002). It is also referred to as a communication strategy used to disseminate ideas to bring about behavioral and social change or infuse entertaining stories with important health information (Quintero Johnson et al., 2012; Singhal & Rogers, 2002). Despite EE being referred to as a strategy, it is such a broad, encompassing field that the borders are diluted and ill-defined. Some scholars argue that any entertainment containing embedded prosocial messages can be seen as EE (Moyer-Gusé, 2008). Many media productions may unintentionally educate audiences or alter their behavior. For example, the show ‘16 and Pregnant’ in the U.S. was associated with influence on teen pregnancy rates (Kearney & Levine, 2014). However, the majority of EE scholars differentiate themselves by being theory-driven and using theories from overlapping fields to create media to intentionally influence specific beliefs and behavior of an audience towards a specific topic. The field of EE overlaps with and draws theories from various fields such as: communications, psychology, pedagogy, education, sociology, and media studies. Entertainment-education is considered a field of study from an academic lens, but often referred to as a strategy or programming from a practical lens.

The effectiveness of messages embedded in media in order to raise awareness, increase knowledge, or influence behavior depends on various psychological, social, and narrative factors. Understanding these factors is crucial, not only for creators aiming to design impactful EE inventions, but also for helping media creators, non-governmental organizations, and governments to identify and critically assess both intentional and unintentional messaging in media, as well as to predict the consequences in behavioral change and beliefs of the audience. An example of negative consequences are the soap operas in Brazil with independent female characters with few, or even no children that was linked to a drop in fertility rates (Ferrara et al., 2012). Certain portrayals also legitimize, glamorize, and trivialize human violence (Bandura, 2001, p. 277), which can have harmful effect. These negative messages complicate the work of EE interventions, as they must compete with and counteract opposing existing narratives (Singhal & Rogers, 2002). This is because observing others’ behavior also allows individuals to acquire not only behavioral patterns but also a cognitive framework for interpreting what these behaviors mean (Bandura. A, 1971; Bandura & Cervone, 1986; Bandura et al., 1963). The harmful effects of media become an increasing concern as never before in history has so much entertainment been so readily accessible to so many people for so much of their time (Zillmann & Vorderer, 2000;Postman, 2011). Not only does the public consume more entertainment, it is becoming a more integral part of people’s daily lives (Singhal & Rogers, 2002). Therefore, the rising tide of entertainment in people’s personal lives and different economy sectors has been labeled as the “entertainmentization” of the world (Wolf, 1999). Entertainment products and services represent the fastest growing sector of the world economy (Singhal & Rogers, 2002). Despite the ubiquity and growing importance of entertainment in society, which usually involves some type of human communication, communication scholars have largely neglected to give the entertainment function much attention (Katz & Foulkes, 1962); Sutton-Smith, 1988). Many perceive entertainment as frivolous in content and unimportant in its effects, mainly amounting to taking up large amounts of the daily time of individuals, but not representing an important force for human behavior change. (Singhal, 2002). The results of EE have been implemented in many forms such as; TV dramas (Miguel sabido), radio serials (Vaughan and others 2000), short stories (quintero johnson), and games like SPARX (SOURCE). Entertainment-Education games are often referred to as serious games or educational games. Overall, the EE field is also referred to as edutainment media. EE inventions do not only consist of social cognitive theory, but also social learning, the elaboration likelyhood model, audience involvement, dramatic theories, social constructivism, uses and gratifications, knowledge-gap, cultivations, and more. (signhal 2002)

The main method by which EE teaches messaging is through role modeling through characters. Characters can be positive models, negative models, or transitional characters. A narrative or story format can help motivate change in the audience by showing positive role models who experience “rewards” and negative role models who are “punished” (Slater & Rouner, 2002; Bandura, 2004). Audience members sympFeathetic to the viewpoints espoused by the entertainment-education programming are addressed by characters modeling desired behaviors and associated skills, with the desire to increase self-efficacy and the likelihood of enacting behaviors (slater 2002). Initially unsympathetic audience members are typically addressed through the use of transitional characters, who initially espouse counterattitudinal beliefs but model the process of attitude and behavior change, as well as negative role models who experience undesired consequences (Singhal & Rogers, 1999; Sabido 2002). A risk with this is the Archie Bunker effect, defined as the degree to which certain audience members identify with negative role models in EE interventions (Singhal & Rogers, 1999). This effect could lead to reinforcing rather than reducing racial and ethnic prejudice among certain highly prejudiced viewers. Narratives using constructs such as role models from EE correctly can help guide audience members through a change process, including developing confidence in their own abilities (self-efficacy) through association with desirable characters, and can facilitate behavior change. (World bank, 2015)

While many EE programs exist, there is a lack of empirical evidence in EE (Slater 2002). Consequently, there is a need for quantitative methodological exploration, especially with randomized controlled trials as well as detailed information on how audiences process narrative messages (Slater 2002; World bank 2015). Further investigation is also required to identify the conditions that enhance EE message effectiveness such as audience involvement (Johnson et al., 2012; Moyer-Gusé, 2008). EE researchers increasingly recognize the importance of robust measures to assess an audience member’s degree of exposure to EE interventions as nonaudience members can also be affected through interpersonal communication with audience members (Hornik, Gandy, Wray, & Stryker, 2000). On the other hand, Singal (2002) argues that research into the effects of EE should consider employing a broader understanding of individual, group, and social-level changes and be more receptive to methodological pluralism and measurement ingenuity. He further suggests that theoretical investigations employing narrative theory could illuminate why certain narratives are perceived as more coherent, believable, and involving than others, as well as how a narrative’s rhetorical influence is mediated by factors such as medium, genre, broadcast frequency, and length (Singhal, 2002). This gap underscores the fact that most EE research has concentrated on formats such as television dramas, soap operas (World Bank, 2015), and radio broadcasts (Singhal, 2002), leaving other forms, such as short stories, novels, and video games relatively underexplored. Previous EE research has mainly been conducted in developing countries and dealt with health topics (Singhal, 2002), therefore creating opportunities to also develop EE for developed countries whose population might consume a different amounts and types of media.

Moreover, it remains unknown whether different types of EE interventions are more effective for achieving different behavior‐change objectives (Singhal, 2002). Although EE programs inherently engage affective and emotional aspects of human communication (Papa et al., 2000; Rogers et al., 1999), theoretical investigations have often dismissed emotions as unimportant, viewing them as internal, irrational, or uncontrollable phenomena (Planalp, 1999). To address this oversight, scholars have advocated researching the pleasures derived from conflict‐laden and suspenseful drama, including whether witnessing a favorite character in imminent danger enhances enjoyment and engagement (Zillman & Vorderer, 2000). Some researchers recommend that EE investigations focus explicitly on the communication of affect, feelings, and emotions from media characters to audience members (Singhal, 2002). By addressing these methodological and theoretical gaps, future EE research can more effectively determine which interventions work best under varying conditions. It is also emphasized that EE scholars should focus on rhetorical approaches to understanding narratives, such as Walter Fisher’s narrative theory (1987), in order to gain an enhanced understanding of the persuasive power of narratives (Singhal 2002). Some EE investigations have gone beyond studying individual-level behavioral changes to investigate EE instigated changes at the community level (Papa et al., 2000; Bernard and others 2014), however this is beyond the scope of this thesis.

## 2.3 Learning through stories

Stories have been effective in teaching certain subject matters as they provide a context to place a problem or piece of information in, which aids memory retention (McNett, 2016). They represent a fundamental way by which we interpret our experiences by leading us to seek out patterns and allow us to simulate events as well as to connect to events, therefore giving us meaning to what we experience (Mcnett, 2016). Humans have a natural craving for social information (Mcnett, 2016).

Stories are also widely used in formal education settings, such as law, medicine, economics, English as a second language, history, chemistry, mathematics, and biology, most often in the form of case studies (Murali Krishna & Sandhya, 2015; McNett 2016). Although case studies have demonstrated pedagogical benefits, the evidence is largely anecdotal, and their precise impact remains understudied (McNett, 2016). The application in informal learning environments also remain underexplored. A reason that stories can be effective is because people think in stories and therefore when recall of information falters, they will fill in the gaps based on the story structure (Mandler and Johnson , 1977). Memory and retrieval processes for information contained in narrative have been found efficient (Mandler & Johnson, 1980). Stories also can make messages more relevant and accessible: people are often predisposed to remember stories rather than facts, concepts, relations, and theories (McNett). As concrete, specific scenarios, stories serve as memory hooks for otherwise abstract content. Narratives contextualizes abstract concepts and provides a scaffold for the transfer of knowledge within specific contexts and environments (Fiore et al., 2007). Yet another reason that stories are useful for teaching is that our brains can simulate events without us experiencing them directly, yet still feel emotionally connected to those simulated experiences (Gottschall 2012; Mar & Oatley, 2008). This also means when we see ourselves in others(Mcnett, 2016). The shock or surprise that stories provide can also initiate an unconscious search for new associations, new ideas, or a new framework (Mcnett, 2016)

Some scholars take it even further by saying that stories define who we are and that it is used to craft our sense of self (Rosenwald and Ochberg 1992; Boyd). Some scholars argue that meaning making is a narrative process as our daily experiences are made sense by storying them and constructing narratives to make things cohere (clarke). It is mentioned that narratives is a way to also conceptualize the learning process (Clark & Rossiter, 2008).

Gottschall (2012) suggests that stories act as cognitive simulators that help us practice without consequence navigating human and social life. This is supported by McNett who claims they allow us to simulate social experiences. Slater (2002) also mentions that human beings are social information processors before they are processors of facts, figures, and logical arguments. However, a danger of using stories to teach however is story bias. “Story bias implies that a single story may be unrepresentative of broader trends, relationships, concepts, or populations the story is meant to represent.” (McNett). Therefore, it might be better to explain a topic by focussing on a single person and his struggles rather than an event in the broad sense(Mcnett)

In order to learn through stories there have been identified 4 main storytelling methods (McNett; Andrew 2009):

1. Case-based instruction. These are full narratives with a fixed problem and solution where the a concrete scenario is presented for the audience to analyze and interpret. It grounds abstract principles in concrete examples. This type of instruction has been used in professional programs for Law, Business, and medicine. It is also the most common mode of narrative learning (Lynn, 1999; Tomey, 2003).
2. Narrative-based instruction. the problem and solution in the story are predetermined, and the student is placed within the context of the story and given control of information. The goal with narrative-based instruction is to entertain students and engage them emotionally.
3. Scenario-based instruction. Stories involve an interactive experience with a variety of solutions. Solutions have ﬁxed criteria or objectives, but are not themselves ﬁxed. The learner is situated within the story.
4. Problem-based instruction. In this type of instruction the problem is inherent in the story provided to the students, but the solution is not provided in advance. Students interact with the problem to gain a better understanding of the issues and problem described.

However, some scholars express that a story’s utility for learning is maximized when 3 elements are included; a contextual introduction, a challenge, or some form of dissonance, and a climax, or final lesson (Lordly, 2007).

Short stories in particular have been used in eductional settings as they are approachable and easy to use as they do not consume a lot of time (mcNett). In many educational settings when there is talked about the use of stories as method for teaching, they often refer to storytelling (McNett, 2016). Storytelling refers to the activity of telling or writing stories (Oxford Learner’s Dictionaries, 2024). A large amount of conclusions in the field of Entertainment-Education Strategy refers to the fact that verbal communication of stories is effective as the discussion allows for deeper understanding, yet fail to examine the written stimulus separately to determine its effect on learning(McNett, 2016).

In this thesis will focus particularly on the format of short stories. When talking about short stories it is important to note that short stories often focus more on mood rather than plot (Merriam-Webster, 2024), therefore cannot be properly compared in teaching compared to a novel. Short stories are a great way to increase learning as it can be easily used inside of a education setting. However, outside of a classroom it is often much more inaccessible as public libraries are mostly novels. Written prose short stories are great for learning as they are accessible to read since they can be read in one sitting and there is low amount of delayed gratification. They do not require a long attention span and a lot of context. Short stories are also found to be the most suitable authentic literary genre to teach and improve learner’s communicative competencies easily and effectively (Murali Krishna & Sandhya, 2015). This also brings fairy tales and folklore into scope, but as they are not aimed towards young adults and focus also on poetry more than prose, this is not considered within the scope of this thesis.

## 2.4 Young adult learning & Cognitive resistance

Teaching adults through stories is a relatively new concept (clark 2008). Young adults learn differently compared to other age groups, primarily due to their stage of cognitive development. (arain 2013). Although the brains of young adults are still undergoing development, they have reached a more advanced stage compared to those of children (arain 2013). Young adults tend to engage more actively in applying critical thinking compared to younger children, therefore learning process for young adults often becomes more prolonged and complex compared to younger children. This phenomenon is called Persuasive resistance. This phenomenon suggests that the more knowledgeable an audience is, the greater their resistance to persuasion. Persuasive resistance among young adults occurs because the process of teaching inherently involves persuading learners to accept new information as true. It is part of Adult Learning Theory to see how we can overcome persuasive resistance to make adults learn faster and easier. One result that was found was that people cannot be deeply involved in a story and simultaneously make evaluative judgements about the information presented (Busselle & Bilandzic, 2009). This is because such evaluations require cognitive resources that are being spend on the involvement. This also leads to the effect where people who are involved with a story unintentionally accept the information in the story as true (Quintero Johnson et al., 2012; Gilbert 1991). However, when the engagement in the narrative becomes too high, it can also lower information recall due to narrative dominance, where the narrative overshadows the message in the story(quintero johnson).

The EE strategy is often seen as a compelling form of persuasion because the narrative structure used in EE messages limits the motivation and ability to criticize persuasive health claims made in those messages (Slater & Rouner, 2002). As the sufficiency principle suggests, when entertainment is the chief goal, individuals will likely attempt to minimize cognitive efforts aimed at other, less important goals such as becoming educated about a particular health issue (Chen & Chaiken, 1999). However, theoretical investigations of EE should acknowledge that entertainment-education is only one of many competing, and conflicting, discourses that exist in a given message environment. Entertainment-education messages face competition from, and are resisted by, various other media discourses, which are often of the “entertainment-degradation” or “entertainment-perversion” type which valorize lewdness, sexual irresponsibility, greed, and other antisocial messages (singhal 2002). Resistance also operates at the message reception end as audience members selectively expose themselves to EE messages, perceive them, recall them, and use them for purposes they value (singhal 2002). Still, EE studies the mechanism that lower cognitive resistance.

## 2.5 Key Mechanisms that Influence Recall in Written Short Stories

As mentioned before there is a variety of factors that influence the recall and retention of stories. A While learning is a very broad concept and thus difficult to measure, retention and recall of information can be measured. EE scholars draw on narrative persuasion research and cognitive psychology measurements as components to identify how to create better EE inventions. One key term in this is Audience involvement. Audience involvement refers to the cognitive and emotional engagement of audience members with the story(johnson). There are multiple mechanisms that influence audience involvement and therefore also information recall.

### 2.5.1 Narrative transportation

Transportation, as used in in the EE field which is also called ‘narrative transportation’, occurs when an individual becomes emotionally and cognitively absorbed in a story(Green & Brock, 2000). This type of engagement can enhance the persuasive impact of the narrative, potentially leading individuals to accept embedded messages without critical evaluation (Green & Brock, 2000;Green, 2004). High transportation is characterized by loss of self-awareness and psychological distance from reality. It can even cause demonstratable belief changes(Green, 2004). Similar research also states that narrative transportation has led to persuasion through reduced cognitive responding therefore lowering cognitive resistance (Green & Brock, 2000). This leads to the effect that presented facts are faster accepted. However, if the transportation is too high, narrative dominance can occur and therefore lowering the recall of embedded information (Quintero Johnson et al., 2012). See figure 2.1. Narrative dominance is defined as a principle that states that the comprehension of narrative takes priority over the understanding of educational content when the two are presented together(Fisch, 2000). However, the division of participants into either high or low recall and therefore using the approach of dichotomization does not allow for an average recall. Therefore, this should be validated again with the use of Standard Deviation-Based Grouping.

Figure 2.1: Relation between transportation and recall. The red line showing SD.

Research also suggests that the degree of transportation experienced by audiences can be influenced by environmental factors such as friends (Seo et al., 2018). However more empirical research is needed to determine the extent of the effect on the relation between the story giver and receiver affects transportation. Two key conditions that have been found that influence interest of the story line are: the individual’s intrinsic interest in the genre of story and in the quality of the narrative (slater 2002). Narrative transportation can be evoked through comprehension fluency and imagery fluency (Huang et al., 2018).

The relationship between transportation and familiarity with the message topic should also be researched further. It has been found that knowledge about and experience with a message topic enhanced participants’ reports of transportation into a story featuring that topic (Green, 2004).

Research has found no significant difference in transportation between high and low integrated messages (Quintero Johnson et al., 2012). see figure 2.2; Relation between message integration and transportation. However, the same research has found that the participant’s sex has significant effect on the level of transportation that is experienced, wherein men had significantly higher levels of transportation by stories than woman. These findings also appeared to be not related to the sex of the main character. This conflicts with other research where woman reported greater transportation than men in some cases while disappearing in other cases, therefore concluding that transportation may not be affected by gender (Green & Brock, 2000). However, this also could mean that another factor within the story could cause for higher or lower transportation for a certain gender, but more empirical data is needed for this.

Figure 2.2: Relation between message integration and transportation.

While research in narrative transportation has been done, there is a lack of empirical data on the effects of narrative transportation on embedded message recall and retention.

Van Laer (Van Laer et al., 2014) identified three key elements required to activate narrative transportation:

1. The need for story-receivers to process and interpret the meaning of the story.
2. The role of empathy and mental imagery in fostering transportation.
3. The immersion-induced loss of awareness of physical surroundings.

### 2.5.2. Identification

Identification is described as the experience of taking on the perspective of a story character and replacing one’s own identity with the character’s identity (Cohen, 2001). This experience of identification with story characters is characterized by the experience of feeling the character’s emotions and adopting his or her goals and motivations. it involves a temporary loss of self and adoption of the character’s perspective. While being similar to a parasocial relationship, it is not the same (frank 2015; Moyer-guse 2008). However, there are arguments that stories and identity are linked (McAdams 1985)

While research has been conducted on Experiential Involvement in relation to recall of information, see figure 2.3, there is a lack of data that suggests a relationship between Identification and information recall (Quintero Johnson et al., 2012). Due to the fact that identification is part of experiential involvement and has shown a negative correlation, it can be presumed that identification will show a negative correlation to recall. However, it is possible that only transportation, the other part of Experiential involvement, lowers recall and identification is not affected.

Figure 2.3: Relation between recall and Experiential involvement.

There is also a relation between message integration and identification where people who read a low integrated message had higher identification than people who read a high integrated message, as shown in figure 4 (Quintero Johnson et al., 2012).

Figure 2.4: Message integration and identification

Another important find was the relationship between identification and sex, referring to biological gender. A study found that men reported higher levels of identification than did women and that these findings do not appear to the result of the sex of the main character (Quintero Johnson et al., 2012).

According to Ehasz (2024), creating empathy for characters is important in orders for viewers to connect to the characters and only after that connection is established should the character interact with the moral of the story (Ehasz 2024). Ehasz says that in order to teach, it is not about the moral of the story, but about the character motivation and drive related to the moral.

### 2.5.3. Personal relevance & Systematic Message Processing

Personal relevance also influences message processing and recall (Petty & Cacioppo, 1979). This means the degree to which someone believes that a message topic is relevant to their own lives(Johnson, 2012). Thus, a story is highly relevant if a character’s struggles closely mirror a person’s owns current experiences. High relevance has been associated with more active evaluation of message claims and a lower likelihood of passive acceptance, which can lead to lower recall (Johnson, 2012). One explanation is that deeper processing of content could distract individuals from memorizing specific details, thus lowering recall (Johnson, 2012). However, McNett (2016) argues that stories are most effective when they are tied to the personal experiences of learners. This is supported by claims that learning in adulthood is integrally related to lived experience (Lindeman, 1926; Clark, 2008). According to the Extended Elaboration Likelihood Model (E-ELM), the personal relevance of a story influences audience involvement rather than the degree of critical scrutiny of persuasive claims in the story (Slater & Rouner, 2002).When something is personal relevant, individuals are more easily persuaded by strong arguments, whereas less relevant content leads participants to be more persuaded by how likable the character is (Chaiken, 1980). Therefore, when people care about a topic, they process information more critically.

Systematic Message Processing(SMP), also known outside EE as Systematic Information Processing, is part of the Heuristic-Systemic Model in which systematic processing a slow, but accurate process while heuristic processing is faster using judgmental shortcuts (Chaiken, 2012). High systematic processing has been correlated with lower information recall (johnson 2012). Higher SMP was also correlated with high personal relevance (johnson 2012). Personal relevance might encourage deeper processing of a message. Thus personal relevance might correlate to lower information recall.

### 2.5.4. Message integration

Message integration refers to how seamlessly educational content is woven into the narrative(Quintero Johnson et al., 2012). High-integration messages are those where the health information is woven seamlessly into the storyline and character experiences. Low-integration messages present information in a way that is not related to the main narrative. High-integration messages have been found to enhance recall compared to low-integration messages(Quintero Johnson et al., 2012). This I mostly due to the fact that when there is increased distance between the educational and narrative content the two types of content must compete for working memory resources, and the narrative generally wins (Fisch, 2000). However, low-integration messages may foster greater emotional involvement, audience involvement and identification with characters (Quintero Johnson et al., 2012)**.** According to (Dudley et al., 2023) whether narrative or didactic messaging is most effective depends on the topic, audience, and objective, as well as message quality. However, they also suggest that a combination of the two is most likely to be more effective than either strategy alone. Another important note to consider is that there have no significant differences been found between information recall between high-integration and the educational content–only messages(Quintero Johnson et al., 2012). From this it can be extrapolated that stories with well-integrated stories are not better than fact sheets when it comes to recall. It has to be considered that this test was done on short stories, therefore there is still a lot unknown about different lengths of stories and its effect on recall. There are still a lot of unknowns regarding message integration, such as its effect on retention.

As seen in the literature there is need for more empirical evidence. This brings us to our research question:

Between high integrated and low integrated information in short stories, which one is more effective at recalling specific information in young adults?

## 2.6 Ethical considerations

Because the field focuses on messaging through stories and increasing the effect it has on the audience, ethical considerations must be taken into account. It is possible that this field and its findings can be abused for the uses of propaganda and harmful marketing. It has the potential to be used for manipulation and misinformation. However, it can be argued that by investigating the factors that influence messaging and how they influence, regulations and laws can be made more effectively to protect an audience related to certain topics. However, for this reason, this study will steer away from the attempt to change ideologies, morals, and beliefs. This study will attempt to ensure the story used in the methodology presents information in a balanced way to not unintentionally manipulate an audience.

Another consideration is the duration of the effect of messaging. There is a lack of studies that provide insight into the effects of messaging through stories over a long period of time. Therefore, it cannot be known if this can show negative effects over time. As the intent of the story used in this study is to educate about health, the risk of this is considered minimal.

A third consideration is emotional response to the story in relation to the messages. According to (McNett, 2016) “A good story is one that makes an emotional connection.” Thus, it can be argued that the emotional response that the story creates might cause distress for the audience beyond what is intended. Therefore, extra care will be taken to ensure that the emotional response from the story will not have impact on the participants of the study more than the messages within the story. Therefore, precautions will be taken to ensure that participants’ emotional responses to the narrative do not impact them negatively.

An additional ethical consideration is the potential impact of this study on the professional reputation of Quintero-Johnson, whose earlier research this thesis builds upon. As a continuation study, the findings of this thesis may be perceived as either supporting or contradicting their work. Any misinterpretation or oversimplification of her research could inadvertently reflect on her academic integrity, especially given the visibility and potential policy implications of research into entertainment-education. For this reason, great care will be taken to accurately represent the aims, methods, and conclusions of the original study, ensuring that this thesis engages with her work respectfully and precisely. While every effort will be made to represent her work accurately, critically, and respectfully, it is also essential to acknowledge that the pursuit of scientific truth must take precedence over the protection of individual reputations. Should this study uncover methodological flaws or conflicting results that challenge the validity of Quintero-Johnson's findings, these outcomes will still be reported transparently and objectively. Suppressing or distorting such findings would undermine the integrity of the scientific process. Nevertheless, when drawing comparisons or critiques, the discussion will be carefully framed in context within broader scholarly discourse to avoid personal attribution of scientific limitations and recognizing the iterative and self-correcting nature of research. This aligns with ethical scholarly practice, which obligates researchers to avoid causing reputational harm through misrepresentation or undue criticism of prior work.

# Chapter 3: Methodology

## 3.1 Type of study

To empirically test our conceptual model and support our previously mentioned hypothesis, this thesis deploys an empirical quantitative methodology to address and research its data. The goal of using this method is to be as objective as possible, to minimize the impact of faulty human judgement (Lankoski, 2015). We will use an online survey tool to extract the data.

A quantitative method has been applied over qualitative, because we are interested in the relation and extension itself rather than why it is the way it is. We will test our hypothesis with the data we gather. To execute this methodology, we use a survey in combination with a story as stimulus.

This is a near replication study of Johnson’s study(Quintero Johnson et al., 2012) and is therefore defined as a continuation study. This study differs from Johnson's study in the following ways:

* Target audience. Johnson got participants from all from the lower division communication courses at a large Midwestern university in the USA. In private email messages Johnson has confirmed to the researcher that all participants were undergrad students from her own class and other communication classes which were gathered through in-class announcements and emails. The participants were also incentivized with extra credits. The study also took place in person on school grounds with pen and paper surveys. Our study will use an online survey and internationalize the participants by looking for participants on online forums instead of focusing on a single school. This way the data is less prone to culture bias. This approach to participant recruitment also fostered learning in non-classroom environments. Due to the large variety in participants’ backgrounds there will also be different educational levels and thus this can lead to new conclusions. For this study there is no extra incentive given to the participants.
* Transparency. Most of the tools used, including the stimulus, are undeclared in Johnson’s study. Therefore, it cannot be properly replicated. We attempt to fill this gap to create a higher validity and transparency which allows for a more reliable foundation of building blocks for future researchers.
* Learning questions. We ask if the participant has the feeling of learning while partaking in the study in order to see if and how it affects learning.
* Less Systematic Message Processing questions. Due to technical limitations, we were unable to ask the same amount of questions regarding SMP to the participants as previously done.
* Rephrasing certain questions. Certain questions were found to be unclear during the pilot study and therefore have been rephrased for clarity. The exact changes are defined in the section “Survey Creation Process & Measurements” in this thesis.
* Follow up retention questions. This study asks participants after an interval of two weeks the same retention questions that are asked before, to check whether or not the information was retained.

## 3.2 Participants

**Requirements**

The main requirement for participants is that the age of the participants must be between 18 and 25 years old. This includes 18 and 25 as well. The age of 18 has been chosen as this is the borderline where participants qualify as legal adults and therefore do not require extra parental consent forms for data collection. The age of 25 has been chosen as this is the point where most brain rewiring stops (Arain et al., 2013), making up to that point most valuable to teach. The second requirement is that the participants must be fluent in English. The third requirement is that the participants must have internet access through a computer or phone in order to interact with the survey and stimulus.

**Gathering**

The focus when gathering participants was on social media with an added focus on book reading communities as well as writer communities and reading communities. The locations where participants were looked for are noted in Appendix B.

Participants were not compensated for their participation in the survey. It has been considered to reward the participants with a gift card to stimulate participation or to Mturk for participant gathering, however this might also cause participants to be more likely to fill in random answers and not be motivated to give actual information, therefore contaminating the data set and therefore this has not been done.

**Information given beforehand**

Participants were informed in advance that it is a narrative research study. They were not informed about the topic or the purpose of the study. The message sent to participants is noted down in Appendix C. The messages have been given slight alterations based on group. A leaflet (Appendix D) was also disturbed throughout Breda University of Applied Sciences and posted online.

It has been considered to ask information about the topic pre-stimulus in one of two forms.

1. Asking the same questions before and after the stimulus.
2. Asking some of the questions that will be asked afterwards also beforehand, together with some other questions about non-relevant topics. This is to hopefully lower the amount of focus on the topic and can be even used to divert their attention.

It has been decided not to use a pre-exposure survey. By choosing this option it is unknown what the current knowledge is about the topic from the participants and therefore learning cannot be accurately measured. However, it also does not bias the audience as they are not indirectly informed about the topic therefore influencing their learning.

Future research should however test the impact a pre-exposure survey has on learning information as it increases relevance.

## 

## 3.3 Software

To capture different measurements we want to test, we will use an online questionnaire. Different survey tools have been considered (Appendix O). For this study a combination of Google forms and Jotform will be used due to the features they present as of writing (January 22nd 2025). Google form will be used for collection of participants and for the two-week retention update. Jotform will be used for the stimulus survey. Questions were not made mandatory to fill in to make a more distinct differentiation between what is known and what is unknown and less guessing.

It has been considered to use a 10-minute timer in Jotform when reading the story as Johnson gave the participants 10 minutes to read it as well. However, as the effect of learning under pressure is not the focus of this study, the timer was not added. Future studies could look into the effect a timer would have on recall and retention when reading a short story, as well as the effect if there are no consequences of said timer.

All data collected in the forms will be linked to a google form in order to be downloaded as Microsoft Excel sheet in order to be used for data analysis.

For data analysis, the following tools have been considered:

1. EQS statistical software. This is not a viable option due to lack of funding.
2. IBM SPSS Statistics (v30.0.0). This has a one-month free trail and has a student discount code afterwards.
3. QDA minor lite. Focuses on interview reflection.
4. Microsoft Excel (v2412). While it doesn’t give good overview, has easy to use analyzation tools.
5. Google sheets. Free to use.

For this study SPSS will be used for data analysis of the survey responses related to the story and Microsoft Excel will be used for questions related to demographics. QDA Minor lite will be used to improve of quality of the thesis itself. The Google sheets and Microsoft Excel sheet data will not be made public due to participant security reasons.

## 3.4 Survey creation process & measurements

To do this test there was the use of 3 different type of forms;

1. The participation survey, to sign up for the study.
2. The story survey, which contains the questions and the stimulus itself.
3. The two-week retention survey, which repeats the retention questions.

**Participation survey**

In the participation survey, no questions are added. Only the title “Sign up form for study” is shown together with an introduction text (Appendix E). In settings, under answers the collection of email addresses has been enabled with the option that the participant has to manually fill in their email address. Participants cannot alter their response and their response amount is limited by to one.

**Story survey**

In the story survey, the actual questions were asked, and the stimulus was applied. Due to the 3 different stories, 3 different questionnaires were made, with the only difference being the story itself, given as a description block.

The story survey consists of 12 sections, each on a different page:

1. Consent form. This is also where their email address is asked as well as any prior knowledge about the study. (Appendix G)
2. Demographic questions (Appendix G). This consists of 7 questions.
3. Preparation for the story. This only mentions that the next page will contain the story for which they have 10 minutes to read.
4. The story (Appendix H, Appendix I, Appendix J). This is randomly assigned one of the three.
5. Transportation questions (Appendix K). This consists of 12 questions.
6. Identification questions (Appendix K). This consists of 10 questions.
7. Personal relevance questions (Appendix K). This consists of 7 questions.
8. Retention questions (Appendix K). This consists of 9 questions.
9. Learning questions (Appendix K). This consists of 5 questions.
10. Integration questions (Appendix K). This consists of 1 question.
11. Audience Evaluation questions (Appendix K). This consists of 11 questions.

In the settings of the story survey the option for editing responses was disabled and the option for only allowing for filling in the survey once was enabled. All questions were not mandatory to answer, except for the consent and email address.

After the participation survey has been published, under the ‘responses’ tab there has been a new spreadsheet created. In this spreadsheet a new tab named “Survey Sent” has been created and the form links have each been put in a different cell in the same row (A1, A2). In the spreadsheet under Extensions, an Appt Script was added with the code that automates the process of sending one of the forms at random to the participants filled in email address (Appendix F), and the set trigger function was run. This spreadsheet has been named ‘Collection’ and an anonymized version can be found in the repository.

### 3.4.1. Demographics measures

We use a demographic questionnaire containing questions about:

1. Gender by birth. This is collected since the original study this study is based on (Quintero Johnson et al., 2012) shows significant differences between male and female participants in their results. Johnson only asked for gender. We specify ‘by birth’ to create clarity and remove ambiguity in relation to trans-people, non-binary people and people who do not fall in the traditional spectrum of sex. We do have an option where they can fill in their own gender, notified as “other”. By being more specific we attempt to make a clear distinction between gender identity and assigned sex at birth, where we aim to answer the second. By being more specific, we attempt to improve data accuracy.
2. Age, this data is collected to ensure the participants are of the correct age for the study.
3. Main language. This data is collected since the questions are in English as well as the artifact itself. It is presumed that people whose main language is English might have a higher transportation since they have easier time to read.
4. Nationality. This is collected to demonstrate if there is any correlation between culture and perception of the artifact. This is important since there are certain mentions to American culture that might not be understood by other cultures such as “Chi O”.
5. Educational level. This is collected to see correlation between educational level to perception of the messaging. A higher educational level might suggest increased critical thinking and therefore increased resistance to messaging.

The following demographic data has been considered but not collected:

1. Race. This data is not collected as it is not a factor in the stories themselves. Johnson did collect this, but this metric did not provide useful data and invites bias. While this could be improved by asking for ethnicity instead, it still lacks reason and foundation that could lead to useful data.
2. Religion. This data is not collected as it is not a factor in the stories themselves, nor has there been evidence found of correlation or causation between belief systems and information retention. While there are sources that confirm that more intelligent people are less likely to confirm to religious dogma(Zuckerman et al., 2020) possibly due to the analytical thinking style, the findings were too limited to allow for proper evidence.
3. Economic status. This would be a question of high income, middle income, low income. While this question might indicate relation to intelligence, it is the perception of participants of what might be perceived as high, middle or low that cannot be determined and might be different per participant, therefore not being able to lead to conclusive data.
4. Sexuality. While data does suggest that heterosexual woman are most affected by the story topic in this study, the extrapolated data this question could give could more effectively be retrieved by asking personal relevance. Therefore, we also avoid sexuality bias.
5. English language proficiency. Asking whether they are beginners, intermediate, advanced or native-like is arbitrary, since their own perception is that they understand it well enough to participate in the study. This is also why they are not asked for their level according to the Common European Framework of Reference for Language (CEFR). Participants might not know what level they are. It also does not add to identifying their vocabulary. The vocabulary size of a person is hard to measure unless there is a designated test for it, which takes up too much of the survey. While it can be assumed that the vocabulary size may affect the transportation and identification of a participant, this is too difficult to measure within the limits of this study.
6. Gender Identification. This is not asked since it is not relevant to the study.
7. Intelligence. As the story is not specified for a particular group of people besides English speaking young adults, this is not a factor that needs to be measured for this study. Besides this is intelligence very hard to measure as its definition is not clearly defined (Neisser et al., 1994)
8. Primary learning method. This is not asked since this would take an extra survey and therefore it would become too long for participants.
9. Dyslexia diagnosis. We do not ask this since dyslexia can also be undiagnosed and would become too extensive to measure as well as how it influences.
10. Native language. Native language is not asked to account for the bias that people might not primarily speak their native language anymore when no longer living with their parents.

### 3.4.2. Scales

The questions have been asked on a 7-point Likert scale (Likert, 1932) ranging from “Strongly disagree” to “Strongly agree”. This has been done using the Scale Rating Form Element. An option for “Not applicable” was not given, neither was the text “neither agree nor disagree” or “Neutral” provided in the middle. Future researchers are encouraged to also explore the Input Table element. While it has the same function, participants’ perception of relation of the questions might be different. For the Audience Evaluation Scale the range names have been adjusted to “Not at all” and “A lot”, as well as the integration scale a.k.a. manipulation check, to “not at all related to the narrative” and   
“very related to the narrative”.

A seven-point scale has been used over a 6-point scale in order to have an option in the middle. While not having the middle point it can be presumed that participants think more carefully about their answers, also known as the forced choice method (Allen & Seaman, 2007), it can also be presumed that if questions are more unclear or participants do not have strong feelings regarding the question, the middle option would be chosen (Armstrong, 1987).

The 7-point Likert scale was chosen over a 5-point scale to resemble more a replication of Johnson’s study. Another argument for the 7-point scale is that it allows for more nuanced opinions, however it also increases the cognitive load. It has not been tested whether 5 point-scale or 7-point scale is too challenging for the audience. It has been considered that the 7-point scale in combination with the length of the survey might induce fatigue.

Possible distortions have also been taken into account such as:

* Social desirability bias, where people might judge the story more favorably or less favorably than their beliefs due to their relationship with the researcher and institution (Krumpal, 2013). This has been minimalized by making it an international online survey.
* Central tendency Bias, where participants might avoid more extreme responses due to being perceived as having extreme views. However, due to having low social desirability, there is a presumed low chance of this bias. Future research can check this by asking the topic questions in different order as it is presumed that this bias mostly appears early in the study.
* Acquiescence bias, where participants agree with the statements as presented. Due to the audience being young adults, they are not commonly known to have this bias, except for people with development disabilities and participants who are eager to please. This is not checked in this study.
* Not answering questions to avoid making errors in answering due to lack of understanding of the question and that their answers may be used against them or misinterpreted and/or taken out of context.

### 3.4.3. Transportation & Identification Measurement scales

We applied (Green & Brock, 2000) transportation scale as well as (Cohen, 2001) integration scale. Unlike Johnson we asked all questions.

Unlike Johnson we keep the transportation questions in the fact sheet survey, since it has not been proven that loss of self-awareness, psychological distancing from reality and demonstrable belief changes as result of the experience cannot happen with a fact sheet. However, we have removed the following question as it can no longer be properly answered: “While reading the narrative I had a vivid image of the main character”.

The word ‘story’ in these questions has also been changed to ‘narrative’ for the fact sheet but is kept as ‘story’ in the other 2 surveys. Future research could make the questions more aligned to apply all questions to all stimuli.

For the fact sheet we removed the identification sheet, since there was no character or story to identify with. While it could be argued there might be identification since there is mention of Americans, women, and men, the questions from Cohen did not apply to the fact sheet. It would be good to evaluate these questions in the future to make it also apply to the fact sheet. The only question that could be answered is: “While reading the narrative, I forgot myself and was fully absorbed.”, but it was still left out to avoid biasing the data due to the lack of different amount of questions asked and therefore are not conclusive.

### 3.4.4. Personal relevance questions

The researcher made these questions as they were not provided by Johnson’s paper. See Appendix K.

For the fact sheet the following questions have been removed:

* I relate to the main character of the story.
* I saw myself as one of the characters in the story.

The word “story” in these questions has been changed to “narrative” for the fact sheet.

### 3.4.5. Retention questions

These questions were copied from Johnson’s paper. However, the question: “Approximately how many people are affected by chlamydia each in the U.S.?” has been changed to “Approximately how many people are affected by chlamydia each year in the U.S.?” in order to create more clarity.

The retention question that mentioned “males and females” has been renamed to “men and women” based on feedback from the pilot study.

Since we are using an online survey and the retention questions are open questions, there is a higher chance these open boxes will be used for non-serious answers also known as trolling. It has been considered changing them into multiple choice answers instead as it also makes it easier for data processing. However, due to the fact that this is a continuation of a previous study and not wanting to bias participants with making them guess, the open-ended questions remained. Another reason is that for open-ended questions there is a more active recall process rather than with multiple choice questions with is more prone to accidental positives. This method also creates more depth and ensures more detail recall instead of having a basic understanding of the topic.

Johnson did not provide a method to how these questions were judged and scaled, therefore this researcher has created their own method of judging the open-ended questions which can be seen in Appendix L)

### 3.4.7. Integration check

In Johnson’s paper there is a manipulation check. This is to check how high the actual integration is. This has been renamed to integration check, due to the fact that is what is being measured.

For the fact sheet the question has been rephrased to: “Please rate to what degree you believe the health information in the fact sheet was an integral part of fact sheet.” The scales have also been renamed to “not at all related to the narrative” and “very related to the narrative”.

It has been considered that the data received from the fact sheet might not be relevant. It might be better in future studies to rephrase the entire question to talk about narrative instead of story or fact sheet.

### 3.4.8. Audience evaluation measures

These questions were asked in Johnson’s original thesis in order to establish if the stories vary in realism, audience interest, entertainment value, and audience enjoyment. While she did not test this with the fact sheet, we did include it. Since there are 4 categories, it can be presumed that each question fits one of the categories. While Johnson did not specify this, this researcher has attempted to categorize them:

* Audience enjoyment
  + How much did you enjoy reading the fact sheet?
  + How enjoyable do you find the subject matter?
  + How enjoyable do you find reading this type of format?
* Interest
  + How interesting did you find this fact sheet?
  + How interesting did you find the subject matter?
* Entertainment
  + How entertaining did you find this fact sheet?
* Story realism
  + How realistic did you find this fact sheet?
  + How realistic did you find the writing style of this fact sheet?

However, it is unknown to what topic is of the following question:

* Would you recommend this fact sheet to a friend?

### 3.4.9. Systematic Message Processing

All 9 of the original questions were asked from the original questions from Kahlor’s study (Kahlor et al., 2003) (Appendix K).

### 3.4.10. Other considerations

EsSense Profile (King & Meiselman, 2010) and EsSense25 (Nestrud et al., 2016) have been considered to measure people’s emotional response to the narrative to see how emotional response affect retention. However, due to the length of the previously asked questions, it was assumed that the tiredness and cognitive load of the participants becomes too high, therefore it is recommended to do this in future research.

A manipulation check to see if participants skip questions has also been considered but is disregarded since it does not minimize potential damage.

It has been considered to ask questions regarding preferred methods for learning as well as how participants actually learn related to their mental state, but due to complexity and survey duration this has been cut.

It has been considered to ask questions regarding intelligence in order to identify the relation between intelligence and information retention. However, due to different definitions of intelligence and the amount of extra questions this would entail, it has been decided not to continue in this direction.

### 3.4.11. Submitting

The form has a google sheets integration. Therefore, all answers are immediately transferred to the connected google sheet. In the google sheet an apps script has been added that allows to send an automated email after 2 weeks to the participant with a link to the retention survey. (Appendix N)

### 3.4.12. Retention survey

This survey consists of the same questions as the retention questions from the story survey. At the start of the survey participants are asked for their email addresses in order to align the response with the story survey response. It is also asked if the participants have looked up any information in between the two surveys to check for interest with the question: “Have you since the study intentionally looked up any information about the topic?”. This was a yes or no question. At the end there is also asked if the participant wishes to receive the paper once it is published.

It has been considered to also ask about behavioral changes, however this has not been done as the focus of this study is not behavioral analysis and the researcher has to take into account the scope of the project. It is recommended for future researchers to look at the effect of short stories with messaging and the behavioral effect they might create.

## 3.5 Procedure

The procedure of the participants is shown in the flow diagram below (figure 1). Each section of the story survey is described in the previous Survey creation process section. Figure 2 shows the process from a researcher’s point of view.

A diagram of a flowchart

Description automatically generated

Figure 3.1: participant procedure.

A diagram of a diagram

Description automatically generated with medium confidence

Figure 3.2: Procedure process.

## 3.6 Stimulus creation process

For this study we will use the same stimulus that is used in Quintero Johnson (Quintero Johnson et al., 2012) their study. In private messaging with Johnson the stories and fact sheets were transferred. According to personal messaging with Johnson, the stories have been written by a male colleague of Johnson who was paid to write the stories. in Johnson’s study the pseudonym “Pat Thomas” was given as writer. For this study the name of the writer has been removed in order to avoid certain biases, however this does invoke new bias related that participants might think the researcher wrote the stories.

## 3.7 Data collection & storage & repository.

The data is gathered on Jotform. This data is linked to the ‘Collection’ google sheet in a new tab. This leads to having 3 new tabs, one for each narrative. This sheet is then downloaded.

In the downloaded file for the fact sheet an extra row is added for proper alignment of the transportation question, since it has 1 less transportation question. Empty columns are also added since there are no identification questions and one less personal relevance question.

Once all questions are all aligned in all the sheets, the answers for the two week later form are added manually as the 2 email addresses given are compared and linked.

After that the email address column is replaced by a “story” column mentioning 1 for Fact sheet, 2 for Low integration story, 3 for High integration story.

Then they are all combined in one single sheet. The timestamp column is then replaced for an Participant ID number, counting up.

Then the data is looked at. All participants who said that their age does not meet the requirements, their row with answers is being deleted.

Now the excel form is ready for processing in SPSS and excel. This is further discussed in the data analysis section.

After processing the SPSS data is uploaded to Github to the following repository: <https://github.com/thatoneguyleon/Thesis/tree/main>

The full thesis will also be uploaded here. The Excel sheet is not uploaded for participant privacy since the history might reveal their email addresses. The researcher does not have permission to share data of the participants.

## 3.8 Data Analysis

For this study we mostly rely on 2 tailed t-tests. We looked for both the mean and the median and their standard deviations. Confirmatory factor analysis has been used in order to evaluate the accuracy of the measurements and reliability analysis has been used on the Sense of Perceived Learning questions as the researcher has made those themselves.

For data analysis there have been 2 tools used. Microsoft Excel and SPSS.

Since the questions were optional to fill in, some participants have not filled in certain questions. These have been noted down at DNA (Did Not Answer).

Any reverted questions were reverted again for alignment.

Future studies related to messaging processing are encouraged to use Implicit Association Test (IAT). While not relevant to this particular study it can be used to measure changes in implicit attitudes towards behaviors after exposure to stimulus by measuring before and after applying stimulus.

The details of the steps that are taking in order to perform the data analysis can be found in Appendix M.

## 3.10 Limitations to the method & bias

Due to the nature of the method and researcher there were multiple limitations to the method. Some limitations have already been mentioned in other sections in the study and will not be repeated here. The most important limitations are:

1. Funding. The researcher did not have any funding and therefore the tools for data gathering and data analysis has been limited.
2. Time limitation. This research has a limitation of completion of 1 academic year. Therefore, certain academia knowledge could not be obtained. Limiting the knowledge of the researcher.
3. Sample Bias. The participants are mostly from western civilizations, as the survey was distributed through English-language websites. This also introduces a cultural bias.
4. Positivity bias. People are more likely to recall positive memories than negative ones over time (matlin 1978). It is also called the Fading Affect Bias. It has not been tested what the effect is of writing positive sentences about the topic vs negative sentences about the topic. Besides this, perceived positive information also tends to create less cognitive dissonance and is easier to process emotionally than perceived negative information.
5. Limited interpretation of the data. As the researcher has not done quantitative or academic research before, it can be understood that the interpretations of the data might be limited due to lack of experience and knowledge.
6. Time tracker. It could not be tracked how long it took the participants to read the story or any part of the survey. Therefore, it is unknown if they took a break while partaking in the survey.
7. Pre-stimulus knowledge. Due to biases, it cannot be asked what information they knew about the subject beforehand.
8. Stress inducement. It is unclear if the time limit of 10 minutes caused extra stress in participants and therefore affected their retention of information and affected their transportation and identification.
9. Fact sheet vs story length. The length of the fact sheet was much shorter than the stories. This cannot be countered.
10. The length between reading the fact sheet and retention questions was shorter because identification questions were not asked.
11. Gender bias. It is not asked whether participants identify as nonbinary or transgender.
12. Brain visualization bias. Participants might have different forms of brain visualization. This can affect how they answer the personal relevance questions.
13. Level of language. The language used in the survey might not be understood by all participants.
14. Participant emotional state bias. It cannot be controlled for if the participants have a good or bad day, while it can influence their answers. Therefore, this is a quasi-experiment.
15. There is only one question related to integration, and it is more about the relatedness to the story instead of integration.
16. The Systematic Message Processing result is less reliable than in previous studies due to lack of certain questions.
17. The fact sheet and the stories cannot be compared due to them having different elements.
18. Limitation to group control. The randomization script is pure random. Therefore, it does not have a check to make sure each story is read by an equal amount of people and that each demographic group of age, gender, etc., is equally divided among the different stories. It is recommended for future research

## 3.11 Ethical considerations with methodology

Since the topic is about persuasion that includes participants, ethics must be considered in the methodology. While certain ethics have already been discussed, potential damage as result of the methodology have to be considered.

One of the ethical considerations as result of the methodology is the result of the combination of the demographics. Due to collection of gender, degree, age, and whether the participant is studying or not, in combination with retention, could lead to findings that due to small participant count might lead to bias. The potential for reinforcement of negative stereotypes has been considered and found to be minimal. However, the researcher has considered that if the results of the data find potential unforeseen harmful conclusions, the defense of the thesis might be done under a non-disclosure agreement and the paper itself will not be published on an online platform.

Another issue regarding the demographic is the data in combination with the given email addresses, leading to privacy concerns. Email addresses often contain information such as the name and birth year.

The concern is that if a leak occurs, other people can target certain participants’ their email addresses when they have specific demographic data such as targeting minorities or vulnerable people and pressure them, blackmail, targeted advertisement, or otherwise. The combination of email address and demographic data makes people identifiable regarding the survey answers, which is a large concern. The researcher has taken extra security measures, however it is recommended for future researchers to improve the survey automation script to give participants a 6 character unique code for them to fill in that can be used as identifier for the story survey and retention survey instead of their email address. By making sure they keep the email they can fill in the code again with the retention survey, thus the email address is separated from any answer given and replaced with a unique code.

Ethical considerations have also been considered regarding information retrieved and data privacy. Therefore, the researcher has taken security measures to secure the data and anonymize it.

As discussed, earlier limitations to the method can also lead to bias and raises ethical concerns. Another of these concerns is that only a western audience will participate and therefore it is not inclusive to the large variety of cultures.

There have also been considerations to ask questions regarding mental disabilities, however due to this being a vulnerable group of people, this is not asked.

# Chapter 4: Data and Results

## 4.1 Disqualifications & Faults in methodology

A total of 60 participants signed up for the study. Of those 60 participants, 40 participants submitted the survey, which leads to a cut off of 33%. Of those 40 participants 29 are within the correct age group and filled in nearly all questions. Of the 29 valid participants only 2 completed the retention survey, which gives a cut off of 93%. This is demonstrated in Figure 4.1. Due to the low amount of data on retention, this data is not significant enough to analyze as otherwise it might introduce bias.

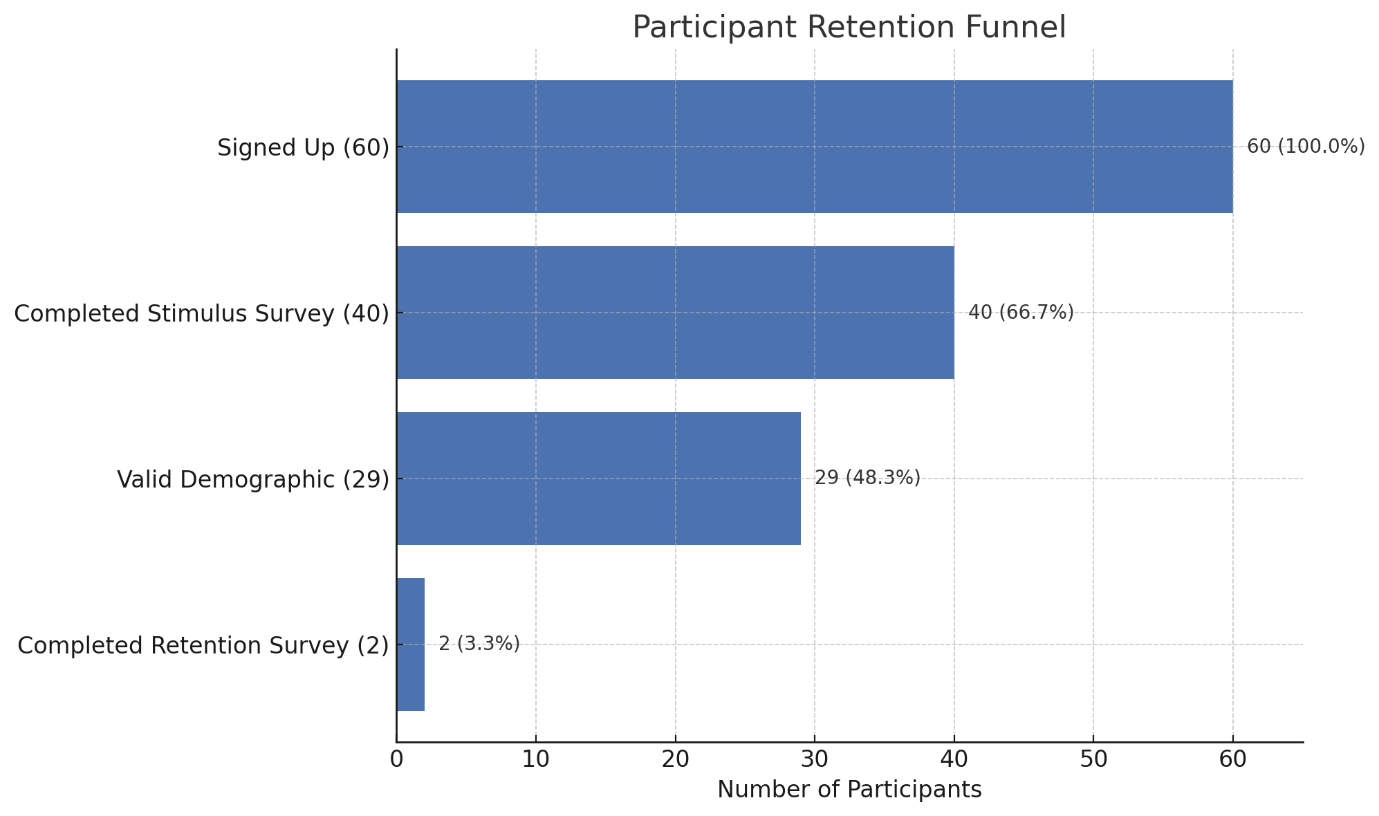


Figure 4.1: Bar graph of participants.

20.7% (n = 6) of the participants did not fill in all questions. They were not disqualified as most of them only did not fill in a single question. However, future researchers should investigate deeper if questions should be mandatory answered or an NA option should be available as well as the effects of it.

## 4.2 Demographics findings

Of the 29 participants, 55.2% (n = 16) were male, 41.4% (n = 12) were female, and 3.4% (n = 1) preferred not to say. The majority of the participants with 82.8% (N = 24) was European. However, the participant count was too low to make an impact on gender or nationality, therefore these factors are not further analysed.

69% (n = 20) of the participants were currently studying a form of formal education, while 28%. 3.4% (n = 1) did not provide an answer.

For their last received degree 51.7% (n = 15) of the participants answered High School Graduate, 38% answered College Bachelor Graduate, 6.9% (n = 2) mentioned an associate degree, and 3.4% answered a Master’s degree.

The main language in the daily life of participants was for 62.1% English (n = 18), 34.5% Dutch (n = 10), and for 3.4% (n = 1) Spanish. The mean age is 22 ( SD = 1.87).

## 4.3 Findings & results

### 4.3.1. ANOVA tests

#### Effect of Integration levels

A one way ANOVA was conducted to examine participants’ perception of the degree to which the information was an integral part of the story for each group of the participants. The independent integration was measured as nominal. The results indicate that participants perceived the high-integrated message significantly more integration (n = 10, M = 5.9, SD = 1.04) than the low-integrated message (n = 13, M = 2.69, SD = 1.58). The No integration fact sheet was perceived as nearly equal as the high-integrated message (n = 6, M = 5.83, SD = 1.06). F(2, 26) = 18.706, p = <0.001 . From pairwise comparison it appears that high integration is not statistically significant in relation to the No integration (p = 0.93). The overview of the analysis is presented in Table 1 .

A white background with black text

AI-generated content may be incorrect. Figure 4.2: table of Integration matrix.

#### Effect of message integration on recall of information

A one-way analysis of covariance demonstrated a significant positive relation between the high integration story and recall (M = 063, SD = .13), compared to low integration (M = .40, SD = .21). This means that when the integration is higher, there is a higher reported recall of information (MD = .224, p = 0.005), therefore supporting the hypothesis. F(2, 26) = 4.672, p = .018.

While No integration stimulus reported an average lower recall (M = .49, SD = .15) compared to high integration, this has not been found significant (p = .158) nor has significance been reached between no integration stimulus and low integration (p = .288).

#### Effects of message integration on Transportation & Identification

A one-way ANOVA demonstrated that integration is statistically significance for transportation (F(2, 26) = 4.483, p = .021) as demonstrated in Figure 4.3, but not for identification (F(1,21) = 3.402, p = .079). Therefore, demonstrating that high integrated story is related to higher transportation.

A graph of a number of pink rectangular objects

AI-generated content may be incorrect.

Figure 4.3: Bar graph of transportation mean across the different stimuli.

The High integration story (M = 4.08, SD = .90) showed significantly higher transportation than the no integration story (M = 2.92, SD = .048; p = .007). Yet the no integration did not have significantly lower transportation than the low integration story (M = 3.48, SD = .74; p = .149). The low integration story was also not significantly lower in transportation than the high integration story (p = .074).

#### Effects of message integration on audience evaluation

A one-way ANOVA demonstrated that integration is not statistically significant for audience evaluation. F(2, 26) = 2.110; p = .142). While the high integration story (M = 4.77, SD = 1.24) has a higher mean on audience involvement but does not reach significance compared to low integration (M= 3.85, SD = 1.16; p = .066) and no integration (M= 3.87, SD = .87; p = .137). The significance between low integration and no integration reaches near randomness (p = .976).

#### Effects of message integration on personal relevance

A one-way Anova demonstrated that integration is reaching near significance for personal relevance (F(2,26) = 2.789, p = .080). Significance has been reached between high integration (M = 3.3, SD = 1.20) and no integration (M = 2.17, SD = .92; p = .035). However, it has not been reached for low integration (M = 2.59, SD = .88) and high integration (p = .096) or no integration (p = .400).

#### Effects of message integration on SMP

A one-way analysis demonstrated that integration was statistically significant for Systematic Message Processing (F(2,24) = 3.431, p = .049). Significance has been reached between high integration (M = 4.88, SD = .83) and low integration (M = 3.59, SD = 1.40; p = .017). Significance has not been reached in relation between no integration (M = 3.84, SD = 1.16) and high integration (p = .122) or low integration (p = .688).

### 4.3.2 Correlations

From a Pearson correlation test it is determined that there is significance positive correlation between Transportation and identification(r(23) = .69, p = <.001). Identification was not tested on the No integration participants.

#### Effects on Recall

Recall was not significant correlated towards transportation (r(29) = .24, p = .203), identification (r(23) = .23, p = .293), audience evaluation (r(29) = .35, p = .061), personal relevance (r(29) = .24, p = .207), or integration(r(29) = .20, p = .295).

A Pearson two tailed correlation test demonstrated statistically significance with positive correlation between Systematic Message Processing and Recall of Information (r(27) = .43, p = .024).

#### Effects on SMP

A Pearson correlation test determined no significant correlation between Systematic Message Processing and transportation(r(27) = .30, p = 0.135) or identification(r(22) = .42, p = .055) while the latter is bordering significance.

A Pearson correlation test did determine statistically significant positive correlation between Systematic Message Processing and personal relevance(r(27) = .43, p = .026) as well as with audience evaluation(r(27) = .39, p = .044) and integration(r(27) = .48, p = .012).

#### Effects on Integration

A Pearson two-tailed correlation test determined there is no significant correlation between integration and Transportation(r(29) = .03, p = .878), identification(r(23) = .36, p = .095), personal relevance(r(29) = .07, p = .728), and audience evaluation(r(29) = .37, p = .051).

#### Effects on Audience Evaluation

A Pearson correlation test determined a positive significant correlation between audience evaluation and transportation (r(29) = .67, p = <.001), identification (r(23) = .87, p = < .001), and personal relevance (r(29) = .54, p = .003)

#### Effect on Personal relevance

A correlation test determined significant positive correlation between personal relevance and identification (r(23) = .58, p = .003) as well as transportation (r(29) = .67, p = <.001)

All correlations can be seen in Figure 4.4 in which green lines demonstrate significant correlations and the number besides it the correlation strength.

A diagram of a network

AI-generated content may be incorrect.

Figure 4.4: Septagon of correlations, green lines demonstrate significant correlations and the number the strength.

## 4.4 Participant comments

During a pilot test multiple participants made comments during the test or contacted the researcher afterwards. When the experiment was applied on a large scale and more participants where gathered multiple participants also left comments at the end of the survey. Common themes included:

* + 1. Clarity.
       1. Participants found the question “I could picture myself in the scenes of events described in the story” confusing as it did not state if it was meant as bystander or main character.
       2. Participants mentioned multiple transportation and identification questions could be interpreted in different ways.
       3. The second transportation question was found to be a weird sentence
       4. The question about being mentally involved was found to be unclear what was meant for the fact sheet.
       5. Participants of the no integration study were confused by the questions as it mentioned a story or narrative.
    2. Readability.
       1. The consent form was considered hard to read by multiple participants as it was quite long and didn’t always make logical sense to them.
       2. In the low integration story, the use of em-dash was confusing to some participants.
       3. In the low integration story certain sentences are hard to read. Such as “to be the parent who made the least” and “new addition to her life”.
       4. Participants mentioned that the low integration story has some really long sentences.
    3. Language specific words.
       1. Participants mentioned that they did not know what “Chi O” was in the Low Integration story.
    4. Enjoyment.
       1. High integration still didn’t care about characters and felt as info dump.
       2. Participants mentioned that the high integration story had multiple grammar issues, and it took them out of the story.
       3. Participants mention the story is poorly written
       4. Participant mentions there is awkward exposition
       5. Participant mentions a lack of focus in the story causing confusion
    5. Relevance.
       1. Some participants perceived the questions related to the USA as irrelevant as they were not from that country.
       2. Participants mention multiple questions feel like they do not apply to the story.
       3. A participant mentions that the audience evaluation questions ask multiple double questions
       4. To some participants that read the low integration story the girl on the phone felt irrelevant. Her name was not remembered and even unknown where she was.
       5. Participants mentioned that the character doesn’t really make decisions therefore it is hard to answer some identification questions.
       6. Participants noted that the questions ‘After finishing the narrative, I found it easy to put it out of my mind.’ and “The events in the narrative have changed my life.” are irrelevant, since barely any time has passed since reading the story.
       7. A participant mentioned that certain questions regarding personal relevance are about brain visualization. Since the participant has Aphantasia and cannot visualize, they cannot answer the question correctly.

# Chapter 5: Discussion of Data

## Introduction

This chapter interprets the findings of the present study in relation to existing scholarship on narrative integration and information recall among young adults. The primary objective of the research was to determine whether varying levels of educational content integration within a written short story about Chlamydia would differentially affect participants’ ability to recall health‐related information, leading to the research question: Between high integrated and low integrated information in short stories, which one is more effective at recalling specific information in young adults? As this is a quantitative study,

This section allows you to argue what your data means and how this contributes to your larger argument. This section is less based on current knowledge and therefore allows you to voice your own views without additional references (although good references are still a good thing to have, or you should refer to you findings.) Be aware that this section can grow quite quickly and remind yourself to check if the argument you are making is relevant for this thesis.

## 5.2 Research results

In this study we found correlation between message integration and information recall, in which higher integration correlated with higher recall. However, because you only use 2 stories there are many other factors that could have influence which are not being looked at. Also because you had high stress you might have wrongly interpreted the data.

Consistent with hypotheses derived from Entertainment–Education (EE) theory and dual‐process models of persuasion, the high‐integration group—whose narratives wove factual details seamlessly into the storyline—demonstrated significantly greater information recall than did the low‐integration and factual‐only groups. These results corroborate prior evidence that tighter narrative integration can enhance retention (Quintero Johnson et al., 2012).

It is unknown how effective other ways of getting information is compared to reading such as advertiments through posters, videos, etc. Therefore it cannot be concluded that my research is not influenced by that.

**Methodology**

Methodology has not been fully used. As Johnson also tested results with high and low recall. This is due to time issues. This might also mean that certain elements could be overlooked or miscalculated. As well because the researcher has never made a thesis before.

There is no significant difference between No integration and high integration, the values might be similar due to chance.

These findings suggest that embedding health information into narrative structures may enhance educational outcomes for young adults.

## 5.2 Biases

During the research the researcher had to take into account that certain biases could not be avoided.

* Example bias
  + The researcher has only tested with one short story. This means that other short stories
* text length bias
  + It is unknown what the effects are of shorter texts
* Location bias
  + Most participants live in The Netherlands
* Social bias: since the participants have not discussed the story with other people, it did not have time to grow and evolve beyond themselves.
* Culture bias:
* Intelligence bias: some people might understand it better and have different values
* Socio-economic bias:
* Promotion bias: It is mainly promoted in groups aimed to writers and book readers, therefore they might have certain expectations and can be more critical of stories than the average person.
* Mention that it is one story, the topic might cause for bias
* This study refrains from using the term audience involvement. This is due the large different definitions and does not directly apply.

## 5.3 Scope limitations

This research question has been limited In a variety of ways:

* The target audience is limited to young adults between the ages of 18 and 25. This audience has been chosen since they are adults, allowing for easy access that can give permission and their brain is still developing until the age of 25.
* The short story has also been limited to be between 3000 and 4000 words in length. There is a bias since the related factual presentation is only between 500 and 600 words and therefore not the same length.
* Many books of literature were not available to the researcher. Therefore it would be good to review the literature with looking at more books.
* The genre of the short story has also been limited to be genre of fantasy to make sure there is a noticeable difference between the factual statements and written prose.
* The topic has been limited to be related to nutritional information specifically carbohydrates. This has been chosen to look at dietary behaviour change while knowing it is clearly fictional.
* The recall time has also been limited to two weeks due to the time for this research.
* The factual presentation will be a bullet point list.
* The researcher is not taking into account the emotional response the story has.

## 5.4 Discussion

the next section will be the ‘’Discussions’’ section and will be dedicated to discussing the findings of this research and in what degree the research questions have been answered.

In this section, the findings of this research are discussed.

The concepts discussed in the literature review, along with detailed information found in the theoretical framework will be employed during the finding’s discussion.

It is my personal belief that play is the best version of learning since it is through interaction. However, …..

Originally, there was intent to also test retention of information compared to recall. A follow-up was done after 2 weeks of retention of information. But due to a lack of participants this was not analysed.

“There is also a relation proven between message integration and identification where people who read a low integrated message had higher identification than people who read a high integrated message” The research is weak and does not have enough different stories to determine this

We can’t say the why.

## 5.5 Ethical considerations

Due to the nature of the research, it is prone to abuse. While this research is intended to help governments to help their citizens to create healthier diets, it can also be abused by food corporations to promote and market their unhealthy products.

## 5.6 Practical implications

## 5.7 Improvements on methodology

The integration question should be asked directly after the Stimulus, since it is

Because the

In order to prevent high cut-off rates in any replication or continuation studies, code should be implemented to send reminders to participants when they have received a survey but not filled it in.

The methodology assumed for a large sample size. An explanation for the low participation count could be due to the lack of incentive. Future researchers should take into account different methods to ensures a participant size that reaches statistical significance.

# Chapter 6: Conclusions

This chapter will summarize everything written and presented in this thesis, in the hopes to highlight the purpose of this thesis and make clear statements and describe with simple words the findings of the asked research questions. Also, this chapter will describe how future research can expand further to these findings in new topics.

## 6.1 summery of the findings

In this study, the goal was to answer the research question: Between high integrated and low integrated information in short stories, which one is more effective at recalling specific information in young adults? Using an online survey with Likert scale questions and open recall questions, we investigated the effects of message integration on information recall. Our findings indicate a positive correlation between the variables. This suggests that the higher integrated message could lead to higher recall of the message. We also highlight the positive correlation between ………

The results suggest that message integration plays a curial role in influencing recall for young adults. These findings contribute to the broader understanding of the Entertainment-Education Strategy and offer practical implications for future applications. It is vital that the EE strategy is further developed to increase the effectiveness of its messaging. This research provides a foundation for quantitative research to build upon.

Emphisize the importance

Highlight important of the findings and how they contribute to the field and address research field.

What is the political position. Where do you position yourself. Why does this research matter.

Trigger them to acknowledge your paper is important. Even better if you motivate them to make a change or do stuff.

However the study has limitations, including a small sample size and short duration which should be addressed in future research.

Future studies should explore different populations and longer time frames to validate and expand upon thee results.

.

## 6.3 Limitations

There are several factors that limit this study and should be considered for contuation of the study

* Small sample size. The study had a total of 29 participants. Future studies should
* Sample bias. The participants are mostly from western civilizations, as the survey was distributed through English-language websites. This also introduces a cultural bias.
* Time-Skill limitation. This research has a limitation of completion of 1 academic year. As the researcher has not written a thesis before, the
* Therefore, certain academia knowledge could not be obtained. Limiting the knowledge of the researcher.
* Limited interpretation of the data. As the researcher has not done quantitative or academic research before, it can be understood that the interpretations of the data might be limited due to lack of experience and knowledge.
  + Only part of the data is properly analysed. More analyses could be done
* This study is limited by solo project development
* first time thesis writing

## 6.4 Future research

As pointed out throughout the thesis, there are several subjects future research is incentivised for the field of EE:

### 6.4.1 Quantitative methodology development

Methodology development for quantitative research in EE, specifically the use of online surveys for written stories. It is incentivized to create a baseline story that teaches about a health topic that can be shared among EE scholars to derive from and make alterations on for their own study. This story should be about a general applicable topic literacy that affect daily behaviour such as personal finance, food, hygiene, social interaction and relationship maintenance or physical exercise as it applies to a large variety of audiences. It is integral that the products of EE are publically available. This would allow for more fast development research and replication studies. By building on the methodology given in this thesis the processes of data gathering and processing can be automated further using Appendix F. The current methodology can be further updated with backed up literature to increase the likelihood of a bigger target audience including maximizing survey duration compared to cognitive load. Language difficulty and influence of grammar quality on recall should also be checked as measurments as it might have influenced previous studies. It should be possible for people to participants to receive the report at the end of the study by clicking a link on the submittion page bringing them to a new form to fill in their email address. In the current methodology the question about how people learned about the study can be removed as well. The methodology should be shared and updated through public repository.

* The scales should be asked in a different order based on importance. The integration question should be asked immediately after. Avoid tiredness

### Scoping review on EE

A scoping review should be done of all known measurements that influence recall and retention of information in stories. This could also identify gaps of mechanisms that do not have solid measurements and scales yet. The measurements that do exists should be able to provide a line graph on the amount of recall they provide, such as Emotional engagement (Immordino-Yang and Damasio 2007; Gutjar & dalenberg 2014), Cognitive Load (Sweller, 1988), repitition (Lakoff, G., & Johnson, M. (2008). *Metaphors we live by*. University of Chicago press.), Processing fluency (Huang,2018), Point of view(Tompkins, 2014), presence(Biocca & Harms, 2002), flow, persuasion resistance, message subtility, intent to learn, and perceivence of learning.

This thesis did not go into how emotional states effect recall, which has been known to influence recall(Immordino-Yang and Damasio 2007). Such research would also allow in trends and gaps of knowledge for example the relation between recall and audience involvement, demonstrating the point where narrative dominance occurs. A scoping review could provide a foundation on which guidelines could be build.

### Cross media comparison

There is a need for cross media comparison in the field of EE. With the games bringing interaction to for example using The Witcher franchise.

### Approach to topic

There is still a lot unknown in the field of EE relating to how role models should approach a topic whether it should be primarily monologue, dialogue where different answered are discussed and their faults, through actions, or otherwise.

In conclusion, while the field of Entertainment–Education remains underexplored, its relevance grows alongside the expanding influence of the entertainment industry on daily life. As media continues to shape how we learn, think, and relate to one another, it becomes imperative to understand not only how stories educate, but also how to wield them responsibly, ensuring their messages do not cause harm or mislead.

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# Appendix A: Transcript Interview Aaron Ehasz

Interview Aaron Ehasz

Date: 15 October 2024 9.00 AM PST

Duration: 1 Hour

Speaker 1: Aaron Ehasz, CEO of Wonderstorm, Head writer for Avatar: The Last Airbender

Speaker 2: Leon van den Berg, Master Student Game Technologies, Breda University of Applied Science.

## Background:

Leon is researching the topic of learning through prose for his Master Thesis. A reference point is Avatar: The Last Airbender, as it is known for its digestible manner of giving out life lessons.

## Disclaimer:

This is a clean transcript. All stutters, quick repetitions, and false starts have been removed. The filler words “Uh” and “Um” have also been removed. However, the filler words “Yeah”, “Like”, “I mean”, “And”, “So”, and “You know” have not been removed. Sentences have not been rephrased, and grammar has not been corrected.

## Take aways:

* Aaron is co-founder of Wonderstorm, where they build transmedia. The intention is to build franchises that have great storytelling opportunities and great game opportunities in the same world they build.
* In order to teach, it is not about the Moral of the story, but about the character motivation and drive related to the moral. Why is that moral important? What is the conflict with the moral. You start preaching when you spell it out to the viewer.
* Let the viewer connect with the character first, and after they care make the character interact with the moral of the story.
* Iroh does not try to teach the viewer, he tries to help Zuko by telling him what he needs to hear in the moment to get through a situation.
* Iroh sometimes says basic phases of common knowledge, but at a moment in time that Zuko needs it and struggles with it.
* When someone is teaching Wisdom, it needs to come from a place of humility and experience, not from ego or superiority. It needs to be appropriate for the time for the listener, not for the teacher.
* By making characters real and complex, you allow them to exist outside of yourself and make their own choices which you can sometimes nudge.
* Having a group of writers around you to talk about what a character would do in a situation allows to the character to have a more dimensionality. You need to see from different perspectives.
* To avoid flanderization you need to keep in mind that there are many things that are true that aren’t compatible, but aren't contradictory.
* Comic relief can not only be seen as a break of seriousness, but also as the relief of a rock where a wave down in drama might also allow for the peaks of drama to seem higher. The difference in depth allows more serious moments to feel more serious.
* Creating empathy for characters is important to connect viewers with the character.
* Using very scholary words can alienate part of your audience, as they may not understand everything. Instead use an 8th grade vocabulary to the best of your ability. Instead use precision with simple words to make it meaningful.
* Look at what the audience struggles with. If they try to overcome obstacles and the character has similar issues, it resonates, as they can see themselves more as that character.
* When dealing with teaching nutrition to young adults a problem might be that they already know the information. Therefore it is more about what drives people. What motivates them and what obstacle are they facing that prevents them from making the change. Are they just used to it? What makes people resistant to the change?

## Clean transcript

Speaker 1: Aaron Ehasz

Speaker 2: Leon van den Berg

00:00:00 Speaker 2

Yes. So I'm recording right now, so I am Leon. I'm doing a masters in Game Technologies, but for that I am looking at learning through prose, so learning from stories. So my specific research question—

00:00:13 Speaker 1

Okay, What kind of ... technology game technology, you said.

00:00:15 Speaker 2

Yes, but it's an extension of it. So I have a bachelors in game design. I also read that you have worked for Riot Games as well.

00:00:23 Speaker 1

 [Inaudible] What did you do? A riot?

00:00:26 Speaker 2

Riot Games, but I haven't worked for Riot. I have worked for other game studios, published one as well, but currently everything at like narrative design more specifically. So I'm looking at how can you effectively teach someone about nutrition, In this case through stories.

00:00:38 Speaker 1

OK.

00:00:46 Speaker 2

And I came across —, like people in the Netherlands are big fan of Avatar: The Last Airbender, including myself as well like, hey, this is teaching a lot about certain topics and I was like, hey, I want to do an interview on how that is done. And then I came across your name and I was like, let's try to set something up.

00:01:06 Speaker 2

Yeah, that's about me.  What about you?

00:01:10 Speaker 1

Yeah, I mean. My kind of original career launch was writing on some shows like Mission Hill and Futurama and during my first job at Mission Hill, I met Mike[Micheal] DiMartino and Bryan Konietzko, who went on to create Avatar: the Last Airbender. And so, they— We had enjoyed working together on Mission Hill, so they came to me and said, hey, do you want to help us bring this to life? And so, they brought me on as the head writer of that show and we got a couple of seasons of it, and then I did a few other things, and then I ended up kind of ... not pivoting, but trying something new. I went to Riot Games for three years as creative director and so I got to work on League and I got to be there developing some of the champions like VI and Jinx who now are leading Arcane and stuff like that and had a good time and met a lot of great people. And then in 2015, I started with my co-founders, a company called Wonderstorm, to build transmedia. So, the intention was to build franchises that would have great storytelling opportunities and great game opportunities from kind of the same worlds we were building and the first franchise we built together is The Dragon Prince. We've been really fortunate the show has, you know—, Netflix gave it three seasons to start, and it managed to find a really dedicated and growing audience. And so, Netflix said, OK, let's go all the way and do 7 full seasons of the Dragon Prince. So, we're now like, at the end of that run of that story and that saga and that's I guess the summary of who I am and what I'm doing.

00:03:07 Speaker 2

Yes, I also heard that there are three additional seasons of a new show or addition to the Dragon Prince.

00:03:15 Speaker 1

Yes, People —, maybe we've called it the third arc.

00:03:19 Speaker 2

Yeah.

00:03:19 Speaker 1

So, we're going to New York Comic Con this coming weekend, and I'll probably talk a little bit more about where it fits in. It was —, it's a part of the story that Justin and I had always intended to tell, it just happens to come kind of after the completion of the Dragon Prince Saga.

00:03:43 Speaker 1

There's another, essentially a trilogy. I mean, sometimes it's like is it all part of the same saga? Maybe? I mean, but it's the third arc is the best way I could describe it in the short term.

00:03:57 Speaker 2

OK, that's very cool. But today I want to focus on Avatar: The Last Airbender. You have been the head writer for that for also three years and it is sometimes referred to by a variety of people that it can teaches about valuable life lessons, very digestibly, and I was wondering  were there any methods that you and the team applied in order to get to that kind of point to teach so digestible?

00:04:26 Speaker 1

So first of all. I love that it's seen that way as something that is, for lack of a better word, like nutritious as a story. That there's something to get from it.

00:04:42 Speaker 1

I want to tell a quick story about what doesn't work.

00:04:47 Speaker 2

OK. Yeah.

00:04:49 Speaker 1

And the contrast of that may shed some light on how we approach things. There's an episode called the Water Bending Scroll.

00:04:58 Speaker 2

Yeah.

00:04:59 Speaker 1

And in the story, it's very early in the first season, Aang, and Sokka and Katara encounter some, You know, they go to like a pirate village or whatever, and there's a scroll that has some water bending techniques on it. It would help. So, they level up. They learn these techniques. And I think what's happened in the episode is earlier in the episode Katara has started teaching Aang some water bending and she, you know, she's very proud. She's only water Bender in her tribe. That's kind of what's made her special, and the freaking avatar is so good at it so fast. It's like when we all know that feeling of, like, there's something we practice and we care about. And there's, like, a prodigy who walks in and it's like, oh, let me try that. And they're just so good at it, that it's like. Damn it. Like, why can't I be that good? And you kind of, you're jealous. You're a little angry. You're a little, you feel selfish and weird about it. Anyway. So this situation drives her to steal the scroll, and she takes the scroll and that causes all these things to happen, and the pirates chase them and there's All these things and blah blah blah.

00:06:12 Speaker 1

And the note we got from the network was, hey, stealing is wrong. Someone has to say stealing is wrong at the end of the episode. You can't just have a character steal something without someone saying the moral, which is that stealing is wrong. And this was a pretty big dilemma for me because I didn't want to do that. I feel like every freaking 5-year-old knows stealing is wrong. I don’t have to say that. I don't have to have a preaching moment.

00:06:40 Speaker 1

To me, what's powerful, or more interesting, is seeing what forces drive a character that you love that you believe in, that you connect with?

00:06:52 Speaker 1

Who you see as a good person, a virtuous person.

00:06:57 Speaker 1

What would drive her to steal? What feelings would get so deep inside her ... that she would steal and additionally, maybe what rationalizations might she go through in that process?

00:07:09 Speaker 1

To me, that is more interesting in developing empathy in having a deeper understanding of maybe why it was wrong even though all these things, even though she felt that way, even though they were pirates.

00:07:27 Speaker 1

You still have a gut that it's still wrong, so to me it's like you trust the audience to follow a story of these authentic characters and understand their real feelings and you don't get preachy about it. And the teaching just comes from that shared experience. The authenticity of that shared experience with the character going through it.

00:07:48 Speaker 1

You never have to say stealing is wrong. So, I think they still made us say it at the end. We had to say, like stealing is wrong, unless it's from pirates or something. Something like that. But it was definitely a nod to the, you know, we had to do it for the network, but we wanted to kind of undercut it so that these kids knew we were joking a little bit. But to me, that experience of being called on it and having someone say; there's a lesson here and you have to teach it, and going through it and saying, gosh, no, what I really want to do is tell the story, portray the characters as realistically as possible, and let the experience of sharing that be what teaches. So that's kind of the first thing I would say I think about that.

00:08:34 Speaker 2

Because you also have like Uncle Iroh in this show, for example also very notice very quotable in what his teachings so to say.

00:08:42 Speaker 1

Yeah, yeah, I mean. So that would be, I mean like. Where does Iroh fit into something like that?

00:08:52 Speaker 1

That's a bit more developing a character who has some wisdom and something to say and making them compelling and believable. And believable that they know what they're talking about, right? So. I mean, if you took all the things that he said and you gave them to another character, it might not work, but you get this sense that he's very powerful, that he's been through a lot, that he's humbled, that he's experienced things, but that he's not— This is not coming from a place of ego. So, you don't question his motives. You learn that he loves Zuko, he wants to make a difference in his life. The things he says, he tries to say to make a difference. So, you believe in his motives. You believe in his experience, and then hopefully the things he says don't overextend. Again, It's like we want to find something that does feel like deep wisdom. I don't know, like in the sense of—, I feel like in Korra, I'm going to be honest, there was something he said and I was like, ohh man. ooh, that doesn't feel right. That feels like wisdom esque. It feels like —, it sounds like wisdom, but it's not.

00:10:08 Speaker 1

But that's tricky. I mean like, because like, if you don't know something or believe something, don't give it to a character like Iroh. If you're not sure about it. If it just sounds like wisdom.

00:10:20 Speaker 1

Sometimes the things you give him to say, and I don't know. I can't think of anything. Maybe you give me examples.

00:10:27 Speaker 1

I can think of one example like he says at the end of season 1, he says to Zuko “A man needs his rest”. Now. It's just a fundamental thing. It's such a simple thing, right? It's like, how do you argue that? Right? I mean, like, maybe there's someone who disagrees, but it's like. You look at, in particular, you look at Zuko.

00:10:47 Speaker 1

It's what Zuko needed to hear. Zuko's been struggling and fighting and straining and just obsessed. And this is just a moment... where he says a man needs his rest. He's just saying stop. Like maybe, you know you can change, you can grow, you know, through the process of rest. I don't know. But yeah, that's I guess what I would say on a character like Iroh, which is you have to invest in the character. So, he's believable and his motives, he or her, he or she, are believable.

00:11:19 Speaker 1

And you have to, you know, the things they say if they're saying them as wisdom. You try to make sure they're not overextending, that there's a humility to the wisdom that you choose or an appropriateness to the moment.

00:11:34 Speaker 2

So yeah, because like someone else noted to me like, hey, you know, a lot of shows that go into a longer length of more TV time, they often go into Flanderization, which is like, you know, the exaggeration of a single trade and become very 2 dimensional.

00:11:49 Speaker 1

Say that word one more time.

00:11:51 Speaker 2

Flanderization. It's the progressive exaggeration of a single trait or set of traits or fictional character until it overtakes all other characterizations basically.

00:12:00 Speaker 1

Where does that come from? Where does Flanderization come from?

00:12:02 Speaker 2

I don't know, honestly, but it's something I heard from another narrative designer. Basically. He used it as said like hey, you know, the balance in Avatar: The Last Airbender is quite consistent and doesn't go into that flanderization where you start deep character and later on become very flat. Did you use any tools or methods to make sure that the characters stay consistent.

00:12:29 Speaker 1

No tools, but I see, well..... I try to see characters as complex. Always. Even if someone is more simple or has a simple drive or a very simple need, that's OK. We still have some complexity which makes them, you know, more authentic.

00:12:53 Speaker 1

You know, one of the things that I've said again and again about how I think about writing is like, it's very character first and I kind of go through the illusion of the character exists outside of me and I'm not going to make them do what I want them to do, and I'm not going to make them say what I want them to say. And there are times when I may want them to say something and I'm wrong. That character, now that I've gotten to know them, and now that I've gotten to understand them, gosh, they're never going to say that. That character, I sure want them to keep going, But the truth is, they're not ready to keep going, and they're going to turn around. And I try to trust those instincts, and it can be torturous like finding and discovering who the character is instead of deciding.

00:13:43 Speaker 1

You know you have to like —, and again it's a little bit of like a creative trick that you play with yourself. But you have to be consistent about it. You know, when you have a writing partner or you have a group of people who are working on something, you can actually, this would be a tool, you can almost do that more effectively, because now that you've made the decision that the character exists outside of you, it exists outside of all of us.

00:14:07 Speaker 1

And we're all talking about this character now from different perspectives, and there might be one person in the room who says, yes, character is going to keep going, they're going to press over the border, and two people who are, like, no way, they're scared and two people who are like, well, maybe they're gonna find another way to accomplish what they want, but whatever. And so you can kind of contemplate all these things, but what you're hopefully doing is finding the truth of what the character will do, what the character may want, how the character may change. So, to me, that process, if you have a group, it creates some dimensionality to a character because we're all seeing that character from a different perspective. The imagination of each person who is helping to create that character is a lens with a different perspective that allows you to create dimension around that character.

00:14:56 Speaker 1

When you're writing alone, you find ways to do that on your own. You've tried to say: “or could it be this? What if it was this? Or maybe it's this,” and you try to understand and see all these things and you have to free yourself to do that. So that's part of how we strive for complexity. You know, In a moment that I don't remember, I think it might not have made it into Avatar, which is unfortunate, That I saw as a very small moment of complexity, There's a moment in season 3 when Azula and Zuko are talking. It's early in the season, I think. I think there are turtle ducks and maybe they're sharing food with them. She eating? She might be eating in the scene, and I hope she's eating because that was certainly what was in the script. And what I had written in at the end of the scene and it's like we kind of know she's —, there's something devious going on, because Azula was always a bit devious, Azula always lies, right?

00:15:59 Speaker 1

And I think we're starting to figure out that like, OK, she's giving credit to Zuko. Not because she wants to share with him, but because when the truth is revealed, the Avatar is still alive, he'll be seen as the failure. Not her. So that's why she's giving the credit. Right. So, we're starting to go. Oh, wow, we see what's happening here. It's a trap.

00:16:20 Speaker 1

In the scene, which is with the turtle ducks, she's eating, I believe, and at the end of the scene she offers him a piece, mhh, “you want a piece”?

00:16:28 Speaker 1

OK. And the network didn't understand that. Why? Why would she give him a piece of chicken or whatever it was, and I know it seems small, but it was meant to be a sign.  it's Like she's manipulative and she is — When I say crazy, she's really has problems.

00:16:47 Speaker 1

But she's also —, she is human.

00:16:51 Speaker 1

She's not a monster. Or she's not intended to be, a full monster. She's has significant problems. And he is her brother.

00:17:00 Speaker 1

And actually, after their father, Zuko is the person she loves more than anyone.

00:17:06 Speaker 1

And the instinct to just offer him a piece of chicken, it's not a trick. It's not poison and everything she does isn't gonna be, you know, to me, that sounds like that would be flanderization. Right. Is if everything she did, “would you like a piece of chicken?” And it's like rotten, or it's gonna cause him to be more deceivable. No.

00:17:24 Speaker 1

She may have a plot going on to screw him over, but also here's, you know, “oh, that's pretty good. You want a piece?” I don't know. It's possible. And it's funny. That kind of complexity that sometimes I think a network executive is trying to see. I want some clarity in storytelling, but that complexity in characters is something —,  these are teaching in preschool. Hopefully they teach people as preschoolers to embrace that which is —, and I have a kid at preschool, So that's part of what I'm talking about.

00:17:57 Speaker 1

But they talk about something like instead of shutting down like a, say, a kid wants, you know, he's hungry. They want a snack. Well, it's not snack time yet. instead of shutting it down, like, you're not hungry. your feeling is wrong or whatever. They say, well, you're really hungry. And also, it's not snack time yet. We will get to snack time. It's this idea that like both of those things can be true and you're frustrated.

00:18:26 Speaker 1

And it's still not snack time. and there's something in being able to hold both if you're a kid, but also if you're the person saying it, that is deeply empathetic and powerful because Two things can Be true, that are not —, There are many things that are true that aren’t compatible, but aren't contradictory.

00:18:46 Speaker 1

And allowing both to be true is to me, is richer, is richer to that young person who's “Like oh, OK. Yeah, I'm acknowledged. I'm validated, even though —”. and it's important in characters. Right, it's important that Azula be able to be devious, but also, even though she is, You know. She still does love Zuko. She's just not very good at doing it. And it's probably you know, Got some toxicity in there somewhere so. I don't know.

00:19:16 Speaker 2

I think it also allows for certain, like seriousness and humorous event. Because you don't know what —, how she might have meant it sometimes and —.

00:19:25 Speaker 1

Yeah, absolutely. Absolutely. And very often, you know.

00:19:31 Speaker 1

It's OK when there's ambiguity or that there's like 90% of people perceive it one way and 10% perceive it another. There's a great character there. If you're like, not quite sure, I mean I again, it's like over a piece of chicken. Who cares, but like. But those little moments also do make a difference to characters. I think about very early on with Iroh.

00:19:56 Speaker 1

In the original —, kind of the original version that, when I kind of came on board and Mike[Micheal] and Bryan had their first scripts, he was like a stern taskmaster.

00:20:07 Speaker 1

He was very stern and flat and serious, you know. “Drill it again, Zuko”, you know that stuff. Which he does in the pilot. But we, and when I say we like me and the writing team, we're like we need to find more complexity for this character. He's going to be really Important. we need to —. and some of it is like we found a little bit of sense of humor in the fact that he was like retired. He likes tea. He has a few things that he's —, he eats a little too much, you know. He has the passion for some of the things in life, and it doesn't contradict the depth of his experience and, you know, wisdom, it actually just gives it a roundness. You start to, oh, you like him. You know? He's like, yeah, like he's got some quirks and he's humorous and he's not just, you know, an empty stern taskmaster. So, I don't know, finding those details sometimes that, you know, seem a little off topic for the character can bring something out to them or — you know.

00:21:10 Speaker 2

Yeah. So is it also like then that —, I don't want to say contradictory but like —. Avatar is, also, with Uncle Iroh for example, very good at balancing the humor and the seriousness within the same scene.

00:21:24 Speaker 1

In Yin and Yang or Yin and Yang. I'm not sure how to pronounce it. When you see it, and again there are people who Own that symbol more culturally than I do, so I'm throwing this out there. I don't think we see the black inside the white half or the white inside the black half as contradicting that half.

00:21:44 Speaker 1

They introduce that kind of balance. They introduce something different. They introduce a connection to the other, they introduce complexity, right? They don't contradict it.

00:21:56 Speaker 1

And there's something to that idea that I think you can think about characters that way. One more thing, when we're talking about seriousness and comedy and Uncle Iroh.

00:22:12 Speaker 1

You're familiar with the concept of comic relief, like Shakespeare?

00:22:14 Speaker 2

Yes.

00:22:17 Speaker 1

OK. I may be misinterpreting it. But I will tell you how I have always interpreted it. Whether this is correct or not. I have interpreted it not as relief like, oh, you need a break. Like relief like, oh, I had a headache, I took some medicine and now I have some relief. Though it is that. I interpret it more as relief the way a carving or a sculpture has relief, right, which is that the details —, the things you remove, the relief is what gives the dimension, right? So, It's the difference. So, the comedy, which is the — maybe a wave down in the drama is what makes the peak of the dramatic part seem higher. It's the difference in the depth of the comic moments that allows the serious moments to feel more serious and not drudgerous. Feel you know —, it's that kind of —, It's the difference. And the comic relief doesn't in any way undermine those dramatic moments, it accentuates.

00:23:19 Speaker 2

That's a very interesting view. Is that like, I know that's the, what was it called again? I want to say the musical in season 3. I don't know, the play season 3, but the players, the Ember Island players, I think it was called. They are very comical and they have the break where it is actually very serious.

00:23:41 Speaker 1

Yeah.

00:23:41 Speaker 2

Do you have like —, how do you decide to switch from humor to seriousness and back to know when that relief has to come?

00:23:51 Speaker 1

I think everyone's going to have their own rhythms and instincts. And I think they change at different ages and based on expectation. I mean it's— , I've definitely seen, with Dragon Prince, I've seen some people who are older audience members kind of not always love that rhythm and be like, oh, why did they make a joke there that made me —,  that undermined the drama for me.

00:24:17 Speaker 1

And so, you know, even I like, who I really appreciate the need to have both comedy and drama. I'm still working to find the correct balance and, you know. I think you just have to watch out for moments that deserve to be followed up with some quiet or seriousness and not undermine them too much with like a quick joke or something like —. You just have to try to —. It's a little bit having some audience empathy and saying well, Let's change tax now and do some comedy, but maybe they won't really want it. This drum, we don't want to undercut this, I don't know. The best I can say is instinct and empathy and play with it and take feedback, right? If you're writing something or trying something and you have a chance to evolve it, listen to what someone is telling you, not one person necessarily. Hopefully 10 people and you get different opinions and they help you shape or reshape your instincts and ideas about what you wanted to achieve, and it may be that what you wanted to achieve was that two people are deliriously happy with the scene, and eight people hate it and not that eight people kind of like it. You know, sometimes there are situations where that's what you want. So I don't know.

00:25:30 Speaker 2

You want to create still stronger emotions in a sense then.

00:25:35 Speaker 1

Yeah.

00:25:36 Speaker 2

It's like when you're making the show as well, you mentioned that you know you let the characters become their own instead of you forcing your view on it, but you're still going through the beats of the story. So how do you go through the beats while nudging them?

00:25:42 Speaker 1

Yeah. I mean, obviously there's a balance, right? There's like I am creating the story. And I am discovering the characters and letting them do what they want. So, there's sort of a balance where part of it is like you're being like a —, You're having a light touch. You're a god with a light touch. You're like, well, what if this happened? Or what if this was introduced? Or what if this —. you try to have a light touch and —, but then back off when you understand, Oh, the character is going to do this. Oh, this is how the character is going to drive it. Because If you can get to that point where once you've introduced the ideas you want, and now the characters are pushing each part of the story forward in the way you want it to. Well, it's much more powerful. So It's finding a balance. You know.

00:26:36 Speaker 1

Some of it is holding those beats of the story to the standard of: will they happen given these characters and who they are, and so you're thinking, would they do this? You just you never want to be in a situation where a story beat that you want to happen is forcing you to do something that is actually out of character for this character, or forcing someone to do something that they wouldn't really do because you need to. Now while I'm talking about being out of character just for one moment. I would also say, and this goes back to the Azula chicken moment, there are moments that seem out of character that actually are revelations of who the character is. So if you do it wrong, people see it and go, Oh my God, that's not who I knew or whatever you know. And it's very much like it's a violation of, you know, the suspense of disbelief and all the things you expect the audience to do when they come into a story because you expect them to connect to a character and know them and, You know, so if you get to that point and like this is out of character, you've messed up. However, there are many things that are like, “Oh my God. I never would have expected them to do that. But it not only does it make sense. I understand this character more deeply”. And again, if you've done this right. You've pushed back on, I mean, the forces of flanderization or whatever you called it, because now the character is not flatter. They are more nuanced. They're more unexpected.

00:28:17 Speaker 1

But again, the outcome when you have those moments has to be unexpected. But true. Organic and true. So maybe I didn't predict it, I didn't expect it. And even maybe for a moment it seemed out of character. But then I realized how deeply true it was, and it was a revelation. And everything was —,  so those are valuable moments. If you can execute them well and they're disasters if you mess them up.

00:28:42 Speaker 2

OK, I want to continue on, but before we continue on, I did get a notification like hey, the zoom meeting will stop in 10 minutes. So, before we move on to the next question, I would say like hey, I will  close this meeting, start a new one.

END PART 1

Clean transcript Part 2 V1

00:00:00 Speaker 2

Yeah. So next up, I wanted to talk about the language that you use, because Avatar is quite — is also aimed for children, of course. Did you have to change the language because of it was aimed to children that you had to limit the amount of words in the sentence or it's quite —, Yeah, the way you cuss, for example, or other ways of directiveness or subtext.

00:00:30 Speaker 1

Very little. I mean, look, I think I'm a good fit for writing that can appeal to younger audiences and adult audiences because I'm not a particularly like —. Have you heard the expression of “50 Cent word”?

00:00:47 Speaker 2

I have not.

00:00:49 Speaker 1

Okay. In American culture, or at least when I was growing up, there was an expression. There's, like, if some if you use like or an SAT word, a 50 Cent word would be like. If you said if you were like. Just using a rarely used word that sounds like something like only like a professor would use or something. Very scholarly, right? Something that not everyone understands. You know, I have always tended to be a writer who uses like, I use like an eighth grade vocabulary to the best of my ability, you know, like I try to tell the story. And part of that is like, I like telling stories and the way people talk, and people usually don't talk using fancy words. Now, there may be a character who specifically uses words like that and the risk when you use words like that is that you lose some of who you're talking to. You know you —. Maybe you impress people a little bit, or maybe there's some people who are like, oh, wow, they're so smart. Listen to those extremely fine words they're using. But then you're also the people who are like, I only understood 80% of what they just said. I don't know. So I've always just been more of a fan of, like.

00:01:57 Speaker 1

Using the simplest possible words that are the right words, if possible, right? So, there are cases where those words are — you use a word with precision and that's something that's meaningful. So anyway, in terms of writing to kids at older — if you're talking about like curse words or things like that...

00:02:16 Speaker 1

No, there were not issues with curse words, however when you're writing for Nickelodeon and this was less true for Netflix, but it was true for Nickelodeon, There's something called standards and practices that is sort of like kind of the basic understanding of what's appropriate in a show that is going to go out to younger audiences and what leads to a rating that makes it appropriate for those audiences.

00:02:40 Speaker 1

And there would be things like: Saying the word kill too often is problematic. I don't even remember. We could say it all maybe once in a while.

00:02:49 Speaker 2

There have been mentions of “kill”, but there's also very mentions of like where you avoid the word “Kill”.

00:02:54 Speaker 1

So it might be that you could say it like once an episode or something weird like that, and so the result was you'd always “I'm going to find him and end him.”

00:03:02 Speaker 1

You know, it would be like a little — and I get it. it's a little less of like a visceral word or expression to do that. You know, it gets the idea across, but it's not as kind of vulgar in a in a sense of like being just, like easily violent. It's a little more intellectually violent, I guess.

00:03:28 Speaker 1

So yeah, those moments happened when we were asked to.

00:03:32 Speaker 2

Yeah, because I think that my favorite one is still like Azula say to Zuko “I'm going to celebrate becoming an only child”

00:03:41 Speaker 1

Yeah, that's so much better than something that would have been more direct. Yeah, exactly.

00:03:47 Speaker 2

But there is instances where it is mentioned because there is, for example, Azula says like, as a child, she says to Zuko"Dad is going to kill you. He really is.” That's one of the sentences or where — Yeah, there are Some of them but it's very minimally.

00:04:03 Speaker 1

Yeah. Once in a while we needed it, so.

00:04:10 Speaker 2

So have any other people ever contacted you or contacted the crew about how the show has impacted their lives in any sense?

00:04:21 Speaker 1

Yeah, I mean actually, it's been really humbling how people have responded to the show and that very often, you know, if I'm at a convention or something, someone will nervously, like, very nervously come up and say the nicest thing in the world. It's like, you know, don't be nervous, you're saying the nicest thing, like to me and to my ears, that makes me really happy. So. Yeah. I mean, I'm really grateful that. You know. The show has been able to have an impact. That people feel as positive. That they feel like they got something out of it. I mean, I've seen jokes online about it being like. You know, my therapy is rewatching avatar or things like that. You know, it's like, that's awesome. That's amazing. And that's, you know, to me What is deep, Deeply important about —

00:05:17 Speaker 1

It is hopefully these characters are authentic enough that they feel real and that their emotions feel real and their experiences feel real in a way that —

00:05:25 Speaker 1

If you're going through hard things and you're struggling to overcome obstacles, or you're going through stuff, it resonates. Oh, I see myself in this character.

00:05:35 Speaker 1

And then my other hope is that these characters are ultimately as much as real as their struggles are as real as their challenges are.

00:05:46 Speaker 1

There's an optimism that they will overcome that they can overcome them. It may take persistence. There may be a lot of failure, there may be struggle, there may be humiliation and frustration, but there's ultimately some deep, hopefully some deep optimism.

00:06:03 Speaker 1

Positivity. These characters find that they're worth something. That they can change things. like that. Those are those are hopefully kind of the deep feelings people come away with when they watch Avatar or The Dragon Prince for that matter.

00:06:18 Speaker 2

So did you set out to like, hey, you know, I want to make an impact on people. I want to teach about these values, about these lessons to people or is it more happenstance that just happened during the show?

00:06:32 Speaker 1

I don't know. I'm not sure.  What I remember setting out to do, I remember seeing — so I had written on like Futurama and other quote-unquote adult shows before, and I thought, OK, well, this is weird. I'm working on this show now that is at Nickelodeon. It's a kid show.

00:06:51 Speaker 1

But I never wanted to write down to kids, and I thought about some shows like Robotech. I thought about some stories like Elf Quest, that mattered to me when I was young. When I was a Older kid when I was like 11 or 12. And I and they really mattered to me and they really affected my character and how I grew up and how I thought about the world.

00:07:18 Speaker 1

And I was obsessed with those shows. I loved them and they mattered to me. And that's all I thought. I was thinking oh, like this is an opportunity if I'm going to do something that's quote kids show we should make something that matters for the kids who watch it.

00:07:30 Speaker 1

Something that they can be obsessed with. And so it was like more on that sense Of like wanting kids to really be able to dig in and connect and care about it and then in terms of like the values or whatever happened to play out. I think some of that just came from who the characters were, and maybe a sense that like, I don't know, I'm not sure. I wanted it to matter. I wanted it to connect. I wanted it to be something kids would obsess with and then in terms of values. and by the way like Mike and Bryan were bringing really clear values and eastern ideas that were new to western audiences and things like that, so.

00:08:09 Speaker 1

You know, it was almost like the battle was to not make it preachy. But to have it be there. Have there be something meaningful but not forced on anyone not you know —. I think early on there is some risk that Aang could be pretty preachy and we and it wasn't effective. It wasn't effective when he was Like, you know.

00:08:36 Speaker 1

“Well, the monks always said” and it was like you actually end up sympathizing more with Sokka. You're like. “Dude, shut up.” Like, I don't, like no.

00:08:45 Speaker 1

But I don't know, but there's a place for that too.

00:08:46 Speaker 2

So how do you make sure that someone is not preachy. In that sense. because you want to give this lesson in a sense, but you don't want to make it preachy. So how did you have a process to go, how to go about that?

00:09:04 Speaker 1

I mean, you just have a sense for that when you're — Sometimes I think preachiness is wanting to be superior. There's a layer of it in a character that is like “I'm saying this cause I know a thing and you don't and now you know it.” I don't know how to. I mean, I'm doing like a crazy voice to get it across like.

00:09:24 Speaker 1

Whereas teacher teaching I think Is humble and empathetic, right. Real teaching is like how Iroh is, right? He recognized, can he even be heard, cannot be heard right now. Is there a thing I'm going to say? Even though he's not ready to hear it. Because one day, maybe he'll remember it, if he'll hear it. He's thinking, getting through to Zuko is not about him being superior. It's about having experiences and sharing the right ideas at the right time that are just enough to help Zuko connect the dots, to help Zuko grow, help Zuko evolve, right. And maybe it's something like that. Preachiness this is like saying a thing like “stealing is wrong” and teaching is telling a story about someone who was good and made a mistake and stole something and why they went through it? What drove them to that understanding that. that's teaching to me maybe and not preaching, I don't know. I mean, I'm just speculating these are not the questions.

00:10:28 Speaker 2

Yeah, I think you're formulating this very well. If I understand correctly, you're mentioning that teaching is about raising others up while preaching is about showing yourself above others. Am I getting that correct in the sense.

00:10:39 Speaker 1

I think that may be a part of it. I do think there's something to the actual communication. So yeah, there is the motive.

00:10:48 Speaker 1

Which is a preaching might have, you know, but, you know, there may be people preaching or saying things that are complex, right? That are —. I want to raise someone up, but I also want to feel more, more superior than maybe both. There's complexity there, so I don't know, it's, I think, that's part of it. And then I think there's something about the effectiveness too that maybe have to do with Some Empathy for The person whom you're trying to impart something to.

00:11:31 Speaker 2

OK. Yeah.

00:11:32 Speaker 1

I don't know.

00:11:33 Speaker 2

Yeah, it's a very difficult process as —.

00:11:35 Speaker 1

You're trying to figure out how to do something that's educational. I mean, the answer is like, yeah, be aware of. Like, if you're just having someone say a lesson, hopefully there's a depth to it. There's a reason to understand it, and it's not just, I think they're saying —, can you give me an example of the kinds of things you are hoping to do with these tools an example?

00:11:58 Speaker 2

So, one thing that I will be doing in my research is I will be making a short story where the — I will be testing beforehand — before the story. I'll ask them like, hey, what does your dietary habit look like? So, what are you eating for breakfast, lunch, dinner, for example? Are you watching your carbohydrates is one thing that we'll be watching at and seeing how healthy that is. Then write a story about nutrition, a short story between 4000—, around 4000 words, maybe between 4000 and 7000 even, and then afterwards, given the same question like hey, did your views change and after two weeks check if their actual behavior and retention of that information.

00:12:37 Speaker 1

What age? What age are you targeting?

00:12:39 Speaker 2

I'm sorry.

00:12:40 Speaker 1

What age are you doing this with?

00:12:42 Speaker 2

Currently, because of legal reasons, I can't change to minors because that takes a very long time and I only have one year in total. So currently 18 to 25 is my target audience because they're still developing in a sense. They're little young adults, and that's the lowest age I can target. So therefore 18 to 25 and after two weeks check again like hey did their eating patterns change? Did they keep the information that they got from the story do they still remember it?

00:13:14 Speaker 1

So, Is someone gonna say? Well, here's the curriculum. Here's what we want someone to learn. Is that part of it?

00:13:20 Speaker 2

No, I am just saying like, hey, you know, I'm going to write a story, and I'm going to give to another group I'm going to give the facts like, hey, this is what is in the story. So for example, in Avatar we have the, you know, stealing is wrong, for example. Right. So if one group I would show the episode so to say. And one group I would just tell stealing is wrong and then compare like, hey, after two weeks, do they still remember it and did it change their behavior In any sense. and that's what I'm doing, but on the topic of nutrition of the topic of, like, eating.

00:13:52 Speaker 1

Yeah.

00:13:53 Speaker 2

So trying to figure out right now is like, hey, you know, how did you go about it? Because your did like writing for younger audience is also applicable to adults in a sense. And there —.

00:14:05 Speaker 1

I mean —.

00:14:06 Speaker 2

Yeah.

00:14:08 Speaker 1

Do you know The expression where the rubber meets the road.

00:14:10 Speaker 2

I do not.

00:14:12 Speaker 1

OK, that's an expression that it, I mean, it's like it's a car expression, but it's like, oh, you can talk about, you know, all the like specs and details of the engine and the, you know, whatever. But at the end of the day, it's like where the tires hit the road. It's like, is it translating, is the power, are the things about this car actually translating to the car going faster or gripping the corner better or whatever, where the rubber meets the road is like that's where it matters. so here, To me, it's like.

00:14:44 Speaker 1

There's some idea that you're going to be trying to get across and see if it has affected people some weeks later.

00:14:52 Speaker 1

And there's this set of obstacles that prevent them from having that affects them, right. There's that's the road or I don't Know, Whatever, but it's like, You know, does this person eat junk food because they're, You know, they're just used to It. like are you trying to get someone to eat more vegetables? Are you trying to get someone to, you know, like what are the feelings and compulsions that make the information hard emotionally, right? So not just like, here's the information, because probably nutrition is a great example of like every single person you sit down with has already fucking heard everything. Single thing, that you would say. So it's more a question of like, can you give them an emotional lesson that allows them to hear it more deeply or to try something new, you know.

00:15:44 Speaker 2

Yeah.

00:15:44 Speaker 1

So it's sort of having the empathy to say: what causes the resistance to these ideas, which people have probably already heard. Now maybe I'm wrong, maybe there's something someone hasn't heard. But what makes people resistant to it? You know, if we were talking about a 5 year old, I would do —. I guess I would do a story about a character trying new things, and maybe they're awful every day and then. OK, there's something that's actually pretty good or I don't know. I'm not exactly sure, but I would like I would want them to see themselves in like rejecting them over and over again. “No, I don't want it.” So for That 18 to 25 year old. I don't know, I mean.

00:16:30 Speaker 1

Is it eating 2 pieces of pizza and not 4 like that's? I know that I should only eat 2 pieces of pizza and not 4 but, For most of my life, Pizza’s here and I eat four. like why, you know? So, I don't know.

00:16:46 Speaker 2

Yeah. It's about the emotional —.

00:16:47 Speaker 1

Or That's not what you're trying to impart.

00:16:48 Speaker 2

Exactly. I'm trying to see like, hey, does it have a factor for us? But if I could create a positive connection with a certain type of character that also has a positive connection towards foods or negative association, does it affect also the behavior of the reader in a sense?

00:17:03 Speaker 1

Yeah.

00:17:04 Speaker 2

And currently I'm not sure, but I'm trying to figure that out. That's what my research is about.

00:17:17 Speaker 1

I don't know.

00:17:18 Speaker 2

Yeah, I'll keep you in the loop of that if you want. At the end of the year, The end of The school year, So I would say in June, my paper will also be published and if you want I can send it to you Of course as well. But for now, yeah, I have more Questions. I don't think they're as important. I think the main thing that we can get from this is like when you wrote on Avatar: the Last Airbender, a lot of the writing just came a bit more natural. You didn't go into it to like, to just teach in a specific way and to teach certain lessons, if I'm correct. It just, Well happens.

00:17:56 Speaker 1

You know they're going to be there, but you have to. You have To Serve authenticity first.

00:18:01 Speaker 2

Yeah.

00:18:02 Speaker 1

And emotional connection 1st. And then if you can do that. You know, you earn the trust and belief of that audience and then maybe they take something away, I don't know.

00:18:14 Speaker 2

That was something that you really liked when you worked on the story?

00:18:18 Speaker 1

That I really liked?

00:18:19 Speaker 2

There was something that you really liked that when you —., while working on the story of what's happening with the characters and with the plot itself.

00:18:28 Speaker 1

Ask that question one more time.

00:18:30 Speaker 2

When you're working on the story of Avatar: The Last Airbender, what there something that you really liked about how the characters, for example, were developing?

00:18:40

[Inaudiable]

00:18:43 Speaker 1

Oh, I mean, I enjoyed that We deflanderized Zuko, you know, Zuko started more simple like “I must capture the avatar. my Honor. Blah, blah blah.” I enjoyed that slowly we were able to Make him a little more complicated. Really The moment where we realized we were —, that —, You know, the occasional discordant notes of complexity in him could become a song was in that Zuko alone episode halfway through season 2, it's like, oh, here we go. He's a real character. He's not just an obsessed villain. So I enjoyed that a lot.

00:19:20 Speaker 2

And was that was that plan —, you were planning for three seasons or was that planned that transition or was it just like that's how the character like, is it naturally evolved?

00:19:29 Speaker 1

Yeah. So Mike and Bryan planned for Zuko to switch sides and become a good guy at the End of season 2. So that that was in the plan.

00:19:41 Speaker 1

I think what maybe wasn't in the plan. as much. Or I don't know, what I'm talking About more is like, how did we unravel him in a good way so that he wasn't just this tight, you know, I must capture the avatar guy, but became a little more. I mean, he's still a stiff at the end But He's a much more complex. We see goodness in him. We see, you know. Humorous awkwardness and things like that. So. I don't know.

00:20:13 Speaker 1

It was part of the plan. That he would switch sides. It was not part of plan how we would get there and how we would evolve his Character in a way That made it believable that he was changing and that made it feel like real redemption. That was a challenge. That was —, that was not obvious from the beginning. That was something we had to figure out, and we had to follow Zuko.

00:20:37 Speaker 1

And we had to follow Iroh and, you know, one of the big pivot points for that was at the end of Season 2, which was actually in the original plan. That was when he Was going to switch.

00:20:48 Speaker 1

This was a moment where we had — where I knew and realized, actually Azula was giving him the opportunity to go home and as bad as it feels, as much as we all want him to change sides, as much as we all want him to listen to Iroh and find himself, he's not ready Yet.

00:21:04 Speaker 1

And he's going to go with Azula because he's always wanted it, and it's going to hurt. But that's where he has to go to really find himself. So there are moments like that occur so.

00:21:14 Speaker 2

OK, wow. Yeah, that's great insight to know, Like, you have this story beats in a sense, but you just move them until it feels ready for the character to be there. Yeah. I think the rest of the — I have what I need for the rest of my research. For now, I think so. It's been really great to meet and talk with you. I have like a lot of friends who always like. Ohh. You're meeting with that person. Wow. You with Aaron. Like that's yeah. So.

00:21:44 Speaker 1

Tell them to watch the Dragon Prince. We gotta make more awesome stuff I need people to watch it on Netflix so There you go.

00:21:49 Speaker 2

I will tell my friends that. Yeah, I will talk to all the narrative designs as well about it. for now, It was very nice meeting you. I will send you the transcript of this as well. After I have written it out all.

# Appendix B: Participant gathering

The participants will be found through the following means:

1. Redditpost on the subreddits:
   1. r/writing
   2. r/pedagogy
   3. r/research
   4. r/shortstories
   5. R/samplesizeUK
   6. r/samplesize
2. Linkedin post on
   1. UX Writing & Content Design
   2. Mastering the Art of Writing: A Group for Content Writers
   3. Technical Writing Community
   4. Brainstorming For Writers
   5. Technical Writing & Content Management
   6. Book Writing, Self Publishing & Marketing
   7. Creative Writers, Artists & Designers
   8. Teaching Short Story Writing
   9. Book Story: Writers Authors Poets Readers ~~ writing editing design publication marketing
3. Facebook post groups
   1. A Novel Connection: Promote Your Books
   2. Authors Promoting Authors
   3. Authors & Writers - Book Promotion & Discussion
   4. All Things Books
   5. AUTHORS AND WRITERS
   6. Book writing and editing
   7. Book Promotion
   8. Book Writing, Editing, Publishing & Marketing. Write and Grow Rich!
   9. Inner Circle Writers' Group
   10. Indie author book promotions
   11. New Writers and Authors
   12. Promote your book
   13. Surveycircle
   14. Short stories and poetry writers
   15. THE WRITERS FORUM
   16. The writer’s link
   17. Writers Community
   18. Writers Group
   19. The Writing Writers
   20. #WriteTip： Writing Tips, Tricks, Tools, Techniques and Theories
4. Discord post groups
   1. creative writing club(Breda University club)
   2. BUAS Narrative guild
   3. narrative house
   4. The writing hub
   5. Mages of Pages
   6. Writers bubble
   7. The writers factory
   8. Fantasy Writers Forever!
   9. Bookdun
5. Whatsapp groups
   1. Writing club sunday
6. print flyers on breda university
7. Debate club Tilburg
8. friends and family texts
9. Unilife
10. surveyswap

# Appendix C: Message on Forums

Hi everyone,

I am part of a narrative research study and could use your help. I’m looking for people aged 18 to 25 to fill out a short survey. It takes about 15 minutes and is anonymous. The goal of the study is to help writers create better stories. I would really appreciate it if you could fill this in and send it to friends & family. The more people fill it in, the better. You can sign up for the study with the link below, you will then get an email with the survey within 5 minutes. Thanks in advance.

Link: <https://forms.gle/h1ZYzhM5MDsvc4NA6>

A qr code on a white background

AI-generated content may be incorrect.

Figure 7.1. QR code for sign up form

# Appendix D: Leaflet



Figure 7.2 Leaflet

# Appendix E: Participation survey

By sending us your email you consent to partake in the study.

During any point of the study you stop partaking in the study. If you choose to stop, you will not be able to start again.

You will be only be allowed to partake once in this study.

After filling in your email address and pressing submit, you will be send an automated email with the survey within 5 minutes. Please check your spam folder for an email from [REDACTED EMAILADDRESS].

# Appendix F: Script survey automation

function sendRandomSurvey(e) {

var sheet = SpreadsheetApp.getActiveSpreadsheet();

var responseSheet = sheet.getSheets()[0]; // Assumes the first sheet stores responses

var surveyLinks = sheet.getSheetByName("Survey Links"); // Tab with survey links

var emailColumn = 2; // Column with email addresses (adjust if necessary)

var sentColumn = 4; // Column to track if a survey has been sent

var links = surveyLinks.getRange("A1:A3").getValues().flat(); // Survey links array

var lastRow = responseSheet.getLastRow();

var email = responseSheet.getRange(lastRow, emailColumn).getValue();

var surveySent = responseSheet.getRange(lastRow, sentColumn).getValue();

if (!surveySent) {

// Choose a random link

var randomLink = links[Math.floor(Math.random() \* links.length)];

// Send email

GmailApp.sendEmail(

email,

"Your Survey Invitation",

`Thank you for participating! Please complete the survey here: ${randomLink}`

);

// Mark as sent

responseSheet.getRange(lastRow, sentColumn).setValue("Sent");

}

}

function setTrigger() {

var sheet = SpreadsheetApp.getActiveSpreadsheet();

ScriptApp.newTrigger("sendRandomSurvey")

.forSpreadsheet(sheet)

.onFormSubmit()

.create();

}

# Appendix G: Pre-stimulus form

## Consent form

Researchers: Leon van den Berg, Breda University of Applied Sciences, 151447@buas.nl

Welcome to this study.

In this narrative study we ask a few demographics followed by the reading of a short story. After reading, you will be asked to fill in a short survey. The study will take approximately 20 minutes in total. The goal of this study is to identify variables that have to be taken into account when creating stories.

If you have any questions regarding the research, you can contact Leon van den Berg (151447@buas.nl).

By agreeing to take part in this study, you confirm the following:

* You are at least 18 years old and not older than 25 years.
* You have not participated before in this survey.
* You will not share the story or questions in this study or talk about the study in such a way to bias other potential participants.
* To not look up information regarding the questions in this study while actively participating in this survey.
* You have had ample time and opportunity to contact the researcher for any clarifications or questions regarding the study and your participation.
* That you had sufficient time to decide whether you would participate or not.
* Your participation is voluntarily and you maintain your right to withdraw from this study at any time, without any negative consequences and without explanation.
* You consent to your survey answers being collected, anonymized, and used as data for research purposes and related publications.
* Your data may be securely stored and used solely for the purposes of this research.
* That you have the right to request access to your collected research data as well as to rectify it. You also understand you have the right to request the erasing of your research data.
* That you will fill in the survey honestly and to the best of your knowledge.
* You understand that your anonymized words may be used in reports and other publications as a result of this study.
* You might be contacted two weeks after filling in the survey for a 10 minute follow up survey.
* Your views on certain health related topics within the story might change.

I have read and agree to the above mentioned conditions

* Yes

Please describe what you already know about this study besides what has been said in the consent form.

…….…….…….…….…….…….…….…….…….…….…….…….

Please write your email address

…….…….…….…….…….…….…….…….…….…….…….…….

## Demographic questions

What is your age?

…….…….…….…….…….…….…….…….…….…….…….…….

What is your gender by birth?

…….…….…….…….…….…….…….…….…….…….…….…….

What is your last received degree?

* Didn’t Finish High School/12th grade
* High School Graduate or GED (General Education Diploma)
* Associate degree(2 years of college)
* College bachelors graduate(BA or BS)
* Master’s degree (or other post-graduate training)
* Doctoral degree (PhD., MD, EdD, DVM, DDS, JD, etc)

Are you currently studying for a form of higher education?

* Yes
* No

What is the main language you use in your daily life (e.g., at work, home, or with friends)?

…….…….…….…….…….…….…….…….…….…….…….…….

How did you learn about this study?

…….…….…….…….…….…….…….…….…….…….…….…….

# Appendix H: facts Chlamydia

**What is Chlamydia?**

Chlamydia trachomatis *infections* are the most prevalent of all sexually transmitted diseases and, since 1994, have comprised the largest proportion of all STDs reported to the Centers for Disease Control. Chlamydia is a bacterial infection that can easily be cured with antibiotics, but it is usually asymptomatic and often undiagnosed. Untreated, it can cause severe health consequences for women,

**How do I Get Chlamydia?**

Chlamydia can be transmitted during vaginal, anal, or oral sex. Chlamydia can also be passed from an infected mother to her baby during vaginal childbirth. Any sexually active person can be infected with chlamydia. The greater the number of sex partners, the greater the risk of infection.

**What Are the Symptoms?**

In women, the bacteria initially infect the cervix and the urethra (urine canal). Women who have symptoms might have an abnormal vaginal discharge or a burning sensation when urinating. When the infection spreads from the cervix to the fallopian tubes (tubes that carry eggs from the ovaries to the uterus), some women still have no signs or symptoms; others have lower abdominal pain, low back pain, nausea, fever, pain during intercourse, or bleeding between menstrual periods.

About half of infected men have no symptoms. If symptoms do occur, they usually appear within 1 to 3 weeks after exposure. Men with signs or symptoms might have a discharge from their penis or a burning sensation when urinating. Men might also have burning and itching around the opening of the penis. Pain and swelling in the testicles are uncommon.

**How Do I Find Out if I Have Chlamydia?**

There are laboratory tests to diagnose chlamydia. Some can be performed on urine, other tests require that a specimen be collected from a site such as the penis or cervix. All sex partners should be evaluated, tested, and treated. Persons with chlamydia should abstain from sexual intercourse until they and their sex partners have completed treatment, otherwise re-infection is possible.

**Am I at Risk for Contracting Chlamydia?**

An estimated 2.8 million Americans are infected with chlamydia each year. In 2004, the overall rate of reported chlamydia infection among women in the United States was over 3 times higher than the rate among men. Women are frequently re-infected if their sex partners are not treated. Among women, the highest age-specific rates of reported chlamydia in 2004 were among 15- to 19-year-olds and 20- to 24-year-olds. Age-specific rates among men, while substantially lower than the rates in women, were highest in the 20- to 24-year-olds.

**How is Chlamydia Treated?**

Chlamydia can be easily treated and cured with antibiotics.

**How Can I Avoid Getting Chlamydia?**

The surest way to avoid transmission of sexually transmitted diseases is to abstain from sexual contact, or to be in a long-term mutually monogamous relationship with a partner who has been tested and is known to be uninfected. Latex male condoms, when used consistently and correctly, can reduce the risk of transmission of Chlamydia.

# Appendix I: Story low integration Chlamydia

Tammy was late. Again. She was supposed to be to work in five minutes, and she still had to stop for something to eat.

“Can’t you just grab some popcorn? George wouldn’t care, y’know.” Andi’s voice boomed through the tiny ear piece. Andi, a fellow Chi O, was Tammy’s only friend who managed to sound as loud over a cell phone as she did in person.

Tammy started her car and backed out of the parking space, glancing in her mirror as she did so. Couldn’t be too careful on campus, especially not after that kid on the bike was killed last year.

“No, y’know I can’t handle popcorn anymore. It’s all I ate the first semester I worked there,” Tammy laughed. It was true, though—all the free popcorn you wanted seemed like a nice perk of working at a movie theater at first. However, after weeks of eating it for dinner every night that she worked, she’d reached her limit. Just the smell made any hunger pangs she was feeling run and hide.

“Fair ‘nough. Just don’t stop at Subway. Last time I was there, I threw up for, like, two days, I swear.”

“Nope, McDonald’s. I can’t get enough of their McNuggets—they must fill those things with heroin.” She pulled out the parking garage and began to head off-campus, a winding, annoying trip of one-way streets that looped around to a main street. She wondered who thought that would ever be a good set-up.

“Listen to this, Jul. Apparently now Britney is apologizing for that whole baby on the lap while driving thing. You can’t hardly drive with the radio on, and she’s drivin’ around while holding a baby?”

“That might be true. And, somehow, you still insist on reading me magazines while I drive. So who’s really to blame?” Tammy joked back.

“I know. No one else is here now, though, you know that. It’s always dead around here on Thursday afternoons. And you work on Thursday afternoons. So, see, it just works out so well.”

“Can’t argue with that logic, I s’pose,” Tammy said as she pulled out onto the street that led her off of campus and toward those golden arches. “Okay, what else’ve you got today?”

Andi started reading about the current dramas of the stars: Brangelina’s growing child and Jennifer’s reactions; the newest gay cowboy jokes; a round-up of the newest happenings on American Idol. Tammy tuned out as she glanced at the clock as she slowed for a stop sign: 3:02. She was officially late. Hopefully George either wouldn’t notice or wouldn’t care too much. She needed the job, more this semester as her parents slowly cut her off at home. Since their divorce two years ago, each had been working as hard as possible, it seemed, to be the parent who made the least—that way they wouldn’t get stuck with the bulk of her tuition. So, she needed the job right now. Unfortunately, she’d been late a lot recently. With eighteen hours this semester, plus Chi O stuff, plus her job, plus Jason—a nice, but time-consuming, new addition to her life—she felt she was always running somewhere and always behind.

“Here’s one for you: Chlamydia, the STD you might not even realize you have,” Andi affected an overly serious tone as she read the headline, which pulled Tammy back from her thoughts and into the conversation. She began to pull statistics from the article, “Chlamydia is the most commonly reported STD in the US and affects an estimated 2.8 million Americans a year. The rates among women are 3 times higher than that among men. …Have you and Jason talked about this?”

“Oh, so funny.”

“No, really, you should ask him. Apparently for women, it’s most common among 15- to 19-year-olds and for men it’s 20- to 24-year-olds—you both fit that! But it’s easy to fix with some antibiotics. And there are a couple easy tests to detect it: He could get a urine test—for once, he’d have to pee on the stick—or they do some sort of swab thing, which can’t be pleasant. But it says here that probably half of the guys who have it don’t even know it. They don’t have any symptoms or anything. He could be a walking bacteria factory. Have you asked him if it hurts when he pees—apparently if he’s going to have symptoms, that’s a big one,” she giggled as she read.

“Screw off, Andi.”

“Okay, okay, fair ‘nough. But still, it does sound quite nasty. If you’re lucky enough to have symptoms, you could get a little burning, a little discharge—love the vaginal discharge—maybe painful sex, nausea, fever, cramps, lower back pain … should I keep going on?”

“Ooo, yes, read me more. You really know how to make a girl hungry.”

“Are you there yet?”

“Yeah,” Tammy said as she pulled into the parking lot of the McDonald’s and made her way around to the drive-thru window.

“Ouch, how come women always seem to have it the worst? Says here that women who go untreated can develop pelvic inflammatory disease, ectopic pregnancy, and infertility. None of those sound nice.”

“Yeah, women are always screwed. Hold on a minute, ‘kay?” Tammy leaned out the window toward the drive-thru microphone, which piped a muffled, “Welcome to McDonald’s. How can I help you today?” She looked at the dollar menu, despite the fact she always got the same thing. “Yeah, can I get a four-piece Chicken McNugget, medium fries and a medium Diet Coke?”

She dipped her hand into her purse as she pulled around the drive-thru lane’s curve, glancing down to see what bills she pulled out.

“‘Kay, go ahead,” she told Andi, as she pulled a five dollars from her bag. The dollar menu had been her saving grace recently. She paid at the window and waited for her food. 3:08. Chances were dwindling that George would miss her absence. It would be at least quarter after before she’d get there now.

“Not much else. All the standard warnings: You should ideally be abstinent (right), or, if that proves too tough to handle, at least, monogamous; you all should be tested; he should wear a condom. Nothing you haven’t heard before, I’m sure. If you do have it, though, it says that you both need to get treatment or you can just reinfect each other. Which makes sense, I guess.”

“Makes sense to me,” Tammy replied, half paying attention as she grabbed her food from the woman at the window. “Thanks,” she said, pulling a fry from the bag as she set it down on the passenger seat.

As she turned back onto the street, Tammy didn’t even see the car that had pulled out of the parking lot next to the McDonald’s, only realizing she’d hit it as the screech of metal cut through the air and her teeth slammed through her fry. She jerked against the seat-belt, which locked and sent her crashing back into the driver’s seat. Her earpiece slipped from her ear, the bag of food, her phone and her purse dumped across the floor of the car, the car itself veered off unevenly to the side even as it came to a stop. Everything stopped, and Tammy sat in the driver’s seat, her chest aching, her breath not quite coming.

“Tammy…Tammy!” Andi’s voice now sounded distant and tiny, floating up from the earpiece that lay on the console.

Automatically, not yet in control of her body, she reached down and picked up the earpiece, pushing it snuggly back into place.

“I, uh, I’ve gotta go, Andi. I’ll call you back,” her voice sounded as far away to her as Andi’s had.

“Jesus, Tammy, are you okay? What the hell happened?”

“Nothing…. I’m fine. I, uh, I hit a car. I need to go. Call you back,” she hit the END button.

Someone was at her car window, at her level, talking through the window. “Hey, you alright in there? You okay? I didn’t even see you.” It was a guy, and he was talking.

And vaguely, Tammy knew she had to get out of the car. She had to talk to him. She was fine, but couldn’t seem to say that. Fumbling for the seatbelt, she pushed the button and released herself from its confines. This seemed to help her breathing, and she managed to get the door open and pull herself out.

“You okay? Man, I can’t believe we crashed! I never—look, I’m really sorry.”

Okay, she told herself, take a deep breath. She did, and felt better. Took another. Her first coherent thought was that she needed to call George: She was definitely going to be late to work now. But, she thought, this must count as a good excuse. Silver linings, right?

“I’m okay,” she said to the man whose car she collided with. “Are you?”

# Appendix J: Story high integration Chlamydia

“Tammy Warner,” she says her name in that hushed tone people seemed to reserve for libraries and doctor’s offices. She wishes she were at the library, glancing around the waiting room at the handful of other women who are seated randomly around its peach-colored interior. They read or watch the television and she hopes that they are not listening to her. “I’m supposed to have an appointment with Dr. Edgars at 2:15.”

“Just have a seat, Tammy, and we’ll call your name when it’s time.” The receptionist smiles that professional smile that she probably shows to new mothers and cervical cancer patients alike.

Tammy knows no one likes going to the doctor, but she thinks she holds a special sort of distaste for it. And no doctor is worse than the gyno. Sometimes she wonders what sort of equivalent men face, but she can never come up with anything quite as invasive—not even the prostate exam they start getting someday.

She sits down and picks up a copy of Women’s Day that looks well read. It might be the same one she looked at last time she was here—it’d only been a couple months, after all. As she flips idly through it, barely seeing the pictures let alone actually reading anything, her mind turns to Jason.

They’d been seeing each other exclusively for almost a year now. They had met during his senior year, her freshman, in a gen ed. In a class of hundreds, they sat next to each other on the first day and began talking as a way of passing 75 dull minutes. He was crushingly hot in that sort of rock star way that was so unusual on what she most often felt was a jock-filled campus. One day, he’d asked her if she wanted to grab some food after class, and from there everything developed pretty naturally. He was like a silver lining in a world full of school and work-related activities. They saw each other most days and spent several nights a week together. Their friends got along fine; her Chi-O sisters approved; she’d met his family over the holidays: She thought she could trust him.

And yet, Friday night, they had both come back to his place, more than a little drunk. Her friend had just told her about a way to avoid hangovers: take two vitamins and drink some water before going to bed. It sounded better than spending Saturday sick, so she went to grab some vitamins from Jason’s medicine cabinet, and that’s when she found the antibiotics. She poured out the contents of the tiny orange bottle and counted — he hadn’t taken a single pill! No wonder none of her symptoms had disappeared!

“What were you thinking?” she confronted him immediately, something that probably would have gone more smoothly were they sober. But he *should* have taken them all.

When she had first given Jason the prescription for the pills two months ago, she’d explained everything. She told him that she had gone to the doctor because sex had been painful recently, it had hurt to pee, and she’d been running a low grade fever for about a week. She didn’t know what to think, but it concerned her enough to look into it. She told the doctor about her symptoms, and he’d asked her if she had experienced any others: nausea, lower abdominal pain, vaginal discharge. She said she no, thinking that might be a good sign. He asked her about her sexual activity, noting that if she wasn’t abstinent, then being in a long-term monogamous relationship and insisting on condom use were the best ways to protect yourself from disease. She assured him that she was in just such a relationship, omitting the fact that they didn’t use condoms. But after a year together…? After running a series of tests, including the standard “pee in a cup” test and the (more humiliating, she felt) one where the nurse swabbed her insides with a giant Q-Tip, the doctor told her that she had Chlamydia, one of the most commonly reported sexually-transmitted diseases. 2.8 million people in this country alone are infected each year, he’d told her, among a number of other statistics that she tried to commit to memory as he spoke them. Statistics like, since she was 19 and Jason was 22, they both fell within the age groups that are at the highest risk—15- to 19-year olds for women, and 20- to 24-year-olds for men. She related them now to Jason, trying to sound as “scientific” as possible because it made the conversation seem less … weird.

“So, he wants me to take the drugs, too? But I feel fine,” Jason had said.

“My doctor says that most people don’t have any symptoms. But men experience even less symptoms than women – only about half of the guys who have it even know they do. And, when they do have some, like burning when they go to the bathroom, they might not report it. So, even though women report it 3 times more than men, that doesn’t mean men don’t have it just as frequently.”

Jason was silent, looking extremely uncomfortable. She could understand—it wasn’t exactly something she was dying to talk about. Still she *was* talking about it, and it was something they both needed to deal with.

“Look, I’m not asking you to go get tested or anything like that. I just need to make sure that we both get rid of it, if we do both have it. Which chances are we do, given the amount of time we spend there,” she motioned with her eyes toward his bed. “I’m not saying I got it from you, or anything, but if I have it, we both probably do. And re-infection is really common if both partners don’t do something about it. It’s really easy to treat with these simple antibiotics,” she waved the prescription at him.

And, she didn’t say this, but while it didn’t have long-term consequences for men, Dr. Edgars outlined the potentially severe health consequences for women who go untreated: pelvic inflammatory disease, ectopic pregnancy, even infertility. None of which sounded pleasant.

“Well, it’s just some pills, right?” He smiled and pulled her closer, “If it helps us continue to spend time there”—now *he* motioned to the bed—“then I’m all for it.”

And she had thought that was it. She’d taken the antibiotics over the next several days, and did feel better while she was on them. However, as soon as she stopped, everything seemed to come back—it hurt to have sex and to go to the bathroom, and her fever returned. She had waited for it to get better, thinking that maybe it just took a while for her body to return to normal.

She was still waiting the night that she found out Jason hadn’t taken any of the antibiotics.

And he had no excuse. He drunkenly mumbled something about not wanting to take anything he didn’t need to and that she was the only one who definitely had the disease. They fought, and although she can play it over word-for-word in her head, she tries to focus on the magazine pages. The thing she can’t get over, what she keeps seeing, is his uncaring look. He looked more interested at the Xbox game that stood paused on his television screen, which he kept glancing at during the fight. It was so unlike him—not to be cliché, she tells herself, but he always listened to her. Which is why his actions strike her as so bizarre. She wonders if it was just because he was uncomfortable. If his discomfort could be so great as to make him avoid doing something so simple as taking some pills that, if nothing was wrong with him, wouldn’t do him any harm any way. So great as to cause a fight that seems like it could end their relationship. She tries to see herself trusting him again, but can’t.

“Tammy Warner.”

The name, called out into the near-silence of the waiting room, silence broken only by the televisions, breaks into her thoughts. She looks up, her breath caught. Across the room, a nurse waits in the door that connects to the rest of the office and the examination rooms. She smiles benignly at Tammy.

It can’t be that bad. After all, it was only a couple of months ago that she was diagnosed. She is sure, she reminds herself, that nothing could have gotten that much worse in that amount of time. Except her relationship with Jason, the other voice inside her points out. That certainly seems to have gone to shit. The roiling that travels from her stomach up to her throat and back down again belies the calming thoughts she tries to insist upon.

A sigh. Put down the magazine, she tells herself. Stand up.

Here you go.

# 

# Appendix K: Post-Stimulus Questions

## Transportation questions

The following questions are about how you feel as part of the story. Please fill in how much you agree with the following statements

While I was reading the narrative, I could easily picture the events in it taking place.

While I was reading the narrative, activity going on in the room around me was on my mind.

I could picture myself in the scenes of events described in the narrative.

I was mentally involved in the story while reading it.

After finishing the narrative, I found it easy to put it out of my mind.

I wanted to learn how the narrative ended.

The narrative affected me emotionally.

I found myself thinking of ways the narrative could have turned out differently.

I found my mind wandering while reading the narrative.

The events in the narrative are relevant to my everyday life.

The events in the narrative have changed my life.

While reading the narrative I had a vivid image of the main character.

## Identification questions

The following questions are about how you feel towards the events and characters in the story. Please fill in how much you agree with the following statements

While reading the story, I felt as if I was part of the action.

While reading the story, I forgot myself and was fully absorbed.

I was able to understand the events in the story in a manner similar to that in which the main character understood them.

I think I have a good understanding of the main character.

I tend to understand the reasons why the main character does what he/she does.

While reading the story, I could feel the emotions the main character portrayed.

While reading, I felt I could really get into the main character’s head.

At key moments in the story, I felt I knew exactly what the main character was going through.

While reading this story, I wanted the main character to succeed in achieving his/her goal.

When the main character succeeded, I felt joy but when he/she failed, I was sad.

## Personal relevance

The following questions are about relevant the story is to you. Please fill in how much you agree with the following statements.

I relate to the main character of the story.

I saw myself as one of the characters in the story.

I saw myself in the situation in the story.

This story reminded me of my own experiences.

The story topic was relevant to my current life or concerns.

The story changes the way I think about some real-world issues.

I can imagine applying a lesson or insight from the story in my own life.

## Recall questions

Please do not look back at the story or look up information about the topic when filling in these questions as it would defeat the purpose of this study

According to the story you read, what are some common symptoms of chlamydia?

…….…….…….…….…….…….…….…….…….…….…….…….

Who is most likely to report having chlamydia?

…….…….…….…….…….…….…….…….…….…….…….…….

What are the three ways you can protect yourself against chlamydia?

…….…….…….…….…….…….…….…….…….…….…….…….

Approximately how many people are affected by chlamydia each in the U.S.?

…….…….…….…….…….…….…….…….…….…….…….…….

What two tests are used to detect chlamydia?

…….…….…….…….…….…….…….…….…….…….…….…….

For both men and woman, what age group is most at risk for contracting chlamydia?

…….…….…….…….…….…….…….…….…….…….…….…….

How is chlamydia treated?

…….…….…….…….…….…….…….…….…….…….…….…….

What is the most common symptom for men who are infected with chlamydia?

…….…….…….…….…….…….…….…….…….…….…….…….

What are the long term risks for women who contract chlamydia?

…….…….…….…….…….…….…….…….…….…….…….…….

## ~~Learning questions~~

~~I have learned something from this story.~~

~~The message of the story was clear to me.~~

~~The story made me curious to learn more about the topic.~~

~~I had a lot of prior knowledge about the topic addressed in the story.~~

~~The story challenges the cultural and/or societal values I hold.~~

## Integration check

Please rate to what degree you believe the health information in the story was an integral part of story.

## #Systematic Message processing

I thought about what actions I myself might take based on what I read.

I found myself making connections between the story and what I’ve read or heard about elsewhere.

I thought about how what I had read related to other things I know.

## Audience Evaluation questions

How much did you enjoy this story?

How enjoyable do you find the subject matter?

How enjoyable do you find this type of story?

How interesting did you find this story?

How interesting did you find the characters in this story?

How interesting did you find the subject matter?

How entertaining did you find this story?

How realistic did you find this story?

How realistic did you find the characters in this story?

How realistic did you find the writing style of this story?

Would you recommend this story to a friend?

# Appendix L: Judging open questions

The maximum value for any question is 1.

Any empty cell is replaced with 0.

any cell with a singular symbol or any form of ‘I do not know the answer’, is replaced with 0

To questions that have multiple answers; answers that are incorrect do not reduce the amount of points given. It is also not noted down when a lot of people have the same wrong answer.

To questions that have multiple answers: It is not being tracked which answer they say is correct.

mistakes are not counted.

## 1: According to the story you read, what are some common symptoms of chlamydia?

Woman:

* infect the cervix and the urethra (urine canal)
* burning sensation when urinating
* abnormal vaginal discharge
* lower abdominal pain
* low back pain
* nausea
* fever
* pain during intercourse
* bleeding between menstrual periods.
* pelvic inflammatory disease, ectopic pregnancy, even infertility.
* burning sensation around vagina
* vaginal discharge
* cramps

Men

* discharge from their penis
* burning sensation when urinating
* burning and itching around the opening of the penis
* Pain and swelling in the testicles
* hurts when he pees
* peeing hurts

Note: any of the above mentioned symptoms give a total of 1 point.

0

## 2: Who is most likely to report having chlamydia?

* women / young woman(0.5)
* for woman 15 and 19 years old (0.25)
* for men between 20 and 24 years old. (0.25)
  + saying 20-25 years old is considered 0 points.
* young adults(0)
* people with multiple sex partners(0)
* The woman(0)
  + Refers to the character.

## 3: What are the three ways you can protect yourself against chlamydia?

* abstain from sex(⅓)
* monogamous relationship (⅓)
* condoms(⅓)
* practising safe sex(0)
* antibiotics(0)
* protection(0)
* frequent testing(0)

## 4: Approximately how many people are affected by chlamydia each year in the U.S.?

* 2.8 million (1)
* 2.8 (0)

## 5: What two tests are used to detect chlamydia?

* Urine tests / pee / urinate(0.5)
* Swab tests / Taking material from inside the vagina/penis(0.5)

## 6: For both men and women, what age group is most at risk for contracting chlamydia?

Woman: 15 to 19 year old(0.5)

Men: 20 to 24 year old(0.5)

young adults: 0

Note: if participants did not specify the gender of the age group the answer is deemed incorrect.

Note: 20 to 24 year old for woman has been removed as some integration stories do not provide this answer.

Note: even if participants mention the age off by 1(for example 25 or 23) the answer is considered incorrect. It has been considered to judge based on single ages(15,19,20,24), however this was deemed too in depth and unlikely to make significant change.

## 7: How is chlamydia treated?

* antibiotics(1)
* go to doctor(0)
* Pills(0)

## 8: What is the most common symptom for men who are infected with chlamydia?

* hurts when peeing / burning when in bathroom / burning and itching around opening of penis / painful urination / discharge from their penis (1)
* it is common for men not to show symptoms (0)
* Pain and swelling in the testicles(0)
* irritation (0)
* discharge (0)
* hard to pee (0)

## 9: What are the long term risks for women who contract chlamydia?

* pelvic inflammatory disease / pelvic inflammation(0.33)
* ectopic pregnancy(0.33)
* infertility(0.33)
* death(0)
* health issues (0)
* easier reinfection(0)
* pelvic pain / Chronic pelvic pains (0)
* infection (0)
* lower fertility (0)
* infection in the uterus(0)
* vaginal pain

Note: This questions is not included in the fact sheet, since it is not mentioned.

# Appendix M: Data analysis details

How to do analysis:

* Clean up
  + In the google form create a new tab called “Clean Data”
  + Copy all data from “All data” into the “Clean Data” sheet
  + Remove any participant row where the age does not lie between 18 and 25
  + Remove any participant row that did not fill in enough answers
  + Remove any participants row that have a substantial bias
  + Remove any column that is empty or nearly empty
  + Mark any empty cell as red
  + Add inverted columns for T2, T5, T9, SMP7, SMP8, SMP9 and fill them with the formula “=8 - [previous cell]”
* Set variables
  + Download the sheet
  + Remove all other sheets except Clean Data
  + Remove the ID, OTHER, and LOOKEDUP column
  + Remove the second row with the codes
  + Open SPSS -> File -> import data -> excel and set the header
  + In variable view set the names as the codes in the second row of google sheets
  + Set CODE and TYPE to the measure of nominal.
  + Set D4 to the measure of ordinal
  + Set D1, all Transportation, Identification, Personal relevance, Recall, SMP, And Audience evaluation, Integration questions to the measure of Scale.
  + **Create new variables**
    - **Click on transform**
  + Fill in values
* Analysis
  + Make each measurement scale into new dependent scale variables
    - SPSS -> Transform -> compute variable
    - Name target variable ‘[Scale name]Total’
    - Filter by: mean, press button up
    - Select all questions of the scale(transportation, identification, etc) that are relevant and thus not the non-inverted ones. Make sure there is a comma between them
  + One way ANOVA
    - SPSS -> Analyze -> General Linear Model -> Unavariate
    - In fixed vector add Type
    - In Dependent variable add [Scale name]Total/ Integration
    - Click on options, enable Descriptive statistics & enable effect size
    - Click on EM Means -> display means for Integration and enable Compare main effects
    - Read out the descriptive statistics for Mean and SD.
    - Read out the Univariate Tests for p-value(significance) should be smaller than 0.05 for significance.
    - Read out the Univariate Tests for F(X, Y) = Z as X = Contrast df, Y = Error df, Z = Contrast F
  + Frequency table
    - SPSS - > analyse -> descriptive statistics -> frequencies
    - Add demographic variables.
  + Correlation analysis
    - SPSS -> analyse -> correlate -> bivariate
    - Add 2 scale variables
* Add a new row for inverted number and invert the numbers that need to be inverted
  + Transportation
  + SMP?
  + Google sheet formule =8 – [target box]
* Download google sheets
* Remove all sheets except Clean Data

# Appendix N: Two week later script

function sendFollowUpEmails() {

var sheet = SpreadsheetApp.getActiveSpreadsheet().getActiveSheet();

var data = sheet.getDataRange().getValues(); // Get all data from the sheet

var today = new Date();

var emailColumn = 3; // Column with email addresses (adjust if necessary)

var dateColumn = 1; // Column with "Date Added"

var followUpColumn = 68; // Column with "Follow-Up Sent" status, Column BP

var formLink = "https://forms.gle/RL6cKaCch66hghq99"; // Replace with your new form link

for (var i = 1; i < data.length; i++) {

var email = data[i][emailColumn - 1];

var dateAdded = data[i][dateColumn - 1];

var followUpSent = data[i][followUpColumn - 1];

if (email && dateAdded && !followUpSent) {

var timeDifference = (today - new Date(dateAdded)) / (1000 \* 60 \* 60 \* 24); // Calculate days since submission

if (timeDifference >= 14) {

// Send follow-up email

GmailApp.sendEmail(

email,

"Follow-Up Survey",

`Previously you have participated in a narrative survey. You have been randomly selected to do a follow-up. We would like to do a small 10 minute follow-up. Here is the link to your follow-up survey: ${formLink}`

);

// Mark as sent

sheet.getRange(i + 1, followUpColumn).setValue("Sent");

}

}

}

}

function setDailyTrigger() {

// Create a trigger to run the script daily

ScriptApp.newTrigger("sendFollowUpEmails")

.timeBased()

.everyDays(1)

.create();

}

# Appendix O: Survey tool considerations

For this study the following survey tools have been considered:

1. Google forms. This tool is easy to use and can use scripting. However there is always an option to go back to the previous page. This creates the problem that people can go back to the story again to reread it and therefore bias their answers post-stimuli.
2. Microsoft forms. This tool only allows for one page of questions, therefore making it not useful for stimulus testing.
3. Typeform. This type of survey tool only allows one question to be asked at the time and therefore does not have sections. This causes for double the amount of clicks and might tire the participant out faster when having multiple questions. This form type makes sure participants cannot go back to previous questions.
4. Surveymonkey. Certain needed features of this site are paid services such as textboxes. Therefore this tool is not appropriate for this study as funding is lacking.
5. Qualtrics. This is a paid service. Due to not having funds, this is automatically not applicable for this study.
6. Jotform. Allows up to 5 surveys and maximum of 100 responses per month. However it does allow to block the option to go back to a previous page.

This template is based on a template by:

Steve Gunn (http://users.ecs.soton.ac.uk/srg/softwaretools/document/templates/)

Sunil Patel (http://www.sunilpatel.co.uk/thesis-template/)

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