

The immediate impact of viewing positive and negative online news on core belief examination

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**The Immediate Impact of Viewing Positive and Negative Online News on Core Belief
Examination**

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Abstract

Aims

This thesis aims to identify if online news content (ONC for short) relates to emotional and cognitive changes in consumers and whether there are protective factors, such as life satisfaction, strong sense of self and lack of social comparison making, against such changes.

Methods

With the increase consumption in negative ONC, there has been limited amount of research exploring the psychological impact of the consumption of this type of content on viewers. This thesis consists of two studies. Using a between-subject design, participants in study one were asked to complete an online questionnaire which collected self-reported quantitative data via Likert-scales before and after watching ONC. The questionnaire focused on measures of emotion and cognitive dissonance (CD for short). Participants viewed either negative or positive ONC. Study two used the same procedure but focused on the recall of positive and negative ONC instead. The questionnaire focused on measures of CD, life satisfaction, sense of self, social comparison behaviours and the frequency of ONC consumption. All participants were collected randomly via a convenience sample. Study one consisted of 73 participants (42% male, 58% female). Study two consisted of 106 participants (34% male, 64% female).

Findings

A 2 x 2 ANOVA tested the interaction between participants' negative and positive emotional change and the type of ONC viewed (positive and negative ONC). The analysis showed that negative ONC influenced an increase in negative emotions and a decrease in positive emotions and caused greater emotion dysregulation compared to positive ONC. A t-test was used to analyse the difference between the type of ONC viewed (negative news or

positive news) and examination to core beliefs. The analysis highlighted that there was no significant difference between the positive and negative ONC conditions in terms of the extent to which CD was experienced. However, a stepwise linear regression showed that specific discrete emotions were correlated to CD in each of these conditions.

In study two, a mediation analysis demonstrated that people with a lower life satisfaction are more likely to watch a greater amount of negative ONC and this led to greater CD when negative ONC was recalled. People who have a stronger sense of self, were more likely to watch negative ONC and this led to greater CD when negative ONC was recalled. A greater consumption of negative ONC specifically was related to greater CD.

Conclusion

The findings of this thesis indicate that negative ONC has the potential to influence the emotional and cognitive state of individuals in a negative way and impacting their wellbeing. This could indicate a need to re-examine social media policies regarding the type of content shared online. Individuals might be able to protect their own vulnerabilities when viewing negative ONC. More research is required to develop insight into what protective factors can be enhanced in others, to reduce their vulnerability to the adverse impacts of negative ONC.

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Chapter One

The Foundation of the Research

1.1 Introduction

Exposure to graphic content has become a common occurrence due to the increased popularity of social media platforms for browsing ONC (Ofcom, 2021). Social media outlets have faced scrutiny over their limited actions in protecting their user's from observing this content. Facebook's (2020) Community Standards states that they 'allow graphic content (with some limitations) to help people raise awareness about issues.' ONC can consist of graphic and violent material, which is published for the consumption of social media users. Facebook, like other social media platforms, has taken to warning messages before users are able to access content of a graphic nature. These messages ask the user to reflect on their readiness to witness the content provided to them before proceeding.

'Are you sure you want to see this?'

However, to what extent are users able to answer this question? Are users fully informed of the immediate impact that viewing the graphic content will cause? The following introduction sets out to provide an overview of the topic. The evolution of how ONC is accessed and what content is desirable is discussed. Exploration of ongoing debates and questions raised from these findings outlines the rationale for the current study.

1.1.1 Definition of Online News Content (ONC)

ONC is defined as noteworthy information about recent events, which is presented to an audience using the following multimedia categories: live audio or video, archived audio or

video, feature stories through audio or video documentaries, podcasts, vodcast, photo gallery or animated graphics (Thornburg, 2011). ONC has increased the interaction between the audience and news stories (Thornburg, 2011). This thesis is focused on ONC which is delivered via an archived video format. ONC is integrated alongside social media because these platforms enable ONC to be delivered quickly to an audience. As Kramer, Guillory, and Hancock (2014) outline, users of social media can be confronted with unwanted ONC because of the content that people they follow on social media share.

Bentley, Silverman and Bica (2019) found that the use of social media to access news content had increased by 10% over five years in 2018, highlighting the rapid change in how news content is being accessed. Research into 16–19-year old's use of social media for news coverage found that young people found it difficult to avoid ONC when browsing (Bergström & Belfrage, 2018). People accessing social media platforms will come across incidental news consumption, which is news content that they were not consciously seeking out (Ahmadi and Wohn, 2018). Not only do social media platforms provide access to news stories rapidly, but they now also have applications like 'Facebook Live' which allows viewers to view unedited, potentially graphic content instantly. Newsroom editors are no longer the only group able to access this raw, traumatic material. As Feinstein, Audet and Waknine (2014) note, '*now the man on the street with nothing more than a cell phone can transmit, in real time, images of great ferocity and violence*' (p. 1). Yet there is limited attention dedicated to understanding the emotional and cognitive impact of news-sharing on the public.

The term 'viral news content' is used to describe news material that is shared on social media in a faster and wider style than other news stories (Al-Rawi, 2017). Research into viral news content identifies that the greater the level of emotional arousal, the greater the likelihood for

content to become viral (Berger & Milkman, 2012). This suggests that ONC is driven to include content which will have greater emotional impact on its viewers. The emergence of news which is exaggerated provides some insight into how news content has developed. Altered images within ONC, depicting sharks within the devastation left from hurricane Sandy, highlight how viewers are being influenced to feel greater emotional arousal (Gupta, Lamba, Kumaraguru & Joshi, 2013). Research has highlighted that emotions have significant influence over humans' behaviours and choices (Luo & Yu, 2015).

1.1.2 Evolution of News Content

To understand the rationale for the current thesis, a consideration of how media has developed alongside changes to cultural norms and technological advances is needed. With the availability of cable networks, the internet and social media networks, the communication of news has dramatically changed in the past 30 years (Smith et al, 2019). In 1989, radio, television and newspapers were the main pathways for news to be communicated. By 2000, television was the most popular way to access the news, but this began to change again in 2015 with the rise of social media (Smith et al, 2019).

In 2013, 32% of the news content viewed by individuals was via social media platforms (Ofcom, 2013) and in 2020, this increased to 45% (Ofcom, 2020). This highlights the increasing popularity of social media as a news platform. News is also now being accessed via 'stories on trending', comments with links left by other users or directly posted new story links (Ofcom, 2020). This shows how online news is now imposed upon the consumer, rather than actively sought out.

It is not just how news is being shared which has evolved, it is also the function of news and the boundaries and morals around what should be shown or communicated. Ofcom (2018) found that participants felt that ONC provided news that television broadcasts missed. ONC is being captured by the public through phones, Go Pros, home surveillance cameras or dash camera footage and often posted online to global audiences. Yildiri, Gal-Or and Geylani (2013) notes that in 2008, ‘42.8% of internet users (82.5 million people) contributed to some form of UGC’ (p. 2655). People feel that ONC provides a voice for all whereas television news, radio and newspapers are limited in what they will broadcast. Through angling, cropping and shot selecting, visuals can also be manipulated by the public, like any other content, to convey their own narratives of the event. However, UGC provides up-close, intimate content which can be shared directly from the public universally. Gilliam, Valentino and Beckmann (2002) found that where you lived and therefore the local news people viewed on television, shaped people’s perspectives on topics such as racism and crime. The public now has greater access to a variety of news sources and can actively engage through commenting and sharing, which has not been previously achievable in such an immediate way. Little is known about the effect that this development has on viewers.

In recent years, the emergence of exaggerated or fabricated news has significantly increased online. Vosoughi, Roy, and Aral (2018) found that news content which exaggerates or fabricates elements of news content is shared more frequently and further than news content which is not exaggerated or fabricated. It is proposed that exaggerated news focuses on triggering a greater emotional reaction from the news consumer. Taddicken and Wolff (2020) explored online user’s emotional processes when faced with exaggerative or fabricated news coverage. They found that overall, participants were more negatively affected, than positively, by the content provided. Studies have found that content being emotionally targeting is a

notable difference observed in exaggerated or fabricated news material compared to factual news (Bakir & McStay, 2018). Emotion analytics software is being increasingly used to detect, recognise, and respond to users' emotional states and distribute news content online which will provide the most impact (Siveck, 2018). However, this finding may have a knock-on effect in terms of how real news is presented. Holman et al (2017) identified a positive relationship between the time after a disaster event and how graphic the disaster coverage published is, which they believe is media outlets competing for the most emotionally arousing content. In Goodwin, Palgi, Hamama-Raz, and Ben-Ezra's (2013) study into how different news outlets communicated news regarding Hurricane Sandy, ONC was found to influence greater stress levels in participants than traditional news forms such as television. This stirs the question whether ONC is becoming more a medium to seek emotional arousal, than a forum for the intake of factual and informative sources and if so, do people understand the impact this is having on their internal states.

There are positives that have been gained from news content progressing as it has. There is a 'social empathy' (Schudson, 2013) that has developed through the evolution of ONC, as narratives from many different groups can be shared and learnt about (Roberts, 2021). The public are being provided with opportunities to exhibit greater autonomy and more control over what is being told about world events through social media. However, the cost of this has not been examined in detail. People are now being subjected to traumas from around the world that they are not accustomed to in their daily life (Zhukova, 2020). People are being exposed daily to images and footage which at one time, broadcast stations would have edited out as it would not have been deemed appropriate to show to the public. Feinstein, Audet and Waknine (2014, p.1) highlighted in their research that UGC at one time would be 'sanitised' by newsroom editors for public consumption but now this material can be shared unedited via social media.

This thesis uses ONC from well-established news networks online to ensure that content is appropriate. However, it needs to be highlighted that the public, including under 18-year-olds, are being exposed to ONC which is much less edited than the content used in this thesis.

After the 911 terrorist attacks in 2001, research took a focus on how graphic and violent television news content could have a negative impact on audience's psychological processes and incite fear (Van der Molen, 2004; Romer, Jamieson & Aday, 2003; Ahern et al, 2002). Before this, research centred mainly around newsroom editors as the concern was that this group of people were being subjected to graphic content and that this would impact their mental health. Social media and technological advances allow the public to be the journalist, as most content that is shared is user generated. News updates are live from traumatic scenes and less time is taken to edit footage and images to make it appropriate to audiences. The audience will experience global events as if they are witnessing them in person. There is limited research available that highlights the impact of watching ONC on the public.

1.1.3 Rationale for the thesis

There have been concerns raised over the impact that exposure to negative ONC has on consumers. Several studies have found a significant direct relationship between negative news exposure and negative emotional states (Balzarotti & Cicero, 2014; McIntyre and Gibson, 2016; Marin et al, 2012). However, there is limited information regarding what specific emotional states are being aroused. In de Hoog and Verboon's (2020) study, they found that the news content does not need to be high in severity, as analysing the effect of daily exposure to general news was enough to trigger a negative emotional response. However, this research, highlighted the need to understand why this was not the case for everyone in the sample.

Huesmann (2007) explored media violence and noted that not all participants were affected by media violence equally and questioned what social cognitions were taking place when watching violent media.

Anderson et al (2003) outlines how psychological theories have highlighted aggression as an outcome of observing violence through the media. Owen, Noble and Speed (2017) raised concerns about the prevalence of videos and images depicting atrocity and murder being intrusively shared online. They question whether online users have a morbid curiosity in traumatic material or are desensitised to traumatic content requiring the material to be more graphic to incite an emotional response. However, research into ONC, has primarily focused on the behaviours of those who view news online, such as commenting, understanding their motivation for viewing it and how they access it (Bentley et al, 2019; Talwar et al, 2019; Kalogeropoulos et al, 2017).

The boundaries of what is deemed ethically appropriate to upload have loosened as well as the control over what is put online (Thornburg, 2011). This is important to note for the rationale of this thesis as it highlights how, given that more content is unregulated, people are being subjected to more extreme forms of violence, which they have not always consented to. This development in how news is spread has gone unchallenged due to a lack of knowledge. This thesis hopes to provide greater insight in this area.

1.2 Theoretical Framework

The theoretical framework for this thesis is a combination of interlinking psychological concepts to provide a foundation and structure to inform the research efforts and analysis. This

section will provide an overview of such concepts to inform underlying theory of the thesis going forward.

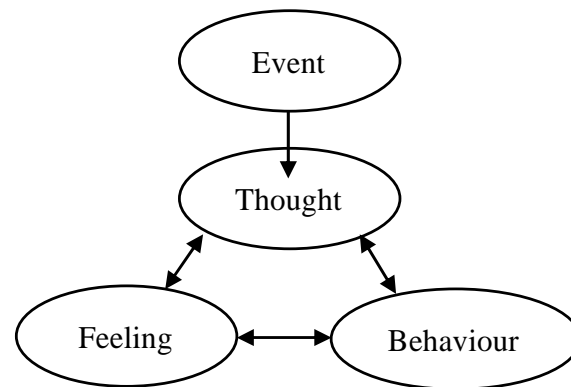
1.2.1 Cognitive Behavioural Theory (CBT)

CBT introduced by Beck, is a theoretical model to understand how an external trigger can influence an internal process and how this internal process determines how we interpret the trigger.

The theory is based on the principle that the human mind can organise and interpret the same information in several ways. This difference in how information is processed can be understood person-to-person but can also be evident within the same individual through a shift in their focus (Briers, 2015). CBT argues that our interpretation of external triggers is dependent on our thinking styles. Our thinking style provides a unique meaning to the information provided from interactions and events, which determines how we interpret and categorise events.

Beck contends that an event involuntarily triggers a thought. The thought triggers an emotional response which will then influence a behavioural response. However, the CBT model is not a linear process, it is better understood as a cycle (Figure 1). If an individual witnesses a person being bitten by a dog (event), a thought may be initiated such as 'I am not safe'. This thought will initiate a feeling such as fear, and this will then activate a behavioural response such as run away.

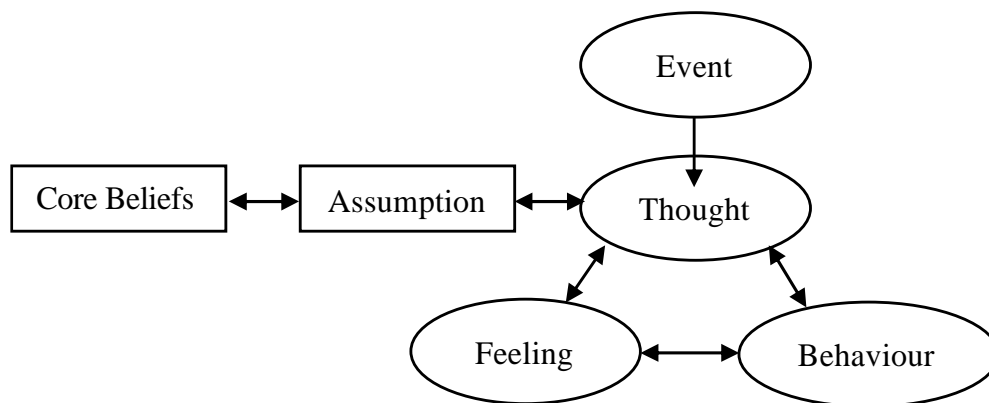
Figure 1.
CBT Model



Note: CBT model. Adapted from *Cognitive Therapy: An Introduction* (p. 9), by D. Sanders and F. Wills, 2007, SAGE Publication Ltd.

Each time this cycle is triggered, meaning and interpretation is formed and stored. New information can strengthen or examination pre-stored knowledge. Our internal models of the world, others and self can therefore evolve with time.

The basic CBT model above can be developed further to explain this learning process (Figure 2). Beck argues that each individual holds assumptions which are rules which they perceive they must live by. These will have developed over time based on their own experiences. Similar experiences can strengthen the assumptions and can contribute to strengthening core beliefs. Core beliefs are rigid views of the world, others and ourselves. People are less likely to identify their core beliefs without support, as they can be mistaken as implicit knowledge. They are more resistant to change but can evolve with time. Our core beliefs can influence what information we seek out and what we accept (Weatherhead, Flaherty-Jones, & Jones, 2011).

Figure 2*Beck's CBT Model Developed*

Note: Beck's CBT model developed. Adapted from *Cognitive Therapy: An Introduction* (p. 48), by D. Sanders and F. Wills, 2007, SAGE Publication Ltd.

Depending on what meaning is formed in response to the event, the process in Figure 2 can invoke positive or negative feelings. The cycle of feelings, behaviours and thoughts can become reinforcing of one another whilst also contributing to reinforcing the core belief system held. This theory highlights that mental health difficulties can develop within anyone when persistent triggers initiate extreme versions of normal processes.

This research will be exploring the impact of ONC by examining ONC as the triggering event interacting with the viewer's internal process. The cause and effect of feelings, beliefs and behaviours will be explored at various parts of this thesis.

1.2.2 Cognitive Dissonance Theory (CDT)

CDT was founded by Festinger (1957) who first outlined CD as the state of discomfort which takes place when information from the environment is inconsistent with our own belief

system. An external trigger can produce information that is inconsistent to the individuals core beliefs which activates emotional arousal of discomfort. CD has been researched more recent years in relation to social media posts which share opposing beliefs (Jeong, Zo, Lee & Ceran, 2019). It has been found that people who hold stronger beliefs, are more likely to experience CD due to their instinct to protect their perspectives when they feel under threat (Harmon-Jones & Harmon-Jones, 2020). Once CD is experienced, the individual is then motivated to regulate this state. There is a positive relationship between the magnitude of dissonance felt and the subsequent drive to regulate this dissonance (Cooper, 2019). Earlier in the thesis, an example was provided regarding an individual who witnessed a dog biting another person. If the person who witnessed this event had dominantly positive experiences with dogs up until this point, then this new piece of information would now conflict with their beliefs and attitudes about dogs, causing a feeling of dissonance. If this individual feels strongly about their previous attitudes and beliefs towards dogs, there dissonance will be greater, and they will be more motivated to justify or discredit what they saw to regulate their emotions and prevent change to their belief system.

To resolve CD, cognitive harmony, which is having consistent beliefs to the external information being presented, must be met (Lavergne & Pelletier, 2016). The conflicting cognitive system (core beliefs and assumptions) must be open to change. If CD cannot be resolved, the information taken in from the environment may be manipulated to fit preconceived beliefs or the information may be rejected by the individual (Dilakshini & Kumar, 2020). Further behavioural responses may be taken such as seeking support from others who hold similar beliefs or attempting to persuade others to accept their belief system.

There continues to be debate regarding this state of psychological discomfort. Research into this state has aimed to identify specific emotions, such as guilt, to provide an explanation for the experience of dissonance. There continues to be no clear debate on the nature of CD and research is recommended therefore to explore this form of emotional arousal more broadly (Vaidis & Bran, 2019).

This thesis will be exploring the impact of ONC on the viewer's belief system. ONC will act as new information which may initiate CD.

1.2.3 Theories of Emotion

This thesis is concerned with the emotional reaction of viewing ONC. Research into emotions has primarily taken a broad focus before categorising itself into two distinct areas, positive and negative, known as valence (Lewin, 1951). In Counselling Psychology, emotions are considered in terms of functions (Appendix C). Rather than focusing on labelling the emotion, researchers can explore and examine the function and underlying processes of each emotional experience (Lindebaum & Jordan, 2012). Due to the subjectivity of emotions, there continues to be frequent developments to the theoretical understanding of emotions and a lack of consensus within this field. A consensus is needed to reliably compare research by focusing less on the valence of emotions and more on each specific emotions and its function.

It is important to note that the current thesis focuses on state emotion as opposed to trait emotion. A state emotion is an emotion which is influenced by the situation a person is in (Harmon-Jones, Harmon-Jones & Summerell, 2017), whereas a trait emotion refers to an 'overall tendency to experience various moods and emotions' (Wróbel, 2017, p. 1). A state

emotion is more likely to fluctuate than a trait emotion as an individual high in a specific trait emotion, such as happiness, is more frequently and intensely going to express this emotion than the next person (Wróbel, 2017).

There are two foundational theories of emotion. The theory of discrete/basic emotions was founded by Darwin (1872) and argues that humans have a limited number of emotions which are biologically and psychologically founded (Gu et al, 2019). In this theory, emotions are viewed as primitive constructs which are required for evolution. It is perceived that each emotion has a behavioural function. The function of fear is to fight or run for survival. Psychologists hold differing views about what constitutes the discrete emotions, but fear, joy, anger, and sadness have been repeatedly put forward by theorists as the basic emotions, as all are required to explain a response (safety, frustration, pride, and loss; Gu et al, 2019). The dimensional theory of emotion, first put forward by Wundt and Schlosberg (1954), proposes that all emotions are controlled by two dimensions: hedonic, meaning pleasure or displeasure, and arousal, meaning activated or rest. Arousal is linked to a primitive explanation of behaviour. The greater the arousal, the greater the physiological changes within the body to support survival (Löw, Lang, Smith, & Bradley, 2008). In this theory, emotions can be categorised by how significantly they are experienced as pleasurable and the level of arousal (Gu et al, 2019). Emotions are perceived to be independent entities in this theory, but psychologists have since argued that emotions can overlap, suggesting that more than one emotion can be experienced at once.

Emotions in the current thesis are understood through a combination of both theories. It is believed that there are a set of discrete emotions which can be experienced when an individual is subjected to a trigger. This emotion can be felt at varying levels of arousal. Emotions cannot

be categorised in terms of valence solely because each discrete/basic emotion initiates a function and behavioural response.

1.3 Thesis Aims

In consideration of the thesis rationale, the current research will seek to identify the reported, immediate emotional and cognitive change in all participants when observing both negative and positive news content. Focus will be placed on the process that takes place on participants' belief systems when ONC is viewed. Core beliefs are rigid and cannot be changed in the short-term. However, the CD experienced when a belief system is challenged is immediate. Therefore, this thesis will explore whether ONC influences users to examine their core beliefs and what factors increase people's vulnerability when consuming ONC.

1.3.1 Chapter overviews

Chapter 1 has introduced the thesis, by providing a rationale for the project alongside the theoretical underpinning that underlies the foundation of this research. It also establishes the model for what perspectives will be drawn from to inform reflexive practice.

Chapter 2 provides an in-depth literature review exploring the research and arguments underpinning the impact of ONC which has influenced this current thesis.

Chapter 3 presents study one, which aims to support an understanding of which emotions are being triggered from watching ONC, whether there is evidence to suggest CD is taking place from watching ONC, and what emotional changes are suggesting the presence of CD. A pilot

study, which aims to identify whether the general population can distinguish a significant difference between positive and negative ONC is also presented in this Chapter. The pilot study is also used to inform methodological decisions for study one.

Chapter 4 presents study two, which aims to provide further insight into the underlying processes taking place, when ONC is *recalled*. Throughout this thesis, both positive and negative ONC will be used to compare the impact of accessing these two forms of content.

Chapter 5 presents a discussion of the thesis findings. This Chapter provides a summary of theoretical advancements based on the thesis and poses questions for further research. Limitations of the thesis are also considered in this Chapter.

Chapter 6 presents an overview of my critical reflections of the research process, utilising the Brookfield's Lens Model to apply a reflexive approach to this process.

Chapter 7 presents the references and appendices for this thesis.

Chapter Two

Literature Review

2.1 Introduction

Online News Content (ONC) is news which is delivered to the consumer via social media platforms and contains User Generated Content (UGC for short). This form of media is of particular interest due to the increasing accessibility and popularity of this type of content, which opens viewers to a larger, global pool of information, which they were not previously exposed to. This literature review will further explore the individual differences that both influence a greater consumption of news content as well as the factors which increase the likelihood that someone will be significantly impacted by negative ONC. Research comparing positive and negative news framing will also be considered.

News has developed significantly in relation to how the event information is retrieved, distributed, and presented. Although research into television news is not the same as ONC, it will be included in the literature review as a foundation to exploring what is known regarding the impact of media content. There is less research that explores specifically ONC, as this is a relatively new form of media. The research focuses on how adults are impacted by news. There are also several studies exploring how the news impacts trauma survivors, but this population is not representative of the majority. This group will not be reviewed in detail within this literature review and instead will only be referred to where appropriate to provide insight. Instead, emphasis will be applied to how people who have not been directly exposed to traumatic events covered within the media are impacted by the content viewed.

The literature review has been conducted using a systematic method. Studies were found using the following keywords and themes relevant to the topic: vicarious trauma, news exposure, news framing, CD, cognitive appraisal theory, risk perception. Relevant findings and critiques were structured until an overarching narrative was formed.

2.2 Direct trauma exposure and the media

Numerous studies have focused on trauma survivors and the effect that repetitive news coverage has on their recovery process. Consistently, the findings from research note that those who observed media coverage of traumatic events, having been a direct witness or direct victim of the event, experienced elevated symptoms of Post-Traumatic Stress (PTS; Ahern et al, 2002; Ahern et al, 2004; Mahamid & Berte, 2018; Hansen, Dinesen & Østergaard, 2017; Goodwin, Lemola & Ben-Ezra, 2018). A study exploring the impact of media coverage after the Boston Marathon, highlighted that increased media exposure was related with greater PTS symptoms and results were equal for youths with high and low sympathetic reactivity (Busso, McLaughlin & Sheridan, 2014), suggesting their response was not biologically led. A study investigating survivor's vicarious exposure to the MH17-airplane crash in the Ukraine, found that positive affect decreased, whilst negative affect increased after the crash (Jeronimus et al, 2019). Participants' exposure to media over the next 3 days were associated with an increase in negative affect, somatic symptoms, and a reduction in reported positive affect. In people who were directly exposed to the 911 attacks, media exposure after the event was found to significantly increase the likelihood of developing PTSD (Ahern et al, 2002). These findings suggest that those who are directly impacted by traumatic events, and then view online news coverage of this event, do suffer negative outcomes from doing so. These negative outcomes appear to increase the potential of developing PTSD.

2.3 Vicarious and collective trauma

Vicarious trauma is the term given to the experience of trauma symptoms that can result from being repeatedly exposed to other people's trauma and their stories of traumatic events. A person's belief system can be significantly changed because of hearing or observing indirectly these stories (Dubberley, Griffin, & Bal, 2015). A trauma that took place in one setting, such as a school shooting, can be communicated to and impact a wider community, becoming a collective trauma. News content provides people with access to traumatic events. Many different online accounts can share ONC; platforms such as BBC News and Sky News as well as the public. This means that people can access the news on a wider scale. A traumatic event for a small group of people becomes distressing to a society, country, or world population (Holman, Garfin, Lubens & Silver, 2020).

Piotrkowski and Brannen (2002) identified that PTSD symptoms were evident in participants who had not directly witnessed the 911 attacks but had indirectly witnessed them through the media footage. The footage increased the participants perception of risk to life and therefore changed their beliefs regarding their safety. Newsroom editors and journalists have been further target groups for research into the impact of repeatedly observing traumatic events (Weidmann & Papsdorf, 2010). These target groups are of interest as they are subjected to the raw, unedited news material. The access to UGC means similar raw footage is being shared amongst the wider public. Weidmann and Papsdorf (2010) found that 80% of their sample of newsroom employees, reported experiencing intrusive and recurrent memories, which triggered them to experience emotional distress. Only 37% of these participants had reported previously experiencing a traumatic event directly and therefore the majority were reporting these results in response to vicarious trauma only. These findings strengthen the argument that observing

negative news content can have an impact on the individual, regardless of whether they have been exposed directly or not to the trauma event. As Dougall, Liegey, Hayward, and Baum (2005) outline, the DSM-IV has progressed to recognise indirect exposure to trauma as a potential cause for Post-Traumatic Stress Disorder (PTSD) but has not expanded this recognition to vicarious trauma via the negative ONC. Although those directly affected by the 9/11 were found to be much more impacted by the news coverage (Piotrkowski & Brannen, 2002); Dougall, Liegey, Hayward, and Baum (2005) found that people who were not directly exposed to the events of the 9/11 Anthrax attacks but were watching the news coverage about the events, did experience intrusive thoughts and avoidance behaviours, further symptoms of PTSD. The effects of violent and threatening content have been found to produce physiological arousal consistent of that of PTSD. Bourne, Mackay and Holmes' (2013) study, which utilised MRI results, found that vicarious trauma to traumatic images triggers activation of participants' brain regions linked to subsequent intrusive flashbacks, a symptom of acute stress. Research has further found that the news consumer's proximity to the traumatic event does not impact the level of distress they report (Garfin, Holman & Silver, 2015).

These findings highlight the need to understand the impact that ONC is having on the public in both the long term and the short term. However, research focuses on large events rather than everyday news occurrences. Ahern et al (2002) has called upon mental health clinicians to recommend a reduction in news exposure and this was before ONC was a popular and daily news consumption method. Furthermore, Szabo and Hopkinson (2007) identified in their research that the effects of negative news consumption are not resolved by engagement in daily tasks alone and formal structured relaxation techniques are needed instead. This means that people are left vulnerable to the effects of the news as they engage with their daily lives.

2.4 The motivation to view news content

Although the shift to online news consumption has led to wider access to news indirectly, there are still ways to actively seek out news content or actively avoid it. Studies have investigated the potential factors for this difference in people's behaviours regarding news content.

2.4.1 Seeking out news content

With the rise in emotionally led negative news content, there has been an exploration into what type of content people are more driven to engage with. Research into ONC has identified that there are negative biases in human's information processing and behaviours in general (Soraka, Fournier & Nir, 2019). Findings suggest that people are more likely to be attentive towards negative online news coverage than positive content (Zillermann et al, 2004). Theories regarding negative bias have been drawn from evolutionary theory where a focus on negativity would increase survival rates (Shoemaker, 1996). Organisms who were more aware of negative stimuli, would be more likely to survive if these negative stimuli were a threat to life and were therefore more likely to procreate (Lazarus, 2021).

Marshall et al (2007) explored the impact of media exposure after the 911 attacks. This study identified that media exposure increased distorted risk perception which caused hypervigilance in media consumers. This hypervigilance in individuals caused them to seek out more media to feel better prepared for the potential threat they perceived could take place, to protect their safety. Pfefferbaum, et al's (2003) study highlighted that people who had been directly exposed to a trauma were more likely to engage with the media to gain a sense of control over the event

and process what went on but would report they felt worse after in doing so. These findings demonstrate that people may be motivated to actively seek out negative news content to feel better prepared for future events or to cope with events that they have been exposed to. However, the content increases their sense of threat about the world and others and this increase in anxiety leads to a greater consumption in negative news content. Therefore, the motivation to engage with news may be a biologically led behaviour which becomes reinforced by the outcome of the behaviour itself. To further strengthen the above findings, in van Ingen et al's (2016) study, information seeking online was associated with problem solving techniques as a way of coping after witnessing negative events. When offline and online information seeking as a coping strategy was compared, no association was found between online information seeking and wellbeing compared to the significant positive association found for offline information seeking. These findings suggest that when people are faced with a negative information which causes emotional distress, they are motivated to seek more related information online to cope, but this behaviour does not support their wellbeing. Wellbeing was measured in terms of life satisfaction, self-esteem, and optimism.

Linking further to the use of news content as a coping strategy, Potts, and Sanchez's (1994) study looked at people with symptoms of depression and how they interact with television news content. They found that those that reported experiencing symptoms of depression, were more likely to seek out television news content. There has been debate as to why this might be with some arguing that this content can be used to avoid their reality and for entertainment as it can be emotionally stimulating. McQuail (2001) further acknowledges that news can be a social connection to the world for those who feel lonely, which can be a symptom of depression. Slater's (2007) study found that people tend to actively seek out content which reflects their own beliefs about the world. Those who report depressive symptoms are most likely to have

negative views about the world and others and therefore will actively seek out negative ONC to reinforce their beliefs. Slater, Henry, Swaim and Anderson (2003) also found that people who were assessed to have more aggressive traits, sought out aggressive media content which was found to increase their levels of aggression which made them seek out more aggressive content.

In 2020, Covid-19 caused a global pandemic which increased people's levels of stress and anxiety and lowered the psychological wellbeing of many. The news was flooded with information regarding the pandemic. Eden et al (2020) analysed how students used media as a coping strategy during this time for distraction, escapism, and entertainment. However, when Eden et al (2020) explored the impact of specifically engaging in the news to cope with the pandemic, they found that there was a significant positive correlation between the duration of attention to news on COVID-19 and depression. What has therefore become a consistent theme within research focusing on the motivation to view news content, is that there is a reciprocal relationship between the motivation to watch the news and the impact of doing so. News consumers become stuck within a cycle of seeking news to cope with distress and news content increasing this distress.

Moreover, it has been found that people who do not have a strong identity tend to seek out the news to develop their sense of self through the dominant views of others (Valkenberg & Peter, 2013). If someone has a weak sense of self and does not hold strong views, they will actively seek out news content to develop their sense of self. Gilbert (2014) speaks about the sense of self as a genetic and social construction. He explains that a sense of self is developed by an individual's genes but also the social environment we are exposed to. Cuperman, Robinson and Ickes (2014) explain that those with a weak sense of self have a tendency to adopt aspects of

what they view from others and therefore tend to have 'situation based' and fluctuating sense of selves. If someone has a weak sense of self, they will look to their social environment to cultivate a sense of self through exposure to other's actions and beliefs. Research has found that adolescents with an unstable self-concept spent more time online and presented with a more varied presentation online than those with a more stable self-concept (Chen-Wilson & Fullwood, 2016). Michikyan's (2020) findings provide more insight into this and explain how those with a weaker sense of self will browse through online content to engage in social comparison behaviour (upwards and downwards) and self-monitoring behaviours to present a self which they perceive to be more desirable, based on the information they have browsed online. They found that people with a more coherent sense of self were more likely to express how they feel, rather than seek out the opinions of others. People with a weaker sense of self will be more susceptible to being influenced by the content due to their malleable beliefs and opinions (Shen, 2004). Flury and Ickes (2007) share that people with a weaker sense of self have a poor sense of identity and do not have strong opinions or beliefs. As a result, they quickly change in their attitudes, values, and opinions. Having a stronger sense of self is beneficial as it supports people in distinguishing between their own and other's beliefs and values when information is presented to them. Therefore, a stronger sense of self means you are less likely to be influenced by the world around you and you can be autonomous. Ozer (2019) argues that forming a sense of self has become challenging in a world of globalisation. Access to media and online content means that a sense of self is being developed in several layers (cultural, social, and personal) both locally and globally. This is potentially leading to confusion and a weaker sense of self as more information is being provided online (Ozer, 2019).

There have been several benefits identified in Counselling Psychology research regarding the development of a stronger sense of self. Having a stronger sense of self has been linked to optimism which increases motivation to change (Gilbert, 2014). It has further been linked with having a greater ability to make and maintain relationships with others (Rageliene, 2016) which increases social support and therefore someone's ability to cope with difficult situations. It is also related to having greater self-esteem and self-efficacy (Zaff & Hair, 2003). In PTSD research, those who present with symptoms of PTSD after a traumatic situation often report a weaker sense of self through statements such as 'I do not know who they are' (Lanius et al, 2020). This has been found to be one perpetuating factor which maintains their difficulties and so strengthening their sense of self becomes a focus for recovery (Lanius et al, 2020). Research into recovery from mental health difficulties has found that recovery was positively correlated with having a stronger sense of self (Gemeay & Sabra, 2018).

2.4.2 Avoiding news content

There has also been a focus on why some people tend to avoid news content where they can but less findings have been concluded from this research topic. As Skovsgaard and Andersen (2020) note, avoidance of news can be both intentional and unintentional and is measured as low news consumption.

People's perception of the news such as it being a trustworthy and accurate source of information influenced whether people avoid or engage with news content; those that believed the news was not trustworthy or accurate being more likely to avoid the content (Strömbäck et al, 2020; Tsfati & Cappella 2003). Too much news content being subjected to an audience, known as news overload, has been found to influence an unintentional avoidance of news

coverage, due to people feeling fatigued about the news (Park, 2019). This was particularly found in relation to ONC. People are gaining awareness of the negative emotional impact that news can have, and some are intentionally avoiding it to self-preserve (Ruotsalainen & Villi, 2021) and to prevent them from feeling powerless (Kalogeropoulos et al, 2017).

Exploring avoidance and seeking of ONC is becoming difficult within research because people are becoming subjected to news content rather than there being an active choice in its consumption (Strauß, Huber & Gil de Zúñiga, 2021). Literature has investigated the various impacts that frequent exposure to negative news content has on viewers.

2.5 Frequency of news consumption

Desensitisation in psychology is the term given to a reduced emotional response to a stimulus after increased exposure to it overtime (Huesmann & Kirwil, 2007). The reduced emotional arousal can change people's attitudes and beliefs about what they have been exposed to because they no longer experience a negative emotional arousal in relation to witnessing this stimulus (Huesmann & Kirwil, 2007). Someone who has been brought up within a violent household, may not be as emotionally aroused when witnessing violence compared to another person who has not been raised in this environment. The Social Learning Theory developed by Bandura (1977) provides some insight into the term desensitisation. In Bandura, Ross and Ross' (1963) 'Bobo Doll' experiment, children were exposed to either an adult aggressively playing with the doll or an adult non-aggressively playing with the doll. The study found that children would imitate what they had learnt from their observations of how the adult interacted with the doll both from watching adults in real life and via television. Their empathy for the doll reduced and therefore their emotional arousal to violence reduced. Huesmann (2007)

commented on this in relation to media violence, noting that people who observe violent displays on social media without consequence will be more aggressively stimulated in the short-term and desensitised to violent content in the long-term.

Desensitisation to shocking, graphic and violent content, particularly within video games and television, has been a focus within psychological research. Studies have tended to focus on the behavioural impact of aggression when this type of content is viewed. In the early 90's, Wiegmann, Kuttschreuter and Baarda (1992) identified a positive relationship between aggression and the viewing of violence on television but when the participants' starting levels of aggression and intelligence were not controlled for, this finding was no longer supported. This suggests that desensitisation is influenced also by individual differences, such as a person's trait aggression. However, studies into violent games have found that increased exposure to violent content overtime, reduced empathy and sympathy in participants whilst also increasing their pro-violence attitudes (Priyadarsani, 2013; Fanti et al, 2009; Flowers et al., 2000; Funk et al, 2004; Wei, 2007). This suggest that overtime, violent content can change both an individual's emotional and cognitive states. Bushman and Anderson (2009) also identified that after playing a violent video game or watching a violent film, participants were not as responsive to violent situations such as fights or people in need, such as an elderly woman in distress. However, Bushman and Anderson's (2009) research has been highly contested because of methodological issues with the research's use of laboratory experiments affecting the validity of the findings.

Frequent exposure to violent content has also begun to be explored within the topic of news content. Strenziok et al's (2011) study looked at violent news content exposure in adolescents using MRI scans. They concluded that frequent exposure to violent news content was lowering

participants' emotional activation. Fanti et al (2009) also found that repeated exposure to media violence reduced the psychological impact of the media over-time and therefore increased desensitisation to violent content. The more content they viewed; the more enjoyment was reported. However, they initially reported a negative affect arousal to the content. Similarly, to Wiegmann, Kuttschreuter and Baarda's (1992) findings, Fanti et al (2009) also found that trait aggression did increase the likelihood that participants would enjoy the violent media content, again highlighting that individual differences need to be considered. Fanti et al (2009) describes the relationship between desensitisation and frequency of media violence as curvilinear. The participants sympathy with the victim observed, increased initially, whilst enjoyment for watching the content decreased initially. Over time, this relationship changes, sympathy for the victim begins to decrease whilst their enjoyment for the violent content increases.

However, Feinstein, Audet and Waknine's (2014) study, investigating the impact to exposure of UGC of a traumatic event on journalists, found that the frequency of exposure to this type of content could predict anxiety, depression, PTSD, and alcohol consumption. This implies that desensitisation is not taking place in this sample, as they are being negatively impacted by what they are viewing, even though they are a group of people who consistently view this type of negative content daily. Duration of exposure to the negative content was found to be less emotionally and psychologically impactful than the frequency of which news content was viewed. This suggests that frequent scrolling through negative ONC is potentially more distressing than watching longer pieces of news content. Holman, Garfin, Lubens, and Silver (2020) explored the impact of traumatic events being covered within the news. They found that more frequent news exposure, particularly to the bloody imagery from the Boston Marathon Bombing, was indirectly associated to functional impairment within their daily lives 6 months

after the event. However, again this research focuses on extreme events covered by the news rather than more mundane news.

A societal concern more recently has been around the potential impact that consuming violent, graphic, and uncensored content will have on people's behaviours and attitudes. Children are being brought up with this type of content making the long-term impact on children and adolescents a particular worry. Emotionally led news content is increasing, as is exaggerated or fabricated news. The boundaries regarding what is considered ethically appropriate to include within ONC are fading. This raises the question is society becoming desensitised to ONC, causing the content to become increasingly graphic, or are the developments within technology meaning people are more frequently exposed to this type of content and as a result are being psychologically affected?

2.6 Individual differences and news consumption

Research so far suggests that individuals may engage differently with online news. Research into why there are differences in how people are impacted by news coverage holds an inconsistent argument. Studies have considered areas such as personality traits, age, and gender to investigate these differences.

Research into the impact of cognitive appraisal of news content has identified that not all people are so easily influenced by what is shared within the news. Shen (2004) found that some people can detach themselves from what is communicated within the news and make their own judgements based on their pre-existing knowledge, experiences, beliefs, and values. De Hoog and Verboon (2020) can explain this individual difference through people tending to appraise

how relevant the news content is to them. New content that is more relevant to the consumer, tends to have a greater emotional impact on them. Balzarotti and Ciceri (2014) further found that how personally relevant the news was to a news consumer, influenced the level of fear reported by them. Age has been a further factor considered to influence how new content is appraised. In Schwab and Winterhoff-Spurk's (2008) study, they found that younger people were more likely to view depictions of animal cruelty as more distressing than depictions of cruelty towards humans. In terms of social factors, Piotrkowski and Brannen (2002) found that social roles can have a significant impact on how an individual may appraise negative news content. They found that mothers were much more likely to perceive negative news as a threat due to this group having a strong perception of their role in being to protect their children and therefore seek out threats.

Internal factors such as a person's psychological state and personality traits have also been found to influence how an individual interacts with the negative news content. Pre-existing mental health conditions were found to increase the deterioration of people's mental and physical health when being exposed to an indirect collective trauma through the news (Silver et al, 2013). Individuals who are high in sensitivity and psychophysiological stress reactivity have been found to be more likely to be affected by media exposure after an event (Rubaltelli et al, 2018). De Hoog and Verboon (2020) found that people with high traits of neuroticism were more likely to experience a greater negative emotional arousal and a decrease in their positive emotions in response to negative ONC.

2.6.1 Protective factors and news exposure

The literature has explored potential protective factors when it comes to news exposure. It has been identified that people who have strong interpersonal circles and therefore are better able to access social support are less likely to have their beliefs about the world altered by negative news content (Valkenberg & Peter, 2013). Slater, Henry, Swain and Cardador (2004) further found that people who have a greater sense of belonging and social connection to the world are much less impacted by the media. They found that youths who were bullied or feeling alienated at school were more likely to seek negative forms of media out. Additionally, people who report greater self-confidence and self-esteem were also found to maintain positive assumptions about the world after exposure to media coverage about natural disasters, whereas negative assumptions about the world were associated with a lack of coping strategies for managing distress (Joseph, Williams, & Yule, 1993). It can be deduced that having healthy social connections in reality and having a greater and positive sense of self can support the development of better coping strategies, which lowers the emotional and cognitive impact of ONC on the individual.

Keller, Siegrist and Gutscher's (2006) study into risk communication within media coverage of flooding concluded that the self-efficacy of news consumers needs to be considered when looking at the perception of risk. This is because those who have greater confidence in their ability to manage in challenging situations, will perceive risks to be much lower and will therefore feel less challenged in their assumption of the world being safe. Gunaydin, Selcuk and Ong (2016) note that there was less emotional change from witnessing negative events in everyday life from participants who were more able to reappraise information given to them. Participants with this ability, were found to have lower depression scores, greater self-esteem,

and greater life satisfaction. Therefore, having a lower life satisfaction, greater depression or low self-esteem could predict those who would be more vulnerable to being emotionally impacted by viewing negative events.

2.6.2 Research into resilience

Resilience research within the Counselling Psychology literature provides greater insight into how people can develop the skills needed to be able to detach themselves from the negative events that they witness. Resilience is defined as a process whereby an individual can positively adapt when faced with a significantly adverse situation (Luthar, Cicchetti, & Becker, 2000). The expression 'resilience' is an overarching term for several personal characteristics that have been found to reduce psychological distress when someone is faced with a traumatic event. In research into torture survivors, it was found that survivors who had characteristics of resilience, were less likely to develop PTSD symptoms, depression, or anxiety (Basoglu et al, 1997). The concept of resilience relates significantly to the topic of negative news content as it could potentially provide greater insight into the individual differences of why some people can view negative news with less significant impact to their emotional and psychological wellbeing whereas others cannot.

Social support has been identified as a recurring factor which has been positively associated with resilience. Valkenberg and Peter's (2013) findings identified that access to social support was associated with people being less influenced by negative media content. Todd and Worell (2000) identified that social comparison theory could provide further insight into how some people are more resilient than others, as how someone compares themselves to others, can impact on how they adjust themselves in the face of negative and potentially traumatic

information. Hooberman et al (2010) found that refugee trauma survivors who made fewer social comparisons, particularly downward comparisons, were less likely to develop PTSD symptoms. This result was thought to be a result of people linking the negative events to their personal situations and therefore not being able to detach themselves from the event personally. De Hoog and Verboon (2020) and Balzarotti and Ciceri (2014) both identified in their studies into media exposure and cognitive appraisal theory how increased personal relevance of the news increases the emotional and psychological response to the news. Hooberman et al (2010) further inferred that those who made social comparisons when observing future negative events potentially felt more guilt and this led to more unconstructive appraisals and a significant negative emotional response, leading to greater PTSD symptoms than those who were less likely to make social comparisons. Xiang, Chen, and Zhao (2020) found that survivors of physical abuse within their families as a child, are more likely to experience maladaptive symptoms if they make social comparisons, particularly upward comparisons, due to making unconstructive appraisals and meaning out of what negative events they have been through. Emotional responses were found to be much greater than those who did not make social comparisons. Vogel et al (2015) found that people who engage in more social comparison behaviour on social media, tend to have lower self-esteem and self-awareness which led to greater negative emotions being aroused. The research suggests that people who are less likely to engage in social comparison behaviour are more likely to have resilient characteristics and be able to stay more detached and less emotionally aroused when seeing negative content.

Past research has focused on upwards or downwards comparisons rather than exploring social comparison behaviour in general. Social comparison orientation has been related to a greater level of uncertainty about the self, a greater focus on other people, and a tendency to be influenced by the beliefs of others (Buunk & Gibbons, 2007). In Hoffner and Ye's (2009) study

into how people's perceptions of risk, regarding skin cancer, can be influenced by news content, it was suggested that people with a greater tendency to compare themselves to others, did influence a greater perception of personal risk when watching news content. However, this finding was dependent on the framing of the news content. The results were only significant when the news content focused on the gains of using sunscreen (youthful, healthy skin) rather than the losses (skin damage). This highlighted how constructive news framing can communicate helpful messages using an approach which is not reliant on triggering negative emotional responses. This study focused on social comparison orientation rather than focusing on a direction for social comparison because Hoffner and Ye (2009) argue that past research which has focused on a social comparison direction, has led to contradictory findings. This could be explained through individual differences as Kósa and Zsigmond (2012) found that males preferred making upward social comparisons whereas females preferred making downward social comparisons when consuming ONC. Therefore, looking at the tendency to make social comparisons in general, rather than focusing on specifically what type of social comparison is being made, is a better starting point to examine any significant findings.

People who have lower self-esteem and an unclear view of themselves, are more likely to feel challenged and threatened in their beliefs by external information (Steele et al, 1993). This causes this group of people to seek out social comparisons to relieve this state of dissonance by going with the group norms (Fishbein, 1963). Harrad (2018) found that those with a lower self-esteem, had an unclear self-concept (sense of self) and that those with a clearer self-concept were able to engage with social media with greater benefits. Flury and Ickes (2007) found that people who have a weaker sense of self, were more likely to be influenced by the world around them and others. These people are more likely to have feelings which quickly fluctuate as a result. People who have a stronger sense of self, have been found to be less

influenced by the strong opinions around them and have higher self-esteem, making them more resilient to negative information. To further strengthen the above findings, Shemesh and Heiman's (2021) research into victims of bullying found that greater resilience was found amongst those with a greater self-concept which resulted in higher wellbeing outcomes within this target population. Someone's sense of self has been researched significantly less than self-esteem within the literature. However, someone with a greater sense of who they are, can ground themselves in an influential environment such as online news.

People who are dissatisfied with their life, will have negative outlooks of the world around them. A higher overall life satisfaction has been found to positively associate with resilience (Cohn et al, 2009) because people with greater life satisfaction have been found to have more developed skills for emotion regulation, problem solving application and psychological flexibility. Life satisfaction is defined as a universal evaluation of an individual's quality of life which is scored in relation to someone's judgement of satisfaction with how their life is presently (Diener et al, 1985). Karatas and Tagay (2021) explored how some people were able to maintain resilience in the face of the Covid-19 pandemic. They found that people who were more satisfied with their life, were more likely to report a higher resilience and therefore were experiencing less anxiety and stress during the pandemic. They used the Life Satisfaction Scale by Diener et al (1985) to measure participants satisfaction with life and found significant results, although they did recognise the limits of self-reported data. In news exposure research, it was highlighted that those who did not have a sense of belonging (Slater, Henry, Swain and Cardador, 2004) were more likely to be affected by the news. This is a potential factor for people to report being less satisfied with their life and therefore a suggestion that having a lower satisfaction with life, can lead to being more vulnerable to news exposure. People are less threatened by belief challenging content, when they feel they have some control (de Hoog

& Verboon, 2020). In Lachman, Rosnick, and Röcke's (2009) research into life satisfaction, they found that people who reported a greater life satisfaction, reported a greater sense of control over their life and what they were exposed to. Life satisfaction was related to social relationships. This reflects Valkenberg and Peter's (2013) findings which showed that people who can access social support, were less likely to have their beliefs about the world altered by negative news content. One difficulty in exploring life satisfaction is its overlap to other variables, such as social support. Veronese et al's (2019) study highlighted how having a greater life satisfaction before negative events took place, meant that negative affect arousal was lower in response to the traumatic events taking place. However, this research further relates satisfaction with life to a sense of belonging and social support around the individual.

These findings suggest that although news has been found to have negative effects on viewers, there are potential variables that can be developed within people or in people's lives to protect them from the damaging effects of negative news content.

2.7 Cognitive appraisal theory and news content

The recurrent theme arising within research exploring how negative news content impacts viewers, is a focus on cognitive appraisal theory. Cognitive appraisal is the term used to explain the process whereby an individual assesses and evaluates a situation or event to interpret and provide an emotional and behavioural response (Moors, 2020). The literature understands news consumer's emotional responses to negative news content to be a direct result of how they have appraised the information provided to them. Traumatic events can cause people to question their perception of the world, such as how safe they are (Janoff-Bulman, 1989). If the news consumer perceives the content to be providing them with conflicting

information to their pre-existing belief systems, they experience a state of CD where their emotions will become unregulated, and they will feel under threat. To regulate their emotions Festinger (1957) outlines how the individual will be motivated to either reduce or avoid dissonance. This can be achieved by rationalising their belief, reducing the importance of the dissonant information they have been exposed within the news content or by selectively seeking information that confirms their pre-existing belief from the content shown. Harmon-Jones (2020) outlined that belief intensification has been identified as a strategy to attempt to resolve dissonance resulting from belief disconfirmation. For instance, if someone watches negative news content online and this conflicts with their beliefs, they may be driven to change the belief of others to what they believe by responding with a comment which develops their certainty in their belief. Others may choose to accept the new information and reduce the certainty they feel about their belief. However, some viewers may not be affected by dissonance at all. This highlights how people's cognitive states influence their emotional states and behaviours when consuming news content. It also demonstrates that individual differences need to be considered when exploring how people are impacted by negative news content.

2.7.1 The interaction between cognitive and emotional processes in news exposure

Several studies have analysed the process of news content appraisal and the factors that people consider, which will then impact their emotional response. De Hoog and Verboon (2020) found that individuals adopt a way of appraising the news that they are exposed to. If news is found to be perceived as less severe or the content of the news is felt to be something that the individual feels they have more control over, then it is less likely to trigger a significant emotional response due to the risks to the consumer being perceived as less severe. People will also appraise whether the behaviour shown within the content, such as aggression, is intentional

or non-intentional as this can further impact the level of distress a person experiences in relation to the information provided to them (Unz, Schwab & Winterhoff-Spurk, 2008). If the information does not match with a person's beliefs, such as a person being violent towards an animal, the individual may feel less distressed if they perceive the aggression to be unintentional. Greater levels of anger, sadness and disgust were identified in relation to intentional aggressive content. It has also been identified by de Hoog and Verboon (2020) that people who appraise the news content viewed as being more negative, will experience an increase in negative emotions and a decrease in positive emotions. This implies that news which focuses only on the negatives of the event and catastrophises the narrative, influences people's attitudes towards the events and therefore their emotional response (Vasterman, Yzermans & Dirkzwager, 2005). Hansen (2009) identified that different countries had different attitudes towards SARS, a respiratory virus, because of what aspects of the story the news focuses on. Valkenberg and Peter (2013) highlighted how people's perceptions of the news being credible can impact the extent to which they are influenced by the content shown. People will be less emotionally distressed by news content if they do not perceive it to be credible and therefore do not feel their beliefs need to be challenged.

After negative news content has been appraised, studies have outlined how people report a lack of trust in others and a sense that something bad could happen (Dougall, Liegey, Hayward, & Baum, 2005) which highlight some challenge to their beliefs about others and the world. These researchers identified that the findings were delayed and perceived this to be a result of beliefs systems being rigid and therefore change only being evident after ongoing challenge from watching news content overtime. Dougal, Liegey, Hayward and Baum (2005) found that negative perceptions of the world were identifiable by participants 2-3 months after the Anthrax attacks due to media consumption. McNaughton-Cassill (2001) discovered that people who

held more negative assumptions about the world before engaging with negative news content, reported less anxiety when engaging with this type of content, than those who held positive beliefs about the world. McNaughton-Cassill (2001) concluded that anxiety and feeling threatened after consuming news content, is largely a result of CD and perceiving that their ideas and beliefs about the world are being challenged.

Unz, Schwab and Winterhoff-Spurk (2008) found that disgust, contempt, and anger were specific emotions that participants were detecting when watching violent television news content. These emotions were found to activate cognitive appraisal processes resulting in criticism and social evaluation in participants. The need for numerous emotions to be analysed in news content impact studies was argued by Unz, Schwab and Winterhoff-Spurk (2008) as they identified links between several emotions and cognitive processes. There has also been acknowledgement that the discrete emotions leading to CD can be subjective and dependent on the relationship the individual has with the content causing the dissonance (Bran & Vaidis, 2020). This means emotions and CD are challenging to investigate in groups due to individual difference. However, Taddicken and Wolff (2020) explored the impact of CD online in relation to exaggerated or fabricated news content which was opinion-challenging and of a negative tone. They found that anger was significantly raised in viewers when they viewed this content. A greater increase in anger, led to a greater avoidance of the content, which is identified as a coping strategy for CD. Furthermore, Harmon-Jones (2020) looked at political news content shared through social media and identified greater hostility in participants who were more motivated to want to respond in some form behaviourally to the conflicting content they viewed within the study.

2.8 Measuring Cognitive Dissonance

Previous research has measured CD by exploring how participants resolve their dissonance state, such as changing their attitude (Gosling et al, 2006; Harmon-Jones, Gerdjikov & Harmon-Jones, 2008). However, the measures used to measure participants' attitude change are usually single item measures that do not take account of the interaction between emotional and cognitive constructs that then influence attitudes (Martinie, Milland & Olive, 2013). Elliot and Devine (1994) developed the 'Dissonance Thermometer' which primarily focuses on the emotional arousal of discomfort, which is thought to be associated with the cognitive dissonant state. The feeling of discomfort has been debated within CD research as some believe the state of CD is an emotional state on its own, whilst others believe that it only increases the negative affect which is already established (Harmon-Jones, Harmon-Jones & Summerell, 2017; Harmon-Jones, 2000). Focusing solely on the emotional element of CD would not be a reliable method for measuring its presence. The 'Dissonance Thermometer' also neglects the cognitive components of CD and has only been utilised in research where participants have been asked to produce counter-attitudinal work to induce CD. For instance, a recurring method of inducing a dissonance state within research has been to ask participants to write a counter-attitudinal essay (Martinie, Olive & Milland, 2010) and rarely studies have utilised a more natural behaviour such as watching news content that may address counter-attitudinal information. Forced compliance with an activity, such as essay writing, has been found to make it easier for people to dismiss dissonance when it occurs (Festinger & Carlsmith, 1959) and is different to being provided with counter-attitudinal information, such as news content.

Ploger, Dunaway, Fournier and Soroka's (2021) study is one of the earliest studies that have utilised non-artificial stimuli in their research to analyse dissonance using news footage.

However, they found that dissonance could not be measured accurately through physiological means such as measuring participants' heart rate and skin conductance. Researchers have explored how dissonance arousal can be associated with increased skin conductance, as this cognitive state has been found to activate the sympathetic nervous system (Ploger, Dunaway, Fournier & Soroka, 2021). However, studies have found different results in terms of attitude change and skin conductance (Etgen & Rosen, 1993; Elkin & Leippe, 1986; Croyle & Cooper, 1983) and therefore physiological measures have been found to lack generalisability. Behavioural activation, in response to dissonance, has been a further means of measuring CD. Harmon-Jones (2020) was able to positively relate the level of CD experienced by participants, with the level of motivation to respond to political news when hostility was felt.

Previous studies, focusing on measuring the extent to which dissonance is occurring, have sought out objective means to do so as this increases the reliability of findings. However, these objective means focus on other responses which may cause dissonance and do not identify whether dissonance is occurring first, which is feeling their belief system is being threatened. Metzger et al (2020) developed a CD measure which focused on the impact to beliefs, when provided with political news content. This measure was general, focusing on agreeableness to the content shown, feeling uncomfortable about supporting the news source and liking the news source. These elements focus less on the threat to someone's beliefs and instead begin to explore how someone may appraise what they have seen through. Metzger et al's (2020) did gain significant but low results for CD in this study and this may have been a result of the measure used lacking validity. This measure is not appropriate for this study because it does not control other variables related to cognitive appraisal. The Core Belief Inventory (CBI; Cann et al, 2010) focuses on assessing the extent to which people feel aspects of their world are being challenged which is the fundamental aspect of CD.

The CBI assesses the degree to which an individual perceives they have been made to examine, not change, their core beliefs because of the information they have been provided. The measure predicts that the greater the examination reported, the greater disruption there has been experienced to someone's assumptions about the world and others. This measure recognises that, during this process of belief examination, individuals can recognise both positive and negative implications of what has been witnessed in a singular event and therefore belief examination can be a positive or negative process. For instance, if someone observes news content whereby someone was helpful or kind, this positive information is then used to re-examine their beliefs about that person or the group of people that they may have previously held a negative belief towards. If someone was being aggressive or violent in the news content, this negative information is then used to re-examine their core beliefs about the person or the group they may have held a positive belief towards. Cann et al (2010) identified that those who report greater CBI scores when witnessing a stressful event, also reported greater levels of stress. This measure therefore sensitive to the relationship between cognitive and emotional change, whilst also paying attention to the initial response of CD, which is for someone to feel that their beliefs are being challenged.

Research into news content has highlighted that how people respond cognitively to content, can impact whether they become emotionally dysregulated. Once content has been appraised, people either experience a challenge to their core beliefs or do not. Those who experience this challenge, known as CD, when watching negative content are more likely to report distress through emotional dysregulation. The CBI can be used to measure CD and research encourages researchers to focus less on categorising emotions into positive and negative groups only and instead explore each discrete emotion as separate entities. Therefore, studies focusing on cognitive appraisal theory found that how news was framed influences how people responded.

2.9 News Framing

How news is presented and what elements of the event are focused on is known as news framing. The selection and highlighting of specific information to develop news content is utilised to influence specific attitudes in news consumers (Shen, 2004). Research has demonstrated how people's attitudes impact their emotional response through cognitive appraisal (Ellsworth & Scherer, 2003). How news is framed can therefore influence how people respond to the news and how it affects their internal state. When exploring how news has developed overtime, it is evident that negatively framed news content is becoming increasingly more concentrated within the media. Trussler and Soroka's (2014) study provides an explanation for this as being a response to consumer demand as their findings highlighted that people are more likely to select negative framed news content over positively framed news content.

Research into positive and negative framed news has demonstrated that there may be a difference between how negatively framed news content and positively framed news content can impact a consumer. Findings have suggested that negatively framed content can incite a significant negative emotional response in comparison to positively framed content, which provides the same context, with a different focus. Balzarotti and Ciceri (2014) provided participants with news articles about landmine victims and victims of a disease, but some participants were provided with a focus on the negative and life changing consequences (negatively framed) of these events whilst other participants were provided with a focus on the solutions found to save and increase the quality of life for these victims (positively framed). The findings showed that participants in the negatively framed group reported significantly more fear than participants in the positively framed group. Several studies have identified that when people perceive the content of the news, they view to be negative, they report a significant

increase in negative emotions and a significant decrease in positive emotions (de Hoog & Verboon, 2020; Harell, 2000; Szabo & Hopkinson, 2007). Sabo and Hopkinson (2007) provided participants with random news coverage, anything available at the time on the television. They found that the news that was shown randomly was negative content concentrated. There was some positive content shown but this was found to not be enough to buffer the emotional impact of the news. Harell's (2000) findings found similar results in terms of participants' emotional responses when watching negative news content, but they found that watching both positive and negative content did lower the emotional impact of watching solely negative news content. This suggests that to understand the impact of negative and positive ONC, the type of content shown to participants does need to be controlled. De Hoog and Verboon (2020) found that negative news content did cause an increase in negative emotions and a decrease in positive emotions, highlighting these findings were also relevant for daily news content posted on social media.

2.9.1 The psychological impact of unconstructive news framing

The impact of negatively framed news does not just impact people's emotional states but has also been found to influence psychological distress. Due to the COVID-19 pandemic, researchers have begun to focus on the topic of ONC because of the sudden increase in news consumption that took place. Chao et al (2020) concluded that there were negative and positive associations between the type of content shown and psychological outcomes during the pandemic in China. The type of news content viewed, positive, through motivational speeches, or negative, through stressful content, influenced whether depression was evident in consumers of media. A greater consumption of negative content about the pandemic was found to be a significant predictor of depression in individuals. Further studies have identified that the tone

and selection of negative words to depict media coverage events such as mass violence, can influence greater distress, physiological reactivity to threats and poorer perceptual sensitivity in news consumers (Wormwood et al, 2019). Anxiety has been found as a further response to observing negative news content (Szabo & Hopkinson, 2007) and this was found to remain with consumers after watching the content and engaging in their daily activities. Only participants participating in a guided and structure relaxation activity were able to regulate this anxiety. Such research has strong implications from a counselling perspective as these findings demonstrate how people who view negative ONC in their daily lives, are left emotionally and cognitively vulnerable.

2.9.2 The cognitive impact of unconstructive news framing

As discussed previously, the emotional and psychological response to news content can be understood via cognitive appraisal theory (Unz, Schwab, & Winterhoff-Spurk, 2008; de Hoog & Verboon, 2020; Balzarotti & Ciceri, 2014; Piotrkowski & Brannen, 2002; Gross & D'Ambrosio, 2004). This concept is relevant in terms of how news is framed because the way news content is presented can manipulate someone's sense of reality. Shoemaker (1996) highlights how the media can impose their own logic to news stories to emphasise areas of the news event they want to depict, based on the dominant attitudes and values. Focusing on specific consequences of news topics such as economic gain versus crime rate (Igartua & Cheng, 2009) or poverty of victims versus the criminal damage they caused (Gross & D'Ambrosio, 2004) has been found to influence public opinion over events and shape people's empathy or anger at those involved in the event. However, information that challenges a person's beliefs about the world, others or themselves has been related to anxiety, helplessness,

and depression after observing a traumatic event (Janoff-Bulman, 1989). How the framing of news content can challenge a person's beliefs has been explored in the following research.

Some studies have focused on people's perception of risk within news content. Risk perception is an active, personal process of evaluation of potential harm to self or others in relation to an emotional arousal from an environmental stimulus (Marshall et al, 2007). More recently, Olagoke, Olagoke and Hughes (2020) explored the impact of watching television and reading newspaper news coverage of COVID-19 on news consumer's risk perception of the pandemic. News coverage regarding the pandemic was focused on communicating the severity and contagiousness of the virus, hence aimed at increasing the perceived risk of the virus. Risk framed news regarding the pandemic was positively associated with greater risk perception in news consumers and this was positively associated with psychosocial distress. Further studies have focused on the perception of risk in other contexts such as terrorism. Holman, Garfin, Lubens and Silver's (2020) study explored the impact of media coverage after a terrorist attack and found that people who engaged in media coverage of the event afterwards, appraised the potential risk of future attacks as much greater than those who did not. Rubaltelli et al's (2018) study strengthens these findings as their research found that participants who observed pictures of terrorism rather than neutral pictures, were much more likely to perceive that future terrorist attacks were likely. In Holmanm Garfin, Lubens and Silver's (2020) study the cognitive appraisal of risk was found to be related to reported anxiety, acute stress, and PTSD symptoms, such as avoidance or intrusive thoughts, in those exposed to the content. Vasterman, Yzermans and Dirkzwager (2005) reviewed the literature on 'media hype' after natural disasters had taken place. The term 'media hype' is used in reference to news content reinforcing one perspective rather than taking a holistic view of a disaster. They found that news coverage of these type of

events do tend to magnify risk using framing, and this does impact people's beliefs about the world and people's sense of safety significantly.

Further factors which have been found to be relevant in the process of cognitive appraisal of news content are the level of perceived control someone feels they have of managing the threat communicated as well as how relevant this threat is to their personal lives. News framing can be used to manipulate someone's perception within these two areas. De Hoog and Verboon's (2020) study identified that the more relevant a person considered the news content to be to them, the greater the increase in negative emotions reported. This study calls for news content to consider how it frames news as people who reported that they perceived they had less control over the threat, reported greater distress. Balzarotti and Ciceri (2014) also identified that the participants were appraising how relevant the threat was to them which was influencing their emotional reactions. For example, the threat of disease was found to incite much more fear in participants than the news coverage of land mine victims as participants perceived that they were more likely to be faced with a disease one day over a land mine site. In Ahern et al's (2002) research into the media coverage of 9/11, they identified that distress because of exposure to media coverage was in relation to an appraisal of the event being out of people's control. The depiction of people falling and jumping out of the two buildings being the focus of the media coverage and this highlighted the limited control victims did have over their survival. Participants reported these images and videos within the media were what distressed them most.

2.9.3 Constructive news framing

A recurrent theme within news exposure research, surrounds the need for the media to consider presenting news events in more constructive ways. In Balzarotti and Ciceri's (2014) study, they noted that fear can be reduced if the same news content is framed in a positive way, suggesting that it is the way news is delivered, rather than the news content itself that is problematic. McIntyre and Gyldensted (2017) call for positive psychology techniques to be integrated into news reporting by being solution focused when reporting negative events rather than being problem saturated. McIntyre and Sobel (2017) found that news coverage which focused on solutions as well as the issues at hand, reported greater positive affect amongst participants. However, they did not report higher levels of perceived self-efficacy, more favourable attitudes about the story topic, greater intentions to act, or engage in more prosocial behaviours as a result.

The way news is framed overall, whether this being more negatively or positively, has been found to be culturally interchangeable based on what is deemed socially appropriate by individual countries (Borah, 2009; Oishi & Diener, 2009). The literature highlights that some cultures appear to tolerate uncertainty better and are more likely to take a focus on negative content over positive (Hofstede, 2001). Although Soroka, Fournier and Nir (2019) concluded in their study that negativity bias is a phenomenon effecting several countries and is not solely a western phenomenon. However, news being spread via ONC means communities that would once not have had access to news depicting violence or images of a graphic nature, now are.

Some researchers argue that negatively framed content should not be removed in its entirety and call for a more balanced framing within the news. This is because it has been found that

increasing risk perception, via the news media, can help to motivate the public to partake in protective behaviours, such as mask wearing within the COVID-19 pandemic (Jones and Salathé, 2009). Psychological resilience has also been found to be developed in response to some exposure to negative life events (Seery et al, 2010). In Shen's (2004) study looking at political news, it is argued that people are not as influenced by content as much as research has outlined. Shen (2004) demonstrates in their findings that people with greater knowledge on a topic and therefore greater confidence, can call upon their own assumptions and beliefs when observing news content.

Overall, researchers are calling on a balance within the media to provide negative news in a constructive and informative way, rather than being emotionally led to prevent distress. News content is helpful in relieving anxiety in situations where a collective trauma has taken place, as it keeps people informed (Vasterman, Yzermans & Dirkzwager, 2015). It can also prevent naivety in people and therefore call upon them to engage in more protective behaviours (Holman, Garfin, Lubens & Silver, 2020). However, it can also cause significant distress when developed for the purpose of inciting negative emotions only. Although it is useful to think about the framing of future online news, it is important to establish the impact of how news is currently framed.

2.10 Conclusion

The most significant and recurring theme within the literature is that there is a significant difference between how negative and positive news content can impact an individual. Negative news content has the potential to significantly impact someone's emotions as people report increasing in negative emotions and decreases in positive emotions after watching this type of content. There have been significant findings of PTSD symptoms from

people who have viewed numerous news content which covered a traumatic event. Furthermore, significantly negative responses to watching news content was not limited to direct victims of the traumatic events being covered only. Research highlights that vicarious trauma can occur from engaging in frequent news coverage of traumatic events. Emotional reactions to the negative news content have been found to relate to how someone appraises the news content they view and how this is appraised is dependent on several factors such as perceived severity of the news story, the relevance of it and how much control someone feels they have over the risks and issues that are being communicated within the content. Significant emotional dysregulation has been found to occur when someone feels their beliefs are being challenged by what is being presented within the news. Individual differences can potentially increase or decrease someone's susceptibility to how influential negative news content is to their emotional, psychological, and cognitive states. Research into factors that increase resilience, provide more insight into these differences.

2.11 Limitations of the literature

Although some limitations have been identified within this review, this section will provide a summary of these critiques, along with further observations from exploring research into negative news exposure.

The design of studies into news exposure varies considerably as studies attempt to balance between a controlled setting and a more naturalistic environment. In studies that take a more controlled approach, participants are asked to watch edited samples of content within a laboratory setting (Balzarotti & Ciceri, 2014). This significantly lowers the ecological validity of the study but offers more control over variables compared to the studies that take a more

naturalistic approach. For example, Ahern et al's (2004) study explored how participants responded to the news coverage of the 9/11 attacks by using telephone surveys. This way people were voluntarily watching the content they wanted to watch which significantly increased the ecological validity of the study as human behaviour was occurring naturally. However, as is the nature of these types of studies, controlling what people do and do not see and being able to distinguish a control group in terms of exposure to content is not possible. De Hoog and Verboon's (2020) study utilised a similar technique only they used an app to notify participants to complete a survey which is known as an ecological momentary assessment. The problems that were accounted were that participants were not able to recall what they had seen that week unless it was recent and so results were not accurate. As is the difficulty with longitudinal studies, participant engagement rate began to fall as the research progressed. In terms of the design of the study, it appears to be finding the balance between realistic but controllable is challenging but a more obtainable goal within short-term studies that analyse a response in that moment.

The content of some studies either focused predominantly on one event such as 9/11 (Ahern et al, 2004), Hurricane Sandy (Goodwin, Palgi, Hamama-Raz & Ben-Ezra, 2013) or the Boston Marathon Bombing (Garfin, Holman & Silver, 2015) and therefore the results of the study are not generalisable. In real life, people will be exposed to several various events rather than observing several samples of content about one event. The results may be more significant than they would be in real life as the participant has had more challenge at one period to their beliefs.

Some measures, particularly for emotion, did not take baseline readings which means that participants may have been in a particular emotional state before engaging with the study. Studies using an emotional measure analyse the change in emotion rather than taking one

reading. Additionally, some aspects of the dimensional perspective of emotion have been found to be subjective. Most people have similar views on what emotions are positive (happiness, relaxation) and negative (anger, disgust). However, people begin to disagree when they are asked to rank how negative or positive, they believe each emotion is to them. In Harmon-Jones and Harmon-Jones' (2009) study, the emotion anger was found to be positively correlated with positive affect when measured using the Positive Affect and Negative Affect Scale (PANAS). This was identified not because anger is experienced as a positive emotion but because anger is associated to approach motivation as is positive emotion (Harmon-Jones, Harmon-Jones & Price, 2013). Therefore, theorists argue that research which analyses emotions should do so by exploring them individually using a discrete emotions perspective. Some study findings (de Hoog & Verboon, 2020; Szabo & Hopkinson, 2007) may have obtained unreliable results because of this.

Some studies did ask for participants to complete outcome measures to assess their pre-existing mental state in terms of depression, anxiety, and PTSD (Silver et al, 2013; Feinstein, Audet & Waknine, 2014) which enabled them to control for individual differences better than other studies. However, in these studies, numerous measures were then provided to participants which meant that there is the risk that participants lost focus and disengaged from completing questions accurately. Some researchers noted that scales needed to be shortened in length to balance the issues around length of questionnaires and obtaining the data they needed.

Other than Bourne, Mackay and Holmes's (2013) study looking into flashbacks because of vicarious trauma to traumatic imagery and Unz, Schwab and Winterhoff-Spurk (2008) examining people's facial expression who were exposed to negative news, the findings in other studies are taken from self-reported methodology which is limited on the basis that it is

subjective. However, this topic is heavily focused on people's perception and appraisal of stimuli and their sense of the world and others impacting their emotions and will therefore be subjective. Mediation models are utilised to provide an explanation for relationships that occur. In research looking at the motivation and frequency in which someone engages with news content, it is challenging for the studies to conclude what variable is responsible for what outcome. For instance, studies such as Valkenberg and Peter (2013) and Dougall, Liegey. Hayward and Baum (2005) found a potential reciprocal relationship between engaging with the news and distress. It could not be concluded whether news was being used as a coping skill regarding distress, or whether engaging with the news was the cause of distress or whether the two relationships were reciprocal.

2.12 Gaps within the research

Extensive research has explored cognitive appraisal theory as a way of understanding the emotional impact of the news (Unz, Schwab, & Winterhoff-Spurk, 2008; de Hoog & Verboon, 2020; Balzarotti & Ciceri, 2014; Piotrkowski & Brannen, 2002; Gross & D'Ambrosio, 2004). However, less is known regarding how the emotional change from viewing news content is associated to the state of CD which takes place after the initial appraisal of the information. Understanding this part of the process will help provide more insight into how influential people perceive news content to be and what factors are associated with people who are more vulnerable to news shaping their belief systems.

Furthermore, previous research into negative news content has focused more on the potential problems that online news content can cause and less on how people can overcome these problems. Previous research has concluded with emphasising the need to change how news is

framed to the public due to the negative impacts on consumers mental health. However, realistically this is not a process that will take place immediately. It would therefore be beneficial for research to take a focus on identifying protective factors that can support individuals in developing resilience when subjected to negative news content. Some studies have begun to explore this in terms of factors such as access to social support (Valkenberg & Peter, 2013) reducing the risk of the news influencing someone's beliefs but exploration in terms of social factors and how these interact with media exposure (de Hoog & Verboon, 2020; Houston, Spialek & First, 2018). However, to gain any extensive exploration into this area of potential protective factors, focus needed to be shifted towards Counselling Psychology literature looking at posttraumatic growth.

Chapter Three

Study 1: Comparing the immediate impact of online news content positive/negative) on viewer's emotions and examination to core beliefs.

3.1 Introduction

3.1.1 Rationale

The current study was developed because of the rise in the use of social media as a means of consuming news (c.f. Chpt. 2, section 2.2). Research has found that watching unedited forms of news content, depicting live and up-close news footage of significant events, does impact consumer's wellbeing (c.f. Chpt. 2, section 2.3 and 2.4).

The current Chapter was influenced by de Hoog and Verboon's (2020) study that assessed whether viewing the news can make people unhappy. They concluded that daily news consumption, which was perceived to be negative by the viewers, increased negative affect and reduced positive affect in the viewers. The current study seeks to replicate this finding and ascertain whether specific emotional changes are taking place when people view ONC and whether this reported emotional change influences cognitive processes, such as examining participants' core belief system.

This investigation draws on Cognitive Behavioural Theory (CBT) which argues that all emotions, cognitions, and behavioural processes are linked in a cycle and influenced by one another (Sanders & Wills, 2007).

3.1.2 Emotional State and Cognitive Dissonance

Emotions can be viewed through several theoretical lenses (c.f. Chpt 1, section 1.2.3). This current study aligns with Izzard's (2010) definition of emotion, that emotion is a *'feeling state or process that motivates and organises cognition and action. Emotion also provides information to the person experiencing it and may include antecedent cognitive appraisals and ongoing cognition including an interpretation of its feeling state ... emotions have multiple and quite significant functions'* (p. 367-368).

In this Chapter, discrete emotions are investigated as independent constructs, as well as valence, to better understand the specific emotions involved when watching ONC (positive news, negative news). A discrete emotions measure is also utilised to investigate whether specific emotions are involved with examination to core beliefs when new information has been viewed from the ONC viewed. However, dimensional perspectives are drawn upon to explore the interaction between changes in emotional valence and types of news. An exploration of the literature suggests that past research has predominantly drawn on emotional valence (positive affect, negative affect) to research Cognitive Dissonance (CD) (Cancino-Montecinos, Björklund, & Lindholm, 2018; Gregory-Smith, Smith, & Winklhofer, 2013). For this reason, hypotheses are drawn from knowledge regarding positive and negative valence of emotions, but measures of emotion are taken using a discrete method where a change in each emotion is scored and analysed too.

Cognitive Dissonance is the term provided to the process whereby an individual is faced with information that conflicts with their current beliefs. This triggers a feeling of tension or unpleasantness known as dissonance which the individual wants to escape (Festinger, 1957). Some theorists have argued that the negative affect reported by participants in these studies

relates to the tension and unpleasant feeling that are experienced from the cognitive conflict that has occurred. It has therefore been questioned whether CD is an emotional state independent from other emotional states (Elliot & Devine, 1994). However, further research has identified a relationship between negative affect and CD (Harmon-Jones, 2000; van Veen et al, 2009). Harmon-Jones (2000) identified that CD had no effect on positive emotions, but did increase negative emotions, highlighting how positive and negative emotions work independently and not in relation to one another. Fontanari et al (2012) concluded in their research into emotions and CD, that there is a need to use more refined emotional measures which look further than basic emotions when studying CD.

Cognitive Dissonance has been associated to emotion regulation because resolving CD is about regulating the negative affect that has been aroused (c.f. Chpt 2, section 2.8). The current study is interested in whether examination to core beliefs can be predicted by specific emotional changes, as this will support greater insight into how ONC is specifically influencing consumer's internal processes. The study aims to investigate whether ONC could potentially impact the extent to which examination to core beliefs takes place in viewers and whether the type of content (positive news, negative news) viewed, impacts whether the reported examination to core beliefs (CD) is resolved in participants that are impacted.

It is important to note that CD can have two outcomes, desired or undesired (Harmon-Jones & Harmon-Jones, 2018). Desirable dissonance outcomes refer to a positive event which conflicts with someone's negative beliefs about the event and therefore causing inconsistent cognitions (Harmon-Jones & Harmon-Jones, 2018). Undesirable dissonance outcomes refer to a negative event which conflicts with someone's positive beliefs about the event which again causes inconsistent cognitions (Harmon-Jones & Harmon-Jones, 2018). The example provided by Harmon-Jones and Harmon-Jones (2018) was of two students who desired to do well on their

tests. One expected that they would *not* do well (negative belief) and one expected that they *would* do well (positive belief). The student who had the negative belief that then completes the test and does well, will experience dissonance but is happy with the result (desirable dissonance). The student who held a positive belief but did not do well on their test will also experience dissonance but will not be happy about this result (undesirable dissonance). Harmon-Jones and Harmon-Jones (2018) outlined that participants respond to unexpected events or information with an arousal of negative affect regardless of whether the event or information is positive or negatively appraised. The difference occurring is that when the information or event is appraised as being positive, the negative affect is quickly replaced by positive affect. Cancino-Montecinos, Björklund and Lindholm (2018) identified that positive affect is associated to attitude change and therefore supports with the resolving of CD. CD that has a desirable outcome can be resolved more effectively than CD with an undesirable outcome. This is because undesirable CD outcomes produce negative affect whereas desirable CD outcomes produce positive affect (Harmon-Jones & Harmon-Jones, 2018). Negative affect has been found to be negatively related to attitude change (Cancino-Montecinos, Björklund & Lindholm, 2018).

3.1.3 Overview and hypotheses

The current study seeks to understand the immediate emotional and cognitive impact of watching negative ONC, therefore positive ONC is utilised as a control group for comparison.

Online news content will be expected to elicit an emotional response (H_1). However, this response will differ depending on the type of ONC viewed (positive news, negative news) and thus the hypothesis should be split further.

As a result of watching the negative ONC, the expected emotional change from T1 (before watching content) to T2 (after watching content) is for negative emotions to increase (anger, disgust, fear, anxiety, sadness) and for positive emotions (happiness and relaxation) to decrease. Although desire may be considered a positive emotion, it is expected to increase, reflecting participants' motivation to resolve the dissonance experienced (Harmon-Jones & Gable, 2008). In the negative ONC condition, it is expected that the negative affect aroused will be unable to be resolved immediately as attitude change is more challenging. Emotions will remain aroused, but it is also expected that there will be a significant reduction in positive affect reported (happiness and relaxation; H₂) as outlined in de Hoog and Verboon's (2020) study.

As a result of watching the positive ONC group, positive affect is predicted to increase (H₃). Negative affect is not expected to be significantly aroused, as any negative affect triggered from reported examination to core beliefs will be regulated from immediate attitude change. When desire is reduced this is known as satisfaction. In the positive condition, desire is expected to reduce (H₃) because viewers will feel satisfaction from the resolving the CD reported from the examination to their core beliefs which is expected to take place due to viewer's acceptance of the new information provided to them and the consequent emotion regulation taking place. Satisfaction also supports a broadening of cognitive scope (Harmon-Jones, Harmon-Jones & Summerell, 2017) which relieves the perception of threat suggesting CD is resolved.

It is important to explore emotions in their discrete form as measures focusing on valence, such as the PANAS, have inaccurately measured what emotions are aroused (Harmon-Jones, Harmon-Jones & Price, 2013). However, to compare the direct impact of news content, a more

simplistic model is required. A comparison of positive and negative valence against positive and negative ONC provides a clearer overview of the interaction between emotion and ONC which can be compared against previous findings in this area (H₄).

If ONC is positively framed and initiates positive emotions, then it can be predicted that any CD that is reported through examination to core beliefs, will be resolved more promptly as positive affect is positively correlated to attitude change (Cancino-Montecinos, Björklund & Lindholm, 2018). If ONC is negatively framed and initiates negative emotions, then it can be predicted that any CD that is caused, will be resolved less promptly as negative affect is negatively correlated to attitude change (Cancino-Montecinos, Björklund & Lindholm, 2018). This is the predicted difference between the two groups. Negative ONC will influence a greater significant emotional change overall due to the unresolved CD meaning emotions are not regulated as quickly as those who watch positive ONC.

The current study explores how positive and negative ONC can impact the viewer's belief system. ONC can be positively or negatively framed and can therefore offer the consumer positive or negative insight into others, the world, and groups that they identify with. People viewing the news can experience CD watching either positive or negative content. This is because someone can hold a negative belief about an event and be provided with positive information that challenges this and vice-versa. Conflicting cognitions can occur both ways, therefore, CD cannot be predicted by the type of content viewed. To ensure a baseline measure, findings will be analysed to see whether there is no significant variance between results.

In the negative ONC condition, fear, anger, anxiety, disgust, and sadness are predicted to be positively associated to participants' reported examination to core beliefs (H₅). In the positive

ONC condition, there is no relationship predicted to be found between reported examination to core beliefs and discrete emotions as it is predicted that the CD will be resolved in relation to the motivation for attitude change to take place because of the positive affect experienced.

For ease of reference, the hypotheses are thus as follows:

H₁: There will be a change in emotional affect after watching ONC, compared to before.

H₂: In the negative ONC condition there will be a significant increase in anger, anxiety, sadness, fear, disgust and desire scores and a significant decrease in happiness and relaxation scores.

H₃: In the positive ONC condition there will be a significant increase in happiness and relaxation scores and a significant decrease in desire scores.

H_{4a}: There will be a significant positive interaction between negative news and negative valence and a significant negative interaction between negative news and positive valence.

H_{4b}: There will be a significant negative interaction between positive news and negative valence and a significant positive interaction between positive news and positive valence.

H₅: Examination to core beliefs will be positively associated with anger, anxiety, sadness, disgust, fear in the negative ONC condition.

3.2 Methodology

3.2.1 Design

Each independent t-test used a between-group independent variable as the type of content viewed (negative news or positive news). There were 8 within-group dependent variables analysed for happiness, relaxation, anger, fear, anxiety, disgust, sadness, and desire which is calculated by Time 2 – Time 1 measurements taken before and after content is watched.

A 2 X 2 ANOVA has been used. This used a between-group independent variable as the type of content viewed (negative news or positive news) and a within-group independent variable as valence (positive valence and negative valence). The dependent variable was the measured change in valence as calculated by Time 2 – Time 1 measurements taken before and after content is watched. A mixed design is utilised for this statistical test.

A stepwise regression was utilised. This used a between-group independent variable as the type of content watched (negative news or positive news). The predictor variables were the change in the 8 discrete emotions, as calculated by Time 2 – Time 1 measurements taken before and after content is watched. The dependent variable was the perceived examination towards participants' core beliefs.

Several participants submitted voluntary comments post participation in the study. This qualitative data was included within the study because the comments provided insight into the cognitive processes taking place when watching the ONC and supported with the development of study 2.

3.2.2 Participants

A G*Power analysis indicated the need for 72 participants to compare a repeated measure ANOVA. A total of 75 students responded to the questionnaire. However, 2 participants were removed from the analysis because they completed the study in less than 10 minutes, making their results void as the timings suggested that these participants did not follow all the instructions as the length of videos being viewed in full were longer than the time they took to complete the study. The final sample was made up of 73 participants, 42% males and 58% females). The participants age ranged from 18 to 66 years old, a total range of 48 years.

A minimum age of 18 years was required for participants to be able to participate in both studies. Those who have been diagnosed or suspect they have epileptic traits were asked not to take part, as part of the questionnaire's content contained flashing imagery.

3.2.3 Ethical Considerations

Approval for the study was obtained from the Faculty of Health and Wellbeing Ethics Committee at the University of Wolverhampton.

This study did not require any participants to provide their names, respecting the participants' right to confidentiality. Information was anonymised and each participant was provided with a unique generated number, consisting of the last three digits of their mobile phone number and the two digits from their postcode (e.g.,02373). The only demographic variables that were requested were the participant' age and gender. However, each category had an option 'prefer not to disclose'. No further individually identifying information was recorded.

All the data collected in this study was kept on an encrypted hard drive. Raw data was only accessible to the researcher and supervisors. Once the project has been completed, all the data stored will be deleted after five years. All participants were made aware of how their data would be stored and who was provided access to this on the participant information sheet.

Participants were asked to read a participant information sheet before providing consent in which they agree to being over the age of 18. This information sheet provided all participants with the title of the research project and details of what they will be asked to do if they choose to participate. The form also outlined the risks to taking part and notified all participants of their right to decline participation or withdraw from the study up to the point of submitting their questionnaire.

Participants were made explicitly aware that they would be required to view ONC, which may be very negative in nature. All content shown was accessible on Facebook in the public domain and deemed appropriate for the target audience of anyone over the age of 18 years. The content was also only taken from replicable online news channels such as Fox News or the BBC. Prior to completing the questionnaire, participants were issued with a debrief form outlining contact numbers for organisations that could provide psychological support if they feel that the study raised discomfort or issues.

3.2.4 Materials

3.2.4.1 Emotion Measure. The Discrete Emotions Questionnaire (DEQ; Harmon-Jones, Bastian, & Harmon-Jones, 2016) was used to measure participants' emotional states at both before Time 1 (T1) and after Time 2 (T2). The DEQ consists of 32 items reflecting

different emotional states (Appendix B). Participants provide a score for each emotional state, based on the extent, they perceived themselves to be experiencing each emotion at the time of completion on a seven-point scale of 1 (not at all) to 7 (an extreme amount). The DEQ was developed to overcome the problems arising from emotional responses being inaccurately reported due to the limited categorising of emotions though valence (Harmon-Jones, Bastian, & Harmon-Jones, 2016). Therefore, the DEQ supports an increase in research validity. The DEQ allows for consideration of emotional valence (positive and negative), emotional motivational direction (withdrawal or approach) and arousal (strength; high or low). The measure has an internal consistency of .80 (Harmon-Jones, Bastian, & Harmon-Jones, 2016).

The DEQ can be split into eight subscales. Four items measured Anger (*anger, rage, mad, annoyed*); four items measured disgust (*grossed-out, nauseas, sickened, revulsed*); three items measured fear (*fear, terror, scared*); four items measured anxiety (*anxiety, worry, nervous, dread*); three items measured desire (*desire, wanting and longing*); three items for relaxed (*relaxed, chilled out, easy-going*); four items for happiness (*happy, enjoyment, satisfaction, liking*). Appendix C provides a table of each discrete emotion outlined within the DEQ. The table summarises current definitions and understanding relating to each discrete emotion through research findings.

An item measuring anger was altered from *p*ssed off* to *annoyed* as the DEQ is an American scale. The previous term, *p*ssed off*, is not used in the United Kingdom in a professional context, hence the alteration to prevent offence. Collins (2020) highlights the term *annoyed* can be used to mean the same.

3.2.4.2 Examination to core beliefs. The Short Form Core Beliefs Inventory (CBI; Cann et al, 2010) is used to measure the extent to which participants feel they have examined

their core beliefs about the world, other people, themselves, and their future (c.f. Chpt 2, section 2.8). The inventory consists of 9 statements comprising of different criteria for which a person may form beliefs: fairness in the world, control, cause for people's thoughts and behaviours, relationships with others, own abilities, future expectations, meaning of life, religious/spiritual beliefs, self-value/worth (Appendix D). In the current study, participants were asked to report the extent to which they felt their core beliefs were examined in relation to the ONC they were asked to recall (0 = not at all; 5 = to a very degree). Previously, the CBI has been shown to have internal consistency with Cronbach's Alpha score of .82 (Cann et al, 2010). The higher the score on the CBI, the more a participant reflects having examined their beliefs. This should, however, not be taken to suggest that they have changed their beliefs. Participants who report a higher score on the CBI, and therefore report that they have experienced a greater examination to their core beliefs, suggest they have experienced greater CD.

3.2.4.3 Positive and Negative News Stimuli.

3.2.4.3.1 Pilot Study – Stimuli Creation. To commence with the current research project, two samples of ONC were required, positive and negative. A pilot study was carried out to collect these samples and to determine whether the general population could distinguish between, and therefore categorise, positive and negative ONC. ONC samples were taken from published, prominent social media news platforms such as Fox News, ITV News, ABC News etc on Facebook.

3.2.4.3.2 Pilot Study Design. The pilot study used a between-subject design with two news content conditions (positive content, negative content).

The independent between groups variable in the pilot study was the type of content provided to participants (negative ONC vs. positive ONC).

The dependent variable was the extent to which (1= not at all to 7 = an extreme amount) viewing positive or negative ONC impacted the participants' emotions.

3.2.4.3.3 Pilot Study Participants. The pilot study consisted of a total of 28 participants, of which 29% were male, 68% were female and 3% preferred not to state their gender. They had a mean age of 27 years, ranging from 19-57 years. The participants were self-selected to take part via a link to the study shared via social media. Participants needed to be over the age of 18 to participate, with an exclusion criterion in place of those diagnosed with epilepsy or suspected they had epileptic traits not being able to partake because some of the video footage contained flashing images.

3.2.4.3.4 Pilot Study Materials - Online News Content. The news content used within the study were all videos taken from prominent news networks which published their content to the social networking site, Facebook.

To find the news content for the study, a filter on Facebook was used to only display news items which were posted by prominent news networks in the last 2 years. The content which loaded was then placed into one of two categories (negative news vs. positive news). Negative content was defined according to the American Psychiatric Association's (2013) definition of a traumatic event, which was items displaying material which exposes the individual to death, news threatened death, actual or threatened serious injury, or actual or threatened sexual violence. For instance, a driver driving into pedestrians was one sample of content used.

Positive content was defined as news which focuses on growth, solutions, positive relationships, accomplishments, and resilience. This definition is taken from positive psychology and research exploring constructive journalism (McIntyre, 2020; McIntyre & Gyldensted, 2018). For example, a video of refugee children seeing snow for the first time and playing was used. The search was completed when there was 50 pieces of content each for both the positive and negative category (Appendix A).

Each piece of ONC was labelled with a number from 1 to 50. A computer-based resource (Research Randomizer) was used to randomly generate 10 numbers from 1 to 50 for each category (positive news and negative news). The selected material was then used in the pilot study questionnaire.

3.2.4.3.5 Pilot Study Procedure. The pilot study consisted of two groups. Qualtrics randomly presented participants with either the 10 positive news content items or the 10 negative news content items. In the positive ONC group there were 12 participants and in the negative ONC there were 16 participants (28 participants in total). After each item, a seven-point scale was provided to measure the positive and negative impact of each item, 1 (not at all) to 7 (an extreme amount). A scale for both positive and negative impact was displayed for all items in all categories to not influence the participants to believe the content is either one or the other. The data was then analysed to distinguish the top 5 items which produced the greatest positive emotional impact and the top 5 items which produced the greatest negative emotional impact. This limited the researcher bias when selecting the content for the two categories (positive news and negative news) as the samples were not chosen solely from the what the researcher deemed to be negative or positive.

3.2.4.4 Pilot Study Analysis.

3.2.4.4.1 Ranking of ONC samples (positive, negative). Outlined below are the descriptive statistics of the final online news samples, which were chosen from the data analysis of the pilot study. Results were ranked in descending order into 2 groups for type of emotional impact (positive emotional impact and negative emotional impact). Below are the top 5 negative emotional impact news samples (see Table 1) and the top 5 positive emotional impact news samples (see Table 2) from the pilot study. This was a within-subject design study. Partially completed questionnaire data was removed.

Table 1

Descriptive Statistics for Top 5 Negative Online News Content Samples

News Content Samples (Negative)	<i>n</i>	<i>M</i>	Range	<i>SD</i>
1 – Dog Market	16	6.20	4.00 to 7.00	1.03
2 – Driver Hitting Pedestrians	16	5.50	1.00 to 7.00	1.41
3 – Bomb	16	5.20	4.00 to 7.00	1.34
4 – Tsunami	16	5.00	1.00 to 7.00	2.07
5 – Van Crash	16	4.50	1.00 to 7.00	1.08

3.2.4.4.2 Paired Samples *t*-test for Negative News Content. A paired samples *t*-test confirmed a statistically significant difference in the type of emotional impact for negative ($M = 3.39$, $SD = 2.70$) and positive content ($M = 1.22$, $SD = .63$), $t(27) = 4.34$, $p < .001$, $d = 2.17$, 95% CI [1.14 to 3.19] for the top five videos of the positive and negative ONC.

Table 2*Descriptive Statistics for Top 5 Positive Online News Content Samples*

News Content Samples (Positive)	<i>n</i>	<i>M</i>	Range	<i>SD</i>
1 – Refugee Children	12	5.50	4.00 to 7.00	1.09
2 – Fox	12	5.31	2.00 to 7.00	1.78
3 – Cat	12	5.25	4.00 to 7.00	1.06
4 – Bin Man	12	5.00	4.00 to 7.00	1.81
5 – Bear	12	4.94	3.00 to 7.00	1.19

3.2.4.4.3 Paired Samples *t*-test for Positive News Content. A paired samples *t*-test confirmed a statistically significant difference in the type of emotional impact for positive ($M=4.98$, $SD = .95$) and negative ($M = 1.79$, $SD = 1.11$), $t(17) = 7.54$, $p < .001$, $d = 3.19$, 95% CI [2.30 to 4.09] for the top five videos of the positive and negative ONC.

3.2.4.4.4 Pilot Study Conclusion. The pilot study has highlighted that the participants were able to distinguish between positive and negative ONC based on the emotional response that the content triggers. Some participants responded to the pilot study noting that they had identified an immediate emotional response to viewing the content. Five samples of negative ONC were selected (dog market, driver hitting pedestrians, bomb, tsunami, and van crash) because these five samples triggered the highest reported negative emotional response overall. Five samples of positive ONC were selected (refugee children, fox, cat, bin man and bear) as these five samples triggered the highest reported positive emotional response overall. The content was then used within study one to explore the underlying processes of watching ONC in more detail.

3.2.5 Procedure

A link to the survey on Qualtrics was widely shared through social media channels. Once accessing the link, the participants were presented an information page which included all the relevant study information (Appendix E) which notified them that the study would be exploring ONC and the looking at the emotional and cognitive effects it has on online users. After consenting to take part (Appendix F), participants completed all DEQ items to measure their emotional state prior to commencing the study (T1). Next, either the five negative or five positive ONCs derived from the pilot study were randomly shown to the participants. Participants were asked to browse through the content as they would when browsing through online content in their own time with no time limit. Participants' emotional response to the content was then measured again at T2 using the same DEQ measure. Finally, each participant completed the CBI to measure the extent to which they felt their core beliefs had been challenged from explicitly viewing the content only. Upon completion of the CBI, participants were advised that their data was saved and sent to the researcher automatically. Participants were then thanked for their participation and were provided with an online debrief (Appendix G) which included signposting to various contributors and helplines as per the ethical approval of the study.

3.3 Results

3.3.1 The difference between viewing negative and positive ONC on discrete emotional change (H_1 , H_2 , H_3).

Applying a Bonferroni correlation to reduce the risk of Type 1 error, a series of independent t-tests were conducted to compare the emotional change for each discrete emotion

(anger, disgust, happiness, relaxation, sadness, desire, fear, and anxiety) for positive and negative ONC. Table 3 displays the descriptive statistics from these t-tests. A limitation of testing multiple t-tests is that family wise errors can occur. Each discrete emotion was analysed to provide more detailed insight into emotional changes, compared to only looking at emotional valence.

Table 3

Mean change in emotion scores as a function of Time (T1 and T2) and watching positive or negative online news content.

	Negative Online News		Positive Online News		<i>t</i>	<i>Sig.</i>
	<i>M</i> (T2-T1)	<i>SD</i>	<i>M</i> (T2-T1)	<i>SD</i>		
Anger	6.52	6.27	-.51	4.34	-5.59	.000
Disgust	7.94	6.27	.05	1.33	-7.50	.000
Happiness	-7.08	4.83	-.38	5.28	5.66	.000
Relaxation	-6.22	6.03	.97	4.89	5.61	.000
Desire	-3.19	3.71	-3.41	4.28	-.23	.823
Sadness	3.83	4.90	-1.65	3.39	-5.57	.000
Anxiety	2.69	4.36	-1.70	2.99	-5.04	.000
Fear	3.64	4.36	-.84	2.17	-5.58	.000

There was a significant difference in scores for the positive and negative ONC condition when fear, disgust, anxiety, happiness, relaxation, and anger were analysed (see Table 3). There was no significant difference in scores for the positive and negative ONC conditions when desire was analysed. This suggests that watching online news content does impact participants'

emotions (H_1) and the type of ONC viewed (positive news, negative news) can predict a difference in the discrete emotions that are increased or decreased other than desire. In the negative ONC condition, anger, disgust, sadness, anxiety, and fear increased and happiness and relaxation decreased, but desire reduced. In the positive ONC, relaxation and disgust increased whilst happiness, anger, sadness, anxiety, fear, and desire decreased.

3.3.2 *The difference between viewing negative and positive ONC on valence emotional change (H_4).*

A 2 (news content: positive ONC vs negative ONC) x 2 (emotion: positive valence vs negative valence) mixed ANOVA was conducted to assess the extent to which participants' emotion changed after viewing positive or negative ONC.

Table 4

Emotional difference scores (positive valence vs. negative valence) as a function of news type (positive news vs. negative news)

	Positive Content			Negative Content		
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
Positive Valence	37	-2.81	8.91	36	-16.50	10.21
Negative Valence	37	-4.65	11.13	36	24.63	19.37

Note. The DV is the emotional change calculated (T2 -T1).

There was a significant interaction between content type and difference in emotional valence, Wilks' Lambda = .50, $F(1,71) = 70.35$, $p = .000$, $\text{Eta}^2 = .50$, suggesting that positive and negative emotion change differed depending on type of content. As shown in Table 4, it appears that positive valence ($M = -2.81$, $SD = 8.91$) and negative valence ($M = -4.65$, $SD = 11.13$) decreased

slightly after viewing positive ONC. When viewing negative ONC, participants' positive mood decreased ($M = -16.50$, $SD = 10.21$), whilst their negative mood increased ($M = 24.63$, $SD = 19.37$).

There was a significant main effect of emotional valence, Wilks' Lambda = .55, $F(1, 71) = 58.83$, $p = .000$, $\text{Eta}^2 = .45$, suggesting that positive and negative emotional change between T1 and T2 are affected significantly differently. Positive emotional change was negatively impacted from T1 to T2 in both content conditions (positive news watched and negative news watched) but negative emotional change was positively impacted when negative online content was viewed (see Table 4). The main effect of content was also significant, $F(1, 71) = 22.22$, $p = .000$, $\text{Eta}^2 = .24$, suggesting that type of content viewed (positive, negative) had significantly differing impacts on emotion. When the content which was viewed was negative, there was a negative impact on positive valence and a positive impact on negative valence. When the content which was viewed was positive, there was both a negative impact on positive and negative valence (see Table 4). These findings support H_{4a} in that watching negative ONC appeared to have led to reports of feeling less positive and more negative in valence. These findings do not support H_{4b} because although positive ONC slightly reduced participants' overall reported negative mood, positive ONC caused a slight reduction in positive valence. Negative ONC had a more significant impact on emotional change from T1 to T2 overall.

3.3.3 The effect of the type of content viewed (positive news, negative news) on examination to core beliefs.

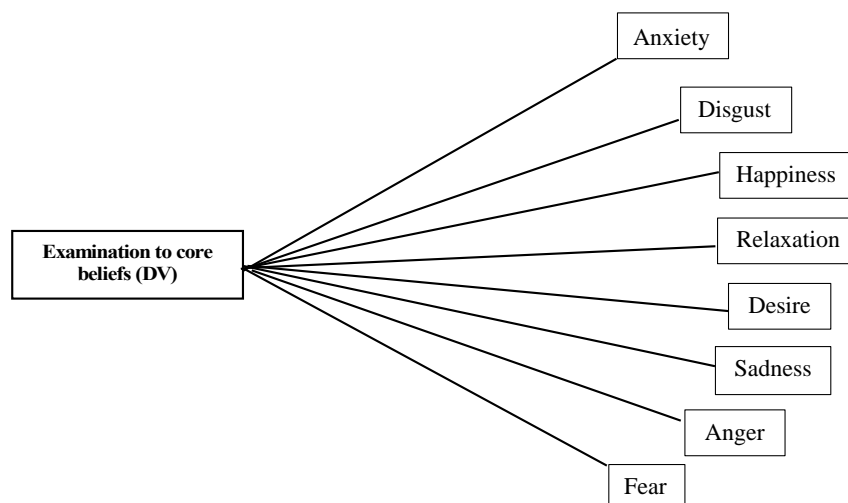
An independent-samples t-test was conducted to compare the extent to which participants' core beliefs were examined for those who viewed positive content and those who viewed negative content to gain a baseline reading for study one. As expected, there was no

significant difference found between scores for positive content ($M=22.68$, $SD=12.41$) and negative content ($M = 23.69$, $SD = 8.9$; $t(71) = -.404$, $p = .69$). The magnitude of the difference in the means (mean difference = -1.02 , 95% CI : -6.06 to 4.02), with a very small effect ($\eta^2 = .002$). Therefore, the type of content viewed, was not related to the extent to which participants examined their core beliefs.

3.3.4 The association between discrete emotions and examination to core beliefs when watching negative and positive ONC (H_5).

Figure 3

Model for the stepwise regression with examination to core beliefs as the outcome variable and the 8 discrete emotion scores as the predictor variables.



Note. This regression model was employed twice, in both the negative and positive ONC groups.

A stepwise regression was used to assess which discrete emotional changes predict examination to core beliefs after viewing either positive (Table 5) or negative (Table 6) ONC. The dependent variable was the participants' reported examination to their core beliefs measured by the CBI. The predictor variables are the participants' change in discrete emotions (anxiety, disgust, happiness, relaxation, desire, sadness, anger and fear) measured by the DEQ.

A measure was taken before the ONC was viewed (T1) and before the ONC was viewed (T2) to record the change in each emotion. The regression model was conducted twice in both the negative and positive ONC groups.

This model was used as the variables being tested (anxiety, disgust, happiness, relaxation, desire, sadness, anger, and fear) have limited past research involving them individually. Predictions can only be made from research looking into emotional valence which highlights an increase in negative affect related to negative ONC being viewed and CD being triggered. This being a less extensively researched area means a stepwise regression, which enables several explanatory variables to be analysed, can provide further insight into this research gap. It is worth noting however that stepwise regressions have been criticised for providing false confidence in findings due to an underestimation of the standard errors of the coefficients estimates (Smith, 2018). Preliminary analyses showed no violation of the assumptions of normality, linearity, multicollinearity, and homoscedasticity.

In the first stepwise regression model for the positive ONC condition (Table 5), the change in happiness scores explained 12.4% of the variance in examination to core beliefs scores. Inclusion of the change in desire scores in model 2 raised the total variance explained to 22.2%.

Table 5*Emotional change (T1, T2) association to examination to core beliefs*

	R^2	β	F	p	95% CI	
					LL	UL
Positive Online News Content						
Model 1						
Change in happiness	.124	-.35	4.95	.03*	-1.58	-.07
Change in desire		-.32		.05		
Change in relaxation		.29		.15		
Change in sadness		-.23		.18		
Change in fear		-.22		.17		
Change in disgust		-.06		.75		
Change in anxiety		-.18		.29		
Change in anger		-.33		.06		
Model 2						
Change in happiness	.222	-.40	4.86	.01*	-1.66	-.20
Change in desire		-.32		.05*	-1.82	-.02
Change in relaxation		.17		.40		
Change in sadness		.03		.92		
Change in fear		-.13		.42		
Change in disgust		.02		.91		
Change in anxiety		-.03		.87		
Change in anger		-.27		.12		

In the second stepwise regression model for the negative ONC condition (Table 6), only 1 significant model was found. Change in relaxation scores explained 11.6 % of the variance in examination to core beliefs scores.

Table 6

Emotional change (T1, T2) association to examination to core beliefs

	R^2	β	F	p	95% CI	
					LL	UL
Negative Online News Content						
Model 1						
Change in relaxation	.141	-.38	5.60	.02*	-1.03	-.08
Change in desire		-.25		.12		
Change in happiness		-.16		.38		
Change in sadness		.17		.40		
Change in fear		.21		.21		
Change in disgust		.03		.87		
Change in anxiety		.03		.89		
Change in anger		-.11		.53		

Note. * $p < 0.05$ (2-tailed)

In summary, a reduction in happiness and desire from T1 to T2, was found to be related to an increase in reported examination to core beliefs when viewing positive news content. A reduction in relaxation from T1 to T2, was found to be related to an increase in reported examination to core beliefs when viewing negative news content. These results suggest that positive emotional change, specifically a reduction in relaxation, can predict examination to core beliefs.

An increase in the negative emotions (anger, disgust, fear, anger, anxiety, and disgust) was not related to an increase in reported examination to core beliefs in either the negative or the positive ONC condition and so findings do not support the fifth hypothesis. A significant relationship was also found between the change in discrete emotions (happiness and desire) and examination to core beliefs within the positive ONC condition and similarly for the change in relaxation and examination to core beliefs within the negative news content condition.

3.4 Conclusion

In conclusion, the current study's findings strengthen previous research into news exposure, in that negative ONC can affect viewer's emotional state significantly by increasing negative emotions and lowering positive emotions. In comparing the data from the positive and negative ONC condition, negative content makes it observably more challenging for viewers to change their emotions. Therefore, it could be suggested that viewing negative ONC may influence viewers to feel unsettled. Furthermore, engaging in ONC (positive news and negative news), can cause self-identifiable conflict with the viewer's beliefs system (Chpt 3, section 3.3.3). This highlights the presence of CD as a direct result of consuming ONC. Specific discrete emotions were found to be related to reported CD in both conditions. This suggests that even though the same process is taking place in terms of CD, this effect may be dependent upon the type of content viewed. A reduction in desire and happiness was found to relate to CD when positive ONC was viewed. A reduction in relaxation was related to CD when negative ONC was viewed. This study has also highlighted the need to step away from grouping emotions into valence only, where possible, and to instead analyse emotions in discrete categories of function. Chapter five discusses these findings further.

Chapter Four

Study 2: Underlying processes in emotion changes leading to examination to core beliefs when ONC is recalled.

4.1 Introduction

The findings of the previous Chapter suggested that negative ONC may lead to emotional dysregulation and a suggested reduction in relaxation (Chpt 3, sections 3.3.2 and 3.3.4) significantly related to CD in the negative ONC. The current Chapter aims to examine the potential underlying processes result in participants experiencing CD, when watching negative ONC. A positive ONC condition will also be used as a control group. The previous Chapter provided comments from participants after they had completed the study (Appendix H). Recurring themes that were commented on were the frequency of which participants viewed ONC in their daily life and their social identities. Some participants related these themes to their beliefs and emotions when watching the ONC.

Within the Counselling Psychology discipline, Psychologists are interested in what biological, psychological and social characteristics an individual possesses to support a reduction in the likelihood of them experiencing negative outcomes in relation to stimuli that may impact their mental health (Dougal et al, 2016). These characteristics are known as ‘protective factors’ (O’Connell, Boat & Warner, 2009). The current study focuses on the underlying processes which take place when negative ONC is viewed, and examination to core beliefs takes place. These underlying processes will support identification of protective factors which may prevent or reduce the likelihood of a participant’s core beliefs being examined. Previous research has investigated similar ideas, focusing on how individual differences such as personality traits and

relatedness to the content (de Hoog & Verboon, 2020) can increase the emotional impact of news content on viewers. The protective factors explored in the current Chapter focus on participants perceptions and views of themselves, their lives and how they interact with the world around them. The background literature to the current study is therefore grounded by Counselling Psychology literature related to protective factors for psychological wellbeing.

4.1.1 Sense of self as a protective factor

In Psychology an individual's sense of self is understood as the outcome of how an individual views their traits, beliefs, expectations, and purpose within the world (Gecas, 1982; Jones 2004). Engler (2003) argues that the self is a psychological structure which triggers anxiety when unwanted and unwelcome information challenges this structure, whereas Charmaz (1990) identified evidence to support the idea that a person's social interactions throughout life shapes their sense of self. However, all these theories share the concept that a sense of self is part of a circular process related to internal and external factors. How someone interacts with their environment (external factors) is dependent on what someone wants their role and purpose to be in the world. This is further dependent on someone's beliefs and opinions (internal factors) on who they are and what fits this idea of who they are. People without a strong idea of their beliefs or role, are believed to have a weak sense of self (Flury & Ickes, 2007). Such individuals have been found to be easily moulded by their environment and the views of others which can cause their own opinions and views of the world, others, and themselves to fluctuate (Flury & Ickes, 2007). Having a weaker sense of self is therefore related to changeable feelings, especially for those who do not have confidence in their self-beliefs that is sufficient to ground themselves when interacting with the world around them (Flury & Ickes, 2007).

Research focusing on the recovery of those diagnosed with mental health difficulties, such as psychosis, discovered that those who were able to develop secure relationships with others, were able to reflect on themselves and develop a stronger sense of self, which supported their recovery (Laithwaite & Gumley, 2007). Having a weak sense of self has been viewed by some as an undesirable characteristic to develop because it has been related to a lack of autonomy and an unstable presentation due to being easily influenced by the opinions of others (Setterlund & Niedenthal, 1993). However, mental health practitioners' debate whether problems arise from having a weak sense of self or a strong dysfunctional sense of self (Cogan et al, 2019; Romano et al, 2010; Davidson & Straus, 1992). For instance, an individual who has been in a mental health service long-term, may have a strong sense of self as being a patient, which they strongly connect with and gain comfort from. However, although this is part of their identity, it can be unhelpful as it leads to dependency on other's support and limits their motivation for growth. Whereas Kawamoto's (2020) research looking at survivors of trauma, found that people with a stronger sense of self, had greater confidence, higher self-esteem, and report greater access to social support. This brings in the question whether sense of self as a protective factor is about a need to strengthen someone's sense of self or restructure it. Flury and Ickes (2007) Sense of Self Scale (SOSS) measures the outcomes of having a problematic sense of self (i.e., 'I wish I was more consistent in my feelings'), rather than focusing on how strongly someone connects with their sense of self. This overcomes this issue of measuring an unhealthy or weaker sense of self and instead focuses on the problematic outcomes of having either an unhealthy or weak sense of self. People now have the means to interact with their environment on a global scale through the internet. Online news content allows for strong and diverse world views and opinions to be shared daily by news networks but also now the public. The previous Chapter demonstrated that on average, the information provided to viewers via ONC did cause examination to their core beliefs but not everyone was affected in this way.

The qualitative comments from the previous Chapter (Appendix H) suggested that some participants had a stronger sense of self through their focus on their roles or purposes in life, such as being a mother or someone in the military, when faced with negative ONC. The comments highlighted strong opinions from these individuals, which suggested more defensiveness of their prior beliefs rather than examination of them in response to the ONC. For example:

'I feel that the news channels shouldn't show things like this... I have a young daughter and would be devastated if she was to accidentally stumble across any videos like this which were unsettling'.

Social identity has also been shown to play a role in how people respond to different types of information. Tajfel (1972) defines social identity as 'the individual's knowledge that he/she belongs to certain social groups together with some emotional and value significance to their group membership' (p.292). De Hoog's (2013) study into social identity highlighted that people with a greater sense of self tend to show more motivation for being defensive in social contexts, as they are better able to identify threats to their social identity. Building on the findings of study 1 and on these notions, the current study considers the extent to which individuals believe they have a clear sense of themselves to test whether this factor can predict viewer's vulnerability to their core beliefs feeling threatened. The current study therefore predicts that participants who report a stronger sense of self, will also report less examination to their core beliefs when recalling negative ONC.

4.1.2 Life satisfaction as a protective factor

Life satisfaction is defined as a universal evaluation of an individual's quality of life which is scored in relation to someone's judgement of satisfaction with how their life is at the present time (Diener et al, 1985). In research it is often measured using the Satisfaction with life scale (Diener et al, 1985), which is scored in relation to someone's judgement of satisfaction with how their life is at the present time. Research has highlighted that low life satisfaction is usually related to lower self-efficacy and coping resources for regulating negative emotions in all age groups (Hamarat et al, 2001; Lightsey et al, 2013). Study 1 highlighted that negative ONC causes immediate changes to negative emotions which requires regulation.

A common response to direct and vicarious trauma is examining beliefs about the world and others, which increases anxiety. This is a symptom of Post-Traumatic Stress Disorder (PTSD). Studies looking at resilience after traumatic events have highlighted that people reporting a greater life satisfaction pre-event, have less PTSD symptoms post event (Veronese et al, 2019).

Research into the use of social media has demonstrated that people who report a dissatisfaction with life, are more likely to engage with online content problematically (Deutrom, Katos & Ali, 2021; Foroughi et al, 2019). Problematic internet usage is understood as obsessing over content and finding it challenging not to actively engage with it (Deutrom, Katos & Ali, 2021). This is because people who are less satisfied with aspects of their life, are more likely to engage in social media to meet the unmet needs in their life, such as a sense of belonging or relatedness to others (Foroughi et al, 2019). Therefore, people with low life satisfaction are more likely to seek out and watch more ONC. A significant amount of research has investigated low life satisfaction as an outcome of consuming social media content (Zhan et al, 2016; Smeets, 2017; Dutot, 2020) but less research has explored whether low life satisfaction may be a predictive

factor for vulnerability to negative outcomes when consuming negative ONC, such as the news. This is important to know in psychology, as this could mean strengthening this area could support with resilience in response to the viewing of ONC.

The current study predicts that people who report a lower life satisfaction, will be more psychologically vulnerable to negative ONC (H₂). Therefore, participants who report low life satisfaction, will report a greater examination of their core beliefs when recalling ONC of content.

4.1.3 Less engagement in social comparison behaviours as a protective factor

When people interact with ONC, they are being provided with potentially new information about the world and others, sometimes unintentionally. In this sense they are open to the process of social comparison. Festinger's (1954) social comparison theory outlines that it is human nature for people to compare themselves to others. This is done by evaluating our own beliefs, attitudes and traits and comparing these against information we gather about others from our environment. This behaviour can be driven by the need to improve the self, to gain an accurate evaluation of the self or to make us feel better about ourselves if our self-esteem is lacking (Knobloch-Westerwick & Hastall, 2010). Festinger's (1954) original theory outlined that social comparison behaviours were used to gain an accurate evaluation of self and to achieve this, people will compare themselves to a group of people they view to be at a similar position as themselves.

Social comparison behaviours have been researched significantly in relation to social networking usage and user's wellbeing (Verduyn et al, 2020; Sherlock & Wagstaff, 2019; Jang, Park & Song, 2016). Findings from these studies highlight how engaging in social comparisons online, reduces the user's wellbeing through an increase in depressive symptoms (Burnell et

al, 2019). People who demonstrate a weaker sense of self, have been found to be more likely to compare their beliefs, attitudes and traits to others, due to a lack of confidence in their own judgment (Taylor, Netter & Wayment, 1995). When there is uncertainty present, social comparison behaviours are more likely (Gibbons & Buunk, 1999) and so global news content is likely to trigger this type of behaviour. However social comparison behaviours do not appear to have been explored in relation to ONC. Recent research has recognised the act of consuming endless pieces of negative ONC as ‘doom scrolling’ (Jennings, 2020; Watercutter 2020). This endless scrolling has been related to a need to gain a sense of control when there is uncertainty, attempting to find positives in negatively saturated ONC and seeking to up-regulate emotions in those experiencing low mood (Arnand et al, 2020). This behaviour has been found to negatively impact people’s wellbeing by increasing emotions such as anxiety (Ytre-Arne, & Moe, 2021). The results of the previous Chapter found that participants reported examination to their core beliefs in the negative ONC condition, which was related to a reduction in relaxation, suggesting a sense of threat. Researchers have outlined a need to understand the underlying motivation to engage in doom scrolling (Arnand et al, 2020). Making social comparisons increases the relevance and personalisation of news content (Knobloch-Westerwick & Hastall, 2006), which can increase viewer’s interest, but has also been found to increase the negative emotional impact of consuming negative ONC (de Hoog and Verboon, 2020). Those who are more likely to make social comparisons, may be more likely to feel judged or threatened by the information, whereas those who view the content in a detached way without making comparisons, maybe less likely to feel this way.

The current study will focus on participants’ engagement in social comparisons as a general behaviour, rather than focusing on the direction of comparisons made by using the Scale for Social Comparison (Gibbons & Buunk, 1999). This is because the study is interested in whether

those who are less likely to engage in social comparison behaviours, are more likely to detach themselves from the content they recall and therefore report less examination to their core beliefs. The current study predicts that those who are more likely to engage in social comparison behaviours, will be more likely to experience examination to their core beliefs when recalling negative ONC (H₆).

Qualitative comments from participants in the previous Chapter (Appendix H) suggested that some participants tended to avoid ONC where possible. Others alluded to the idea that they were subjected to ONC, and it was not something that could be easily avoided. Whether negative ONC is purposively sought or avoided may provide further explanation as to why some people are cognitively influenced by negative ONC. This is because core beliefs are rigid and take consistent challenge to be changed (Beck, 2011). For example, cognitive psychologists investigating the impact of exposure to violent or graphic content have identified that each time a person is exposed to a violent scene, associations are made (Anderson et al, 2003). If these associations are consistently made, then the associations made become more accessible and more influential to someone's related core beliefs. If people watch content consistently about how violent a particular group of people are for instance, they are more likely to begin to examine their beliefs about this group of people than someone who viewed a single video. However, it is important to note that there is research to suggest that consuming negative news items online is not necessarily linked to long-term desensitisation (Holman, Garfin, Lubens, and Silver, 2020; Feinstein, Audet and Waknine's, 2014).

It is expected that participants with a low life satisfaction, weak sense of self and a tendency to engage in social comparison behaviours will watch more ONC. These participants are predicted to report a higher frequency of negative ONC viewed in their daily lives than those who report a high satisfaction with life, strong sense of self and less of a tendency to make social

comparisons. The literature exploring people's motivation to seek out news content, highlights that consuming a greater amount of negative news content can distort people's beliefs, particularly their perception of risk (c.f. Chpt 2, section 2.4). It is therefore expected that a higher frequency of negative ONC viewed, would mediate the effect that the 3 predictive factors have on the outcome factor (examination to core beliefs) when negative ONC is recalled. A high frequency of negative ONC would not strengthen or weaken (moderate) the relationship between the three variables and examination to core beliefs when negative ONC is recalled. It would explain (mediate) why this effect is occurring. This is because the expected mediating variable, frequency that negative ONC is viewed, relates to 'doom scrolling' behaviours where the amount of negative ONC accessed explains why people feel anxious and unsure in their beliefs regarding global topics, such as COVID-19 (Ytre-Arne, & Moe, 2021).

The findings in the previous Chapter reported that there was no significant difference in reported examination to core beliefs for negative and positive ONC recall groups. In the current Chapter, it is expected that for those who do experience challenge to their core beliefs when recalling negative ONC, the framing of the ONC recalled (positive or negative ONC), will have the potential to be an influential factor in reducing their feelings of relaxation. This is because the mediation model is based on the findings from the previous Chapter where an examination to core beliefs when watching negative news content was significantly related to a reduction in relaxation. This Chapter is exploring possible variables that could explain why people may feel vulnerable and threatened when faced with negative news content and the consequential state of CD that is experienced in this condition.

Given that some participants in the previous Chapter were unable to regulate their emotions, particularly in the negative ONC condition, it was not appropriate to provide participants with ONC again. Alternatively, participants were asked to *recall* ONC they may have already

viewed in their daily lives in this Chapter. This could be considered a strength because participants will be reflecting on previous experiences and news content that has been particularly influential for them. In this study the frequency of negative ONC viewed in participant's daily lives is explored as a mediating variable to provide further insight into the process of participants examining their core beliefs after recalling negative ONC. Following on from the previous Chapter, this study aims to better understand the underlying processes taking place when ONC is recalled. In particular, the study hopes to gain a greater understanding into why some people can view negative ONC and not be affected cognitively by this.

The hypotheses are thus as follows:

H₁: the relationship between life satisfaction and the reported examination to core beliefs, when negative ONC is recalled, will be mediated by the frequency of negative online news viewed.

H₂: the relationship between sense of self and the reported examination to core beliefs, when negative ONC is recalled, will be mediated by the frequency of negative online news viewed.

H₃: the relationship between social comparison and the reported examination to core beliefs, when negative ONC is recalled, will be mediated by the frequency of negative online news viewed.

4.2 Methodology

4.2.1 Participants

Participants were recruited through social media platforms (Facebook and Twitter). To detect a regression effect size of 0.15 with 80% power ($\alpha = .05$, one-tailed), G*Power suggested at least 103 participants would be needed. The final sample consisted of 106 participants (34% male, 64% female, 1% non-binary and 1% non-reporting) participants with an age range of 53 years (19 to 72).

4.2.2 Design

A mediation regression model was proposed in which sense of self, social comparison behaviours and life satisfaction are the predictor variables, whilst examination to core beliefs is the dependent variable. The frequency of ONC viewed in the last week is the mediator, when negative ONC is recalled. Positive ONC recalled will be used as a control group.

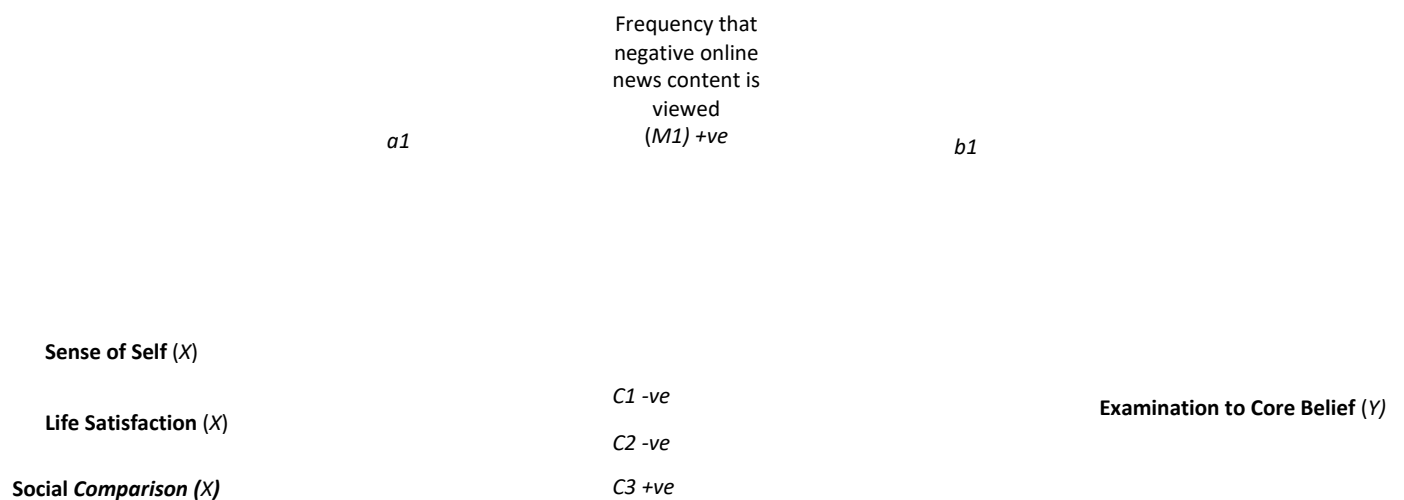
4.2.2.1 Mediation Analysis. The mediation model was conducted twice, once when recalling positive ONC and once when recalling negative ONC using a between groups design. The first predictor variable was the participants' reported sense of self, measured using Sense of Self Scale (SOSC). The second predictor variable was the participants' reported level of current life satisfaction as measured by the Satisfaction with Life Scale (SLS). The third predictor variable was the participants' reported likelihood to make social comparisons as measured by the Scale for Social Comparison (SSC). The dependent variable was participants' reported examination to their core beliefs as measured by the Core Belief Inventory (CBI). The mediating variable consists of participants' reported frequencies of ONC viewed in their daily life measured by the Content-based Media Exposure 2 scale (C-ME2).

Hayes (2013) describes mediation analysis as a study of how a predictive variable X influences the outcome variable known as Y . The mediating variable (M) provides insight into *how* these two variables (X and Y) affect and intervene with each other. Figure 4 shows a simple mediation model. Moderation analysis differs as this statistical method is used when the researcher wants to understand under what condition a process is taking place and therefore looks at *when* rather than *how* (Hayes, 2013). Therefore, mediation analyses were considered more appropriate for the current study because it is concerned with the impact of recall of positive and negative ONC on a shift in core beliefs, rather than on whether that relationship is dependent upon recall being present or not (see Appendix Q).

4.2.2.2 Mediation Model.

Figure 4

Mediation model of effect of frequency of negative ONC viewed on the association between sense of self, life satisfaction and social comparisons with examination to core beliefs when negative ONC is recalled.



4.2.3 Materials

4.2.3.1 Sense of Self. The Sense of Self Scale (SOSS; Appendix I) was used to measure whether participants perceive themselves to have a strong or weak sense of self. This scale consists of 12 statements (e.g., I wish I were more consistent in my feelings) which a participant considers in relation to their own views of themselves (1 = very uncharacteristic of me; 4 = very characteristic of me). A high score suggests a person with a strong sense of self, whilst a lower score represents a weaker sense of self. This scale has an average internal consistency of .86 (Flury & Ickes, 2007).

4.2.3.2 Social Comparison. The Scale for Social Comparison (SSC) was used to measure the extent to which participant perceived they make social comparisons (Appendix J). The scale consists of 11 statements to measure participants sense of social comparison (1 = strongly disagree; 5 = strongly agree).

A mean score on this scale indicates level of self-perceived social comparison, with higher scores indicating higher levels of social comparison. The questionnaire provided an internal consistency of .83 (Gibbons & Buunk, 1999).

4.2.3.3 Life Satisfaction. The Satisfaction with Life Scale (SLS) was used to measure participant's reported overall life satisfaction (Appendix K). The scale consists of 5 statements to measure participant's agreement with each statement (1= strongly disagree; 7=strongly agree).

The mean score on this scale indicating higher levels of life satisfaction. The scale demonstrated an internal consistency of .88 (Kobau et al, 2010).

4.2.3.4 Examination to core beliefs. The Short Form Core Beliefs Inventory (CBI), from study 1 (c.f. Chpt 3, section 3.2.4.2), was used to measure the extent to which participant's felt the viewed ONC caused them to examine their core beliefs about the world, other people, themselves, and their future.

4.2.3.5 The Amount of Online News Content Viewed. The Content-based Media Exposure 2 (C-ME2; Den Hamer & Bushman, 2017) scale was used to measure the frequency that ONC is viewed by participants (Appendix L) by having them answer a series of questions (e.g., In the last week, how often have you see on social media sites (Twitter, Facebook etc.) news which contains people who fight?). This measure enables the type of content participants reportedly view antisocial (negative) or prosocial (positive) to be measured separately. The consumption of positive ONC controlled to compare with the results of the mediation model exploring the frequency of which negative ONC is viewed. It is important that the score for news consumption frequency is not a generic score because research into news framing highlights how the two types of content (positive news and negative news) can influence different emotional and cognitive responses. Due to the findings in study one, positive ONC is being isolated from negative ONC to be analysed as a variable in its own right as it highlighted separate processes were involved when this type of ONC was viewed. It is also expected that participants who score higher for the SSC and SOSC and lower in the SLS, will be more likely to actively view negative ONC as part of the mediation model. This will also need to be compared against the consumption of positive ONC scores to examine whether this result is only significant for negative content and not the frequency of news viewed in general. The C-ME2 consists of 22 items, (9 prosocial items and 13 antisocial items). Participants were asked to rate the frequency of which they had viewed each of the types of content outlined in the last week (1 = never; 5 = very often), as a measure of how often they are viewing the two types of

content. Higher scores for prosocial content will reflect a greater consumption of positive ONC, whilst higher scores for ant-social content will reflect a greater consumption of negative ONC.

4.2.4 Procedure

Participants were provided with a link shared on social media to the questionnaire hosted on Qualtrics. After providing informed consent, recording their age and gender, each participant was allocated randomly to one of the two groups (positive news recall, negative news recall). They then completed the content-based media Exposure 2 scale to record frequency and type of ONC viewing before completing the sense of self scale, the satisfaction with life scale and the social comparison orientation scales. Participants in the positive ONC group were then asked to recall a piece of ONC that they had viewed within the last week which made them feel positive. Participants in the negative ONC group were asked to recall a piece of ONC that they had previously viewed which made them feel negative in the last week. Both groups were then provided with a small text box to note down 3 aspects of this piece of content that they felt were positive (if in the positive recall group) or negative (if in the negative recall group). Appendix M provides an overview of topics that were recalled by the 2 groups, including for example finding a vaccine for Covid-19 and the death of George Floyd. Finally, all participants completed the CBI prior to submitting their data, being thanked for their participation and debriefed.

4.2.5 Ethical Considerations

Ethical considerations were the same as the previous Chapter (c.f. Chpt 3, section 3.2.3). The consent form (Appendix N), participant information sheet (Appendix O) and debrief form (Appendix P) used in study 2 can be viewed in the appendices. A ‘spot the

difference' activity where participants were asked to find 10 differences to divert their attention away from what they had recalled was provided to all participants to make sure that participants left the study in a more positive mindset as they entered.

4.3 Results

Table 7

Descriptive Statistics for the negative ONC recall sample

ONC recall group (negative)	<i>n</i>	<i>M</i>	Range	<i>SD</i>
Sense of self	53	27.21	16.00 to 40.00	5.23
Life satisfaction	53	20.57	6.00 to 31.00	6.54
Social comparison	53	36.13	27.00 to 48.00	5.21
Frequency of negative ONC viewed	53	33.45	12.00 to 60.00	8.76
Frequency of positive ONC viewed	53	32.00	10.00 to 49.00	7.31
Examination to core beliefs	53	26.25	11.00 to 47.00	9.50

Table 8

Descriptive Statistics for the positive ONC recall sample

ONC recall group (positive)	<i>n</i>	<i>M</i>	Range	<i>SD</i>
Sense of self	53	27.36	20.00 to 39.00	4.63
Life satisfaction	53	20.19	6.00 to 34.00	6.62
Social comparison	53	36.49	20.00 to 46.00	4.14
Frequency of negative ONC viewed	53	32.06	17.00 to 54.00	7.54
Frequency of positive ONC viewed	53	30.87	17.00 to 42.00	5.83
Examination to core beliefs	53	25.09	9.00 to 44.00	8.25

Hayes (2013) PROCESS software for SPSS was used to perform mediation analyses for the three predictor variables (sense of self, life satisfaction and social comparison behaviours) on the outcome variable (examination to core beliefs) in the presence of a mediation variable (frequency of negative ONC viewed). Hayes' approach was used which contests that a significant association is not required from the total effect to examine the underlying effects between X and Y. Bollen (1989) put forward that a lack of correlation cannot disprove causality and vice versa. Researchers have since agreed with this statement contending that a lack of correlation found, might be a result of unknown variables and therefore causation can still be found. Mediation analysis is seeking an explanation of causation and not correlation (Trafimow, 2015). Therefore, the approach used to interpret the findings from the mediation analyses has been developed from Baron and Kenny's (1986) approach. However, independent t-test analyses were first conducted to ensure that utilising a between groups design did not become a confounding factor. This was followed by the multiple regression to analyse whether the three variables (sense of self, life satisfaction and engagement in social comparisons) could predict examination to core beliefs before the mediation analysis to test the mediating variable (frequency of negative ONC viewed in the last week).

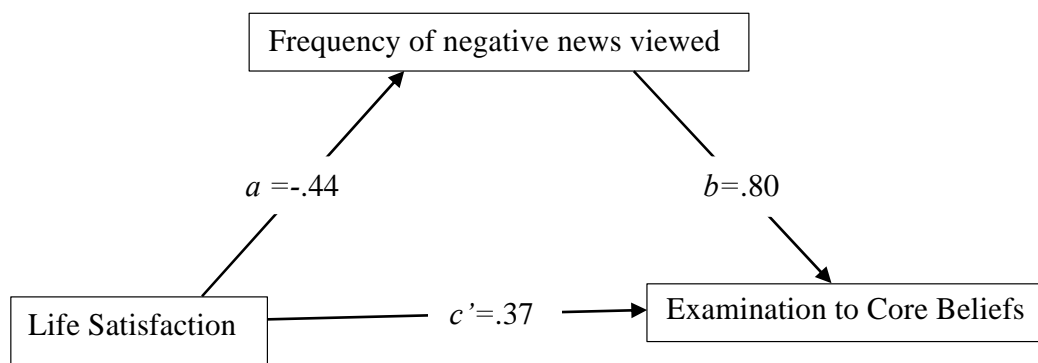
4.3.1 Mediation model for Life Satisfaction (negative recall group; H₁)

Model 4 with 10,000 bootstraps was used in PROCESS (see Hayes, 2013). The model for life satisfaction (Figure 5) accounts for a significant direct effect between life satisfaction and examination to core beliefs (path c' : $F(2, 50) = 17.21, P < .001, R^2 = .41, b = .37, t(50) = 2.22, P < .05$). There was a significant indirect effect between life satisfaction and examination to core beliefs when the frequency of negative news viewed acts as a mediator between life satisfaction and examination to core beliefs (path a : $F(1, 51) = 7.23, P = \leq .01, R^2 = .12, b = -.44, t(51) = -2.69, P < .01$ (see figure 5), path b : $F(2, 50) = 17.21, P < .001, R^2 = .41, b = .80, t$

(50) = 5.86, $p < .001$). However, there is not a significant association found when the total effect was analysed (path c : ($F(1,51) = .02$, $P = >.05$, $R^2 = .00$, $b = .03$, $t(51) = .13$, $P >.05$).

Figure 5

Mediation model testing the hypothesis that the frequency of negative news viewed mediates the association between life satisfaction and examination of core belief in the negative recall group.



There is no significant indirect effect between life satisfaction and examination to core beliefs when the frequency of *positive* news viewed is included as a mediator between the two variables (path a : $F(1,51) = .00$, $P = >.05$, $R^2 = .00$, $b = .00$, $t(51) = .02$, $P >.05$; path b : $F(2, 50) = 1.53$, $P >.05$, $R^2 = .06$, $b = .35$, $t(50) = 1.74$, $P >.05$). There is also no significant association found when the total effect is analysed (path c : $F(1,51) = .02$, $P = >.05$, $R^2 = .00$, $b = .03$, $t(51) = .13$, $P >.05$).

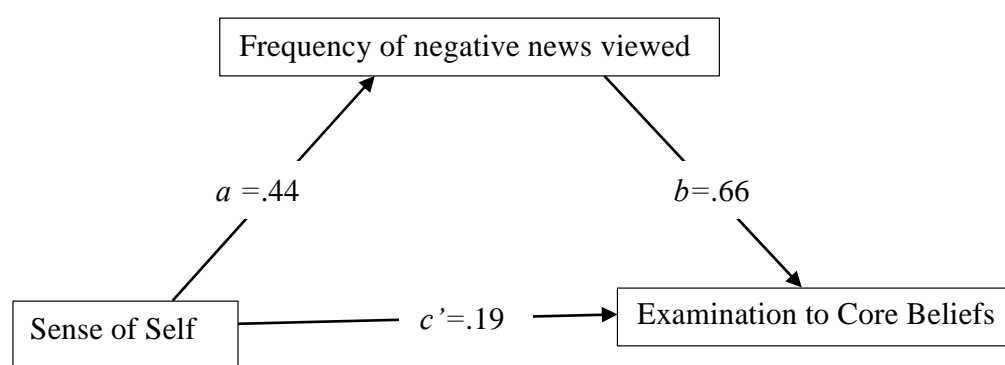
We can therefore accept H_1 in relation to the frequency of negative ONC, mediating the effect that life satisfaction has on participant's examination of their core beliefs.

4.3.5 Mediation model for sense of self (negative recall group; H₂)

Model 4 with 10,000 bootstraps was used in PROCESS (see Hayes, 2013). The model for sense of self did not reveal a significant direct effect between sense of self and examination of core beliefs (path c' : $F(2, 50) = 14.07$, $P < .001$, $R^2 = .36$, $b = .19$, $t(50) = .91$, $P > .05$) (figure 6). There was, however, a significant indirect effect between sense of self and examination to core beliefs when the frequency of negative news viewed acts as a mediator between the two variables (path a : $F(1, 51) = 4.87$, $P < .05$, $R^2 = .09$, $b = .44$, $t(51) = 2.21$, $P < .05$; path b : $F(2, 50) = 14.07$, $P < .001$, $R^2 = .36$, $b = .66$, $t(50) = 4.72$, $P < .001$). There is also a significant association found when the total effect is analysed (path c : $F(1, 51) = 4.09$, $P \leq .05$, $R^2 = .07$, $b = .48$, $t(51) = 2.02$, $P \leq .05$)

Figure 6

Mediation model testing the hypothesis that the frequency of negative news viewed mediates the association between sense of self and examination to core beliefs in the negative recall group.



There is no significant indirect effect found between sense of self and examination to core beliefs when the frequency of *positive* news viewed is included as a mediator between the two variables (path a : $F(1, 51) = .01$, $P > .05$, $R^2 = .00$, $b = .01$, $t(51) = .08$, $P > .05$; path b : $F(2, 50) = 3.74$, $P < .05$, $R^2 = .13$, $b = .35$, $t(50) = 1.79$, $P > .05$).

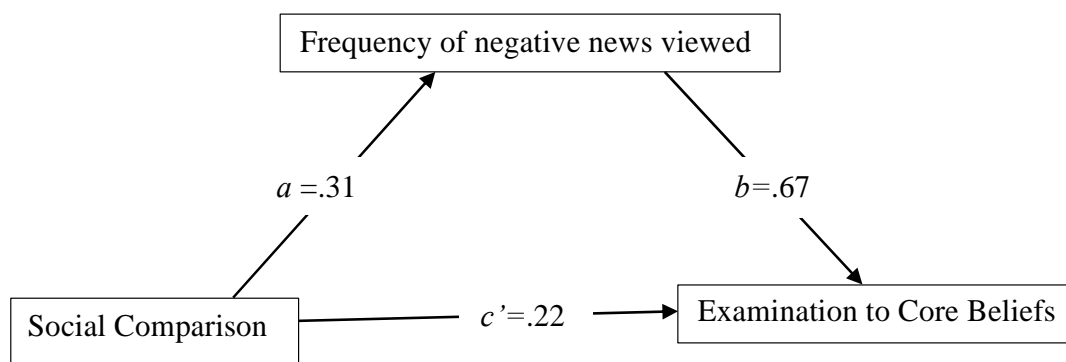
We can therefore accept H₂ in relation to the frequency of negative ONC, mediating the effect that sense of self has on participant's examination to their core beliefs.

4.3.6 Mediation model for social comparison (negative recall group; H₃)

Model 4 with 10,000 bootstraps was used in PROCESS (see Hayes, 2013). The model for social comparison did not reveal a significant direct effect between social comparison and examination to core beliefs (path c' : $F(2, 50) = 14.25$, $P < .001$, $R^2 = .36$, $b = .22$, $t(50) = 1.03$, $P > .05$) (Figure 8). There was also no significant indirect effect between social comparison and examination to core beliefs when the frequency of negative news viewed acts as a mediator between the two variables (path a : $F(1, 51) = 2.15$, $P = > .05$, $R^2 = .04$, $b = .31$, $t(51) = 1.47$, $P > .05$; path b : $F(2, 50) = 14.25$, $P < .001$, $R^2 = .36$, $b = .67$, $t(50) = 4.92$, $P < .001$). There was also not a significant association found when the total effect is analysed (path c : $F(1, 51) = 2.92$, $P = > .05$, $R^2 = .05$, $b = .42$, $t(51) = 1.71$, $P > .05$).

Figure 8

Mediation model testing the hypothesis that the frequency of negative news viewed mediates the association between social comparison and examination of core belief in the negative recall group.



There was no significant indirect effect between social comparison and examination to core beliefs when the frequency of *positive* news viewed was included as a mediator between the two variables (path *a*: $F(1,51) = .43, P > .05, R^2 = .01, b = .11, t(51) = .66, P > .05$; path *b*: $F(2, 50) = 2.84, P > .05, R^2 = .10, b = .32, t(50) = 1.64, P > .05$).

The frequency of negative ONC viewed, did not mediate the relationship between social comparison behaviours and examination to core beliefs. We can therefore reject H₃.

4.3.7 The impact of the recall groups (positive news, negative news) on examination to core beliefs

An independent-samples t-test was conducted to compare the examination to core beliefs scores for the positive and negative recall groups. There was no significant difference in scores for negative ONC recalled ($M = 26.25, SD = 9.50$) and positive ONC recalled ($M = 25.01, SD = 8.24; t(104) = -.71, p = .48$). The magnitude of the differences in the means (mean difference = -1.23, 95% CI: -4.65 to 2.19) was very small ($\eta^2 = -0.014$).

This result emphasises that examination to core beliefs can occur whether participants recall negative or positive ONC. This is important to note because it highlights how it is not cognitive dissonance that causes negative emotional responses to the negative news content shown but the underlying processes which are taking place related to this cognitive state.

4.3.9 Mediation model for life satisfaction (positive recall group)

Model 4 with 10,000 bootstraps was used in PROCESS (see Hayes, 2013). The model for life satisfaction when the frequency of positive news viewed was analysed as a mediating

variable, did not account for a significant direct effect between life satisfaction and examination to core beliefs (path c' : $F(2, 50) = .66, P > .05, R^2 = .03, b = .02, t(50) = .11, P > .05$). There was no significant indirect effect between life satisfaction and examination to core beliefs when the frequency of positive news viewed acts as a mediator between the two variables (path a : $F(1, 51) = .17, P > .05, R^2 = .00, b = -.05, t(51) = -.42, P > .05$; path b : $F(2, 50) = .66, P > .05, R^2 = .03, b = .80, t(50) = 5.86, p > .05$). There is not a significant association found when the total effect was analysed (path c : ($F(1, 51) = .00, P > .05, R^2 = .00, b = .01, t(51) = .05, P > .05$). There was no significant indirect effect between life satisfaction and examination to core beliefs when the frequency of *negative* news viewed was included as a mediator between the two variables (path a : $F(1, 51) = 1.41, P > .05, R^2 = .03, b = -.19, t(51) = -1.19, P > .05$; path b : $F(2, 50) = .46, P > .05, R^2 = .02, b = .15, t(50) = .96, P > .05$). There was also no significant association found when the total effect was analysed (path $c = F(1, 51) = .00, P > .05, R^2 = .00, b = .01, t(51) = .05, P > .05$).

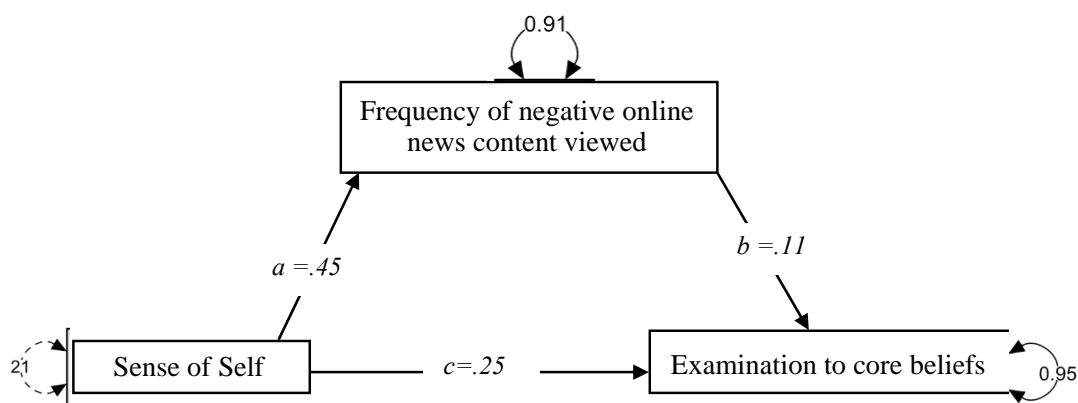
4.3.10 Mediation model for sense of self (positive recall group)

Model 4 with 10,000 bootstraps was used in PROCESS (see Hayes, 2013). The model for sense of self when the frequency of *positive* news viewed was analysed as a mediating variable, did not account for a significant direct effect between sense of self and examination to core beliefs (path c' : $F(2, 50) = 1.41, P > .03, R^2 = .05, b = .30, t(50) = 1.22, P > .05$). There was no significant indirect effect between sense of self and examination to core beliefs when the frequency of *positive* news viewed acts as a mediator between the two variables (path a : $F(1, 51) = 1.40, P > .05, R^2 = .03, b = -.19, t(51) = -1.18, P > .05$; path b : $F(2, 50) = .141, P > .05, R^2 = .05, b = .29, t(50) = .134, P > .05$). There was not a significant association found when the total effect was analysed (path c : ($F(1, 51) = 1.00, P > .05, R^2 = .02, b = .25, t(51)$

=1.00 $P > .05$). However, there was a significant indirect effect between sense of self and examination to core beliefs when the frequency of *negative* news viewed acts as a mediator between the two variables (path *a*: $F(1, 51) = 4.14$, $P \leq .05$, $R^2 = .08$, $b = .45$, $t(51) = 2.03$, $P \leq .05$; path *b*: $F(2, 50) = .74$, $P > .05$, $R^2 = .03$, $b = .11$, $t(50) = .70$, $P < .05$). Please see Figure 9. There was not a significant association found when the total effect was analysed (path *c*: $F(1, 51) = 1.00$, $P > .05$, $R^2 = .02$, $b = .25$, $t(51) = 1.00$, $P > .05$).

Figure 9

Mediation model for frequency of negative news viewed mediating the association between social comparison and examination to core beliefs in the positive recall group.



4.3.11 Mediation model for Social Comparison (positive recall group)

Model 4 with 10,000 bootstraps was used in PROCESS (see Hayes, 2013). The model for social comparison when the frequency of positive news viewed was analysed as a mediating variable, did not account for a significant direct effect between social comparison and examination to core beliefs (path *c'*: $F(2, 50) = .83$, $P > .05$, $R^2 = .03$, $b = .16$, $t(50) = .59$, $P > .05$). There was no significant indirect effect between social comparison and examination to core beliefs when the frequency of *positive* news viewed acted as a mediator between the two variables (path *a*: $F(1, 51) = .39$, $P > .05$, $R^2 = .01$, $b = .11$, $t(51) = .62$, $P > .05$; path *b*: $F(2,$

50) = .83, $P > .05$, $R^2 = .01$, $b = .24$, $t(50) = .109$, $P > .05$). There was also no significant indirect effect between social comparison and examination to core beliefs when the frequency of negative news viewed was included as a mediator between the two variables (path *a*: $F(1,51) = 10.8$, $P < .01$, $R^2 = .18$, $b = .76$, $t(51) = 3.30$, $P < .01$; path *b*: $F(2, 50) = .49$, $P > .05$, $R^2 = .02$, $b = .12$, $t(50) = .72$, $P > .05$). There was not a significant association found when the total effect was analysed (path *c*: $F(1,51) = .46$, $P > .05$, $R^2 = .01$, $b = .19$, $t(51) = .68$, $P > .05$).

There was one significant positive indirect effect found between sense of self and examination to core beliefs when the frequency of negative news viewed was explored as a mediator for the positive recall group. This result emphasises that the variable, sense of self, can provide some causation for examination to core beliefs when positive ONC is recalled but only when the frequency of negative ONC is investigated as a mediator variable. This is important to note as it suggests that the variable, sense of self, is related to a higher frequency of negative ONC being viewed and influences the cognitive response of participants who recall both positive ONC and negative ONC.

4.4 Conclusion

The current study has provided further strength to the conclusion that examination to core beliefs (CD) can take place when watching or recalling negative and positive ONC. The processes causing CD to occur is dependent on the type of ONC recalled. Having a low life satisfaction and a stronger sense of self have been found to be two factors that can provide explanation for CD to occur, when negative ONC is recalled. These findings are only evident when the frequency of negative ONC is considered. It was also found that the more online new content viewed in people's daily lives, specifically negative news, the greater the impact was on people's examination to core beliefs. Chapter five discusses these findings further.

Chapter Five

Discussion

5.1 Aim of the thesis

The aim of Chapter three was to examine whether a significant difference could be found in how positive and negative ONC impacts viewer's emotional and cognitive state. Importance was placed on the interaction between viewer's discrete emotions and core beliefs and whether ONC causes viewers to challenge their core beliefs, focusing on CD theory (Festinger, 1957).

The aim of Chapter four was to examine factors which could increase the resilience of consumers of ONC, against the cognitive and emotional impact of ONC found in Chapter three. The thesis intended to determine whether there were protective factors which prevented viewers from being cognitively challenged by the content. Life satisfaction, sense of self and social comparison behaviours were variables focused upon to investigate this aim. There was also the further question of whether people who viewed more ONC were less resilient to the cognitive impact of the content. This question was based on desensitisation theory which suggests that the more someone is exposed to graphic, violent, or distressing content, the less they respond to this emotionally and therefore cognitively. However, previous research into news content suggested that people who were more negatively affected by negative news coverage, were those who viewed a greater amount of this type of content. The thesis therefore aimed to investigate whether those who viewed more negative ONC would report greater CD, rather than be desensitised to the content.

5.2 Study One Findings

It was predicted in H₁, that participants would respond to the negative ONC with increased anger, disgust, fear, anxiety, and sadness, and decreased feelings of happiness and relaxation. Desire was predicted to be increased because of an increased motivation to resolve the CD and emotionally unregulated state. This hypothesis was not fully supported due to the reduction in desire from T1 to T2. All discrete emotions were found to significantly change because of watching negative ONC. As predicted anger, anxiety, disgust, fear, and sadness increased significantly. These emotions are known as being negative in valence (Lecheler, Schuck & De Vreese, 2013), and past research identifies that watching negative news content will increase negative emotions (De Hoog & Verboon, 2020; Szabo & Hopkinson, 2007; Schwab & Winterhoff-Spurk, 2008). Disgust and anger increased the most in response to watching the negative ONC. Anger and disgust are emotions which increase risk taking behaviour, whereas fear and anxiety have been related to risk avoidance (Lecheler, Schuck and De Vreese, 2013). Lecheler, Schuck and De Vreese (2013) found that anger mediated opinion change in participants through either defensiveness against a belief communicated or anger regarding activating an existing belief in the participant. The findings when looking at emotions discretely, demonstrate that participant's beliefs were triggered as anger and disgust increased at a greater rate. However, it cannot be concluded whether this was through a need to defend a belief, or the footage shown reinforcing a previously held belief that is then activated. Fear limits someone's ability to process information (Nabi, 1999). Fear did not increase as significantly, suggesting that participants were able to process the information clearly. Sadness also significantly increased in response to the negative news content viewed. Izzard (1993) contends that sadness is an emotion which supports people to problem solve by slowing down cognitive processes and focusing on the internal state to seek a way to comfort.

It cannot be concluded whether participants felt this in response to the content or in response to the anger and disgust they experienced from the content.

As predicted, happiness and relaxation decreased significantly when negative ONC was viewed. A significant reduction in happiness can cause a reduction in someone's ability to be flexible in their way of thinking about any information provided to them (Izard, 1993). This can lead to unresolved CD as people with reduced happiness are thinking more rigidly and so are not open to attitude change and can become more defensive. Relaxation being felt means that someone feels safe as they are not needing to be alert to potential threats as it is a low approach emotion (Harmon-Jones, Bastian, & Harmon-Jones, 2016). Participants in the negative ONC condition experienced a significant reduction in relaxation suggesting they were feeling the need to stay alert to potential threats. This is further highlighted with the significant increase in anxiety reported for participants in the negative ONC condition.

Desire, in participants in the negative news condition, decreased after watching the negative ONC, rather than increased. This significant decrease in desire scores from T1 to T2 was also consistent with participants in the positive news condition. This could suggest that this score was a measure of participating in the study itself, rather than viewing ONC. Desire is a positive emotion which, when reduced, suggests satisfaction, and when increased, suggests drive (Harmon-Jones, Bastian, Harmon-Jones, 2016). When participants were asked for their self-reported score for desire at T1, they had not yet engaged with the content of the study. They will not have known the exact content they would be shown (positive or negative ONC). The participants' desire score may have been higher at T1 to reflect their curiosity in the study. At T2, they will have viewed the content and their curiosity will have been lower as they are satisfied, they know what the study will entail. Taddicken and Wolff's (2019) study into

emotions and coping strategies for CD, identified that satisfaction (reduced desire) was felt because of resolved CD due to the regulation of their negative aroused state. However, for this to be the underlying cause of the reduction in desire in this study's results, it would be expected that in the positive ONC condition, the reduction in desire would be greater than the negative condition. This is because in the positive condition there was less emotional change, suggesting that participants were able to regulate their emotions more successfully in relation to the CD experienced. This result was not found.

H₂ expected that participants who viewed positive ONC, would respond with a significant increase in happiness and relaxation. Their feelings of desire were expected to reduce due to feeling more satisfied with what is viewed because of the positive feelings the content provokes. Anger, disgust, fear, anxiety, and sadness were not expected to be significantly changed by positive ONC.

Participants in the positive condition did not experience a significant increase in happiness and relaxation overall. Instead, participants experienced a non-significant reduction in happiness and a non-significant increase in relaxation from T1 to T2. Although the reduction in happiness was not significant and less than the negative content condition, this was an unexpected change in emotion, as was the insignificant increase in relaxation. McIntyre and Gibson (2016) conducted a study focusing on positive news stories and the impact these have on readers emotions. They found that positively framed stories did increase reader's positive emotions overall. The lower results for positive emotional change in Chapter three, could reflect the positive ONC not being relatable enough to trigger significant emotional change (De Hoog & Verboon, 2020). It could also be that participants started the study with particularly negative beliefs about the topics shown. This hypothesis is supported by the CBI scores as participants

felt their beliefs were challenged by the positive content. Core beliefs take consistent examination over a long period to change and so watching the positive content was only expected to cause participants to examine and reflect on their core beliefs. Any CD may have triggered some defensiveness to the conflicting content shown for those with negative core beliefs. Viewers with negative core beliefs may have experienced a reduction in happiness and relaxation because of this. Furthermore, Herman and Prin's (2020) study identified that positively framed ONC caused a significant increase in positive emotions which influenced consumers to 'like' the news post. The emotional measure for this study, the DEQ, may not have provided enough variety in terms of positive emotions as more motivational emotions such as pride or inspired are not included in the DEQ.

H_{4a} and H_{4b} predicted that those who viewed the negative ONC would find it challenging to regulate their emotions, compared to those who viewed the positive ONC. This was expected because of the unresolved CD taking place due to the examination to core beliefs being undesirable. If this occurred, the change in positive and negative emotions would be significantly different to the positive ONC group. The results highlighted that those who viewed the negative ONC experienced significantly greater negative and positive emotional change, compared to the positive ONC condition.

The results from the ANOVA analysis highlights how viewing negative ONC can decrease the ability of viewers to effectively regulate their emotional response. There was a significant interaction between negative ONC and emotional change. This implies that negative ONC triggers emotion dysregulation in viewers, meaning that negative ONC can cause a sudden, significant change in emotions. Previous research into desensitisation theory and news content has suggested that the public are being desensitised to violent and graphic content due to the

increasing prevalence of news content (Strasburger & Wilson, 2003; Scharrer, 2008). However, Chapter three's findings suggest that participants were not desensitised to the content. Participants, within the negative ONC condition, did respond with significantly greater negative emotions (anger, disgust, fear, anxiety, and sadness) towards the content, than the positive ONC condition. Positive emotions (happiness, desire, and relaxation) were found to be significantly lower after watching the negative content and this was also found to be significantly different to the positive ONC condition. These results were as expected and are replicable from De Hoog and Verboon's (2020) study and corresponds with further studies such as Balzarotti and Ciceri's (2014), who found that fear increased when observing negatively framed news whilst positive affect decreased.

In the positive ONC condition (H_{4b}), participants overall negative emotions were not found to change significantly after watching this content. This was in line with the predicted null effect, which has been found in previous studies which explore the emotional impact of positively framed ONC (Kleemans, Schlindwein & Dohmen, 2017; Giri & Maurya, 2021). The findings from the ANOVA, and the t-test, analysing whether CD takes place in both the positive and negative ONC conditions, suggests that cognitive re-appraisal has taken place in the positive ONC condition. Beauchaine and Crowell (2020) outlines how cognitive reappraisal, actively changing an evaluation or interpretation of an external stimuli, can influence a change in both positive and negative emotions in response to a stimulus, to support with emotion regulation. In the positive ONC condition, emotion regulation may have taken place after CD was felt because cognitive reappraisal took place. Cognitive reappraisal has been limited in situations where a negative stimulus triggers a significant increase in negative emotions and the time for reappraisal is time-limited (Silvers et al, 2015). It is possible that participants in the negative

news condition found it challenging to cognitively reappraise the information provided to them and therefore found it challenging to regulate their emotions.

H₅ predicted that there would be a significant positive relationship between participant's negative emotions (anger, sadness, disgust, anxiety, fear) and the extent to which they felt their core beliefs had been examined. Previous research into CD has identified a significant relationship between increased negative affect and CD (Harmon-Jones, 2000; van Veen et al, 2009) because CD is an uncomfortable state.

Examination to core beliefs was predicted to take place in the positive ONC condition as well as the negative ONC condition. This was expected because examination to core beliefs is not determined by the content the participants watch but by the beliefs they enter the study with, which could be positive or negative. The examination to core beliefs in the positive ONC condition was expected to positively relate to negative emotions too. However, the conflicting information provided to participants would be desirable as positive, and therefore there would be more acceptance of the new information, resolving the dissonance. The negative emotions triggered by the CD would be expected to be resolved quickly in the positive ONC condition, and therefore would not be reported by participants.

The regression, used to explore H₅, highlighted that discrete emotions were significantly related to participant's examination to their core beliefs. Unlike prior research, which related an increase in negative emotion to CD, a reduction in positive emotions was related significantly to evidence of CD taking place. The reduction in happiness and desire explained some variation in the CBI Scores in the positive ONC condition. The reduction in relaxation explained some of the variation in CBI scores in the negative ONC condition. It is not clear from the results

whether the emotional change causes examination to core beliefs or whether the examination to core beliefs causes the related emotional change, as a regression analysis cannot be interpreted as establishing a cause-and-effect relationship. However, the type of content viewed can determine what discrete emotions can cause or be an outcome of the viewer's cognitive dissonant state. The reduction in desire (also known as satisfaction) is only related to examination to core beliefs in the positive condition. The current findings suggest that satisfaction (reduced desire) only relates to examination to core beliefs when the conflicting information provided through ONC is positively framed. This could be a result of desirable CD whereby the information provided to the participant, although opposing to their beliefs, is accepted (Cooper, 2007). The significant reduction in anxiety and fear suggests that participants did not experience an urge to avoid the content or experience the content as threatening. This emotional change not being present in the negative ONC condition, the decrease in relaxation being related to CD and emotion dysregulation taking place overall with participants in this group, would suggest that the negative ONC made some participants feel their positive beliefs about the world were threatened and this impacted on their sense of safety (Taddicken & Wolff, 2020).

The reduction in happiness in the positive ONC condition could be resulting from guilt or shame in having negative beliefs in the first place. This was found from previous studies looking at CD (Beslavs, 2013). The DEQ did not provide a measure of these emotions and so participants may have identified these emotions as reductions in happiness when asked to report their emotions at T2. However, the regression models have demonstrated a benefit from exploring emotional changes in terms of discrete emotions rather than solely by valence. Looking only at these results in terms of valence would have meant that the specific emotions related to CD in each condition would have been missed as viewed only as a reduction in

positive affect overall. The findings imply that different underlying processes are taking place when CD occurred in the negative news content condition and the positive news content condition.

5.2.1 Voluntary participant comments post study

Following the study, several participants commented on their participation (Appendix H).

Participants varied in the extent to which they felt they viewed online news content in their daily life. The emotional change participants recognised when watching negative ONC made some want to avoid the content. In line with McIntyre and Gibson's (2016) study, some participants in the positive condition did experience the content as positive. However, participants may be biased due to expectations of what the study was looking at. A participant in the positive ONC condition provided a suggestion that examination to their core beliefs resulted in an increase in happiness, implying how CD was resolved for them as it was a desirable change.

'It really made feel happy and renewed my view about humanity' (participant MS799).

When study one was being conducted, the news was concentrated with negatively framed ONC. Typical news content included protests taking place related to the death of George Floyd, the COVID-19 pandemic, and the 'Me Too' movement. Participants beliefs regarding the news in general may have been stronger (believing news is fabricated or inaccurate etc), which has been found to moderate the cognitive and emotional impact of the news due to viewers discounting negative views more easily (Staats & Gino, 2018). Indeed, this fits in the participant's comments, for example:

'I personally feel there have been a significant deluge of news which has caused uncertain feelings' (participant DC570).

5.3 Study Two Findings

Within Chapter four, a lower life satisfaction, weaker sense of self and greater likelihood to engage in social comparison behaviours were predicted to result in a greater examination to core beliefs when negative ONC was *recalled*. The background literature surrounding these factors suggests that these factors will be influential on participant's examination to core beliefs because they will increase the people's motivation to seek out ONC and therefore increase the frequency of which negative ONC would be viewed in people's daily lives. Therefore, a mediation analysis was utilised to explore whether including the frequency of negative ONC viewed in the last week as a mediating factor would provide significant results.

In the negative recall group, sense of self was not found to have a direct effect on examination to core beliefs. However, there was a significant positive indirect effect found when the frequency of negative ONC was included as a mediating variable. This could be explained by the independent variable (sense of self) having a stronger relationship with the mediating variable (frequency of negative ONC viewed) than with the outcome variable (examination to core beliefs). This has been outlined as a potential finding in mediation analysis by Rucker et al (2011). This means that sense of self could have no significant correlation to core beliefs but demonstrates causation, as those who reported a greater sense of self, viewed more negative ONC, which subsequently caused a greater reported examination to their core beliefs.

In Counselling Psychology, developing a stronger sense of self is viewed as a beneficial goal to develop positive mental health because it increases self-esteem and autonomy (Kawamoto, 2020). The results of this study conflicts with this understanding as it suggests that people with a greater sense of self are more likely to be cognitively influenced by the information provided by negative ONC, than those with a weaker sense of self. Research into sense of self highlighted that people who have a stronger sense of self, tend to be more rigid in their beliefs as they have greater confidence in their beliefs (Flury & Ickes, 2007) and therefore may be more likely to notice the emotional response to their core beliefs being examined, compared to someone who has more malleable beliefs. This could therefore influence people with a stronger sense of self to report a greater level of examination to their core beliefs. The analyses also suggests that those with a stronger sense of self are also more likely to view a greater amount of negative ONC. This was not predicted, as it was believed from the literature that those with a weaker sense of self would be more likely to seek out ONC to develop their self-image by observing social views and information (Cuperman, Robinson & Ickes, 2014). However, people with a stronger sense of self may feel more confident in their ability to detach themselves from what is viewed online and are therefore more likely to feel able to view ONC. Also, those who have a greater sense of self will be more reflective and self-aware (Dishon et al, 2017) and so may be able to more accurately identify how much ONC they view in their daily life. The thesis also does not examine the emotional process that takes place once core beliefs are examined. People with a greater sense of self may be able to manage their emotional response to them examining their core beliefs more effectively than those with a weaker sense of self. A strong sense of self is related to skills in reasoning, self-dependency, and rationalisation (Pufal-Struzick, 1999). Further research into the differences in how people manage examination to core beliefs would be useful in providing more information for these findings.

The results also found that examination to core beliefs could be further explained through participant's life satisfaction, when the frequency of negative ONC viewed was included as a mediating variable. Participants with a lower life satisfaction, tended to spend more time consuming negative ONC, which was subsequently related to a greater reported examination to participant's core beliefs, when negative ONC was recalled. Research explains this finding through people's need to seek out information which solidifies their current perceived circumstances (Foroughi et al, 2019). Those with a low life satisfaction will seek negative news content as it is perceived to be more likely to match their current belief system. In viewing this negative content, they are facilitating an environment around them that is reflective of their current thoughts and feelings regarding their satisfaction with their life. This could form a cycle of behaviour and cognitions which results in them further developing negative core beliefs overtime and maintaining their low life satisfaction. For example, an individual who is dissatisfied with life may be drawn to negative news content because it reinforces their beliefs about the world being negative. When they view this content, they may further examine their beliefs in a negative direction. This then influences them to view more negative content and this cycle continues.

When analysing the mediation model for life satisfaction and frequency of negative ONC for the negative recall group, a significant indirect and a non-significant total effect was found. This result relates back to the argument introduced by Bollen (1989) regarding correlation not being enough to prove causality. Hayes and Rockwood (2017) explain this further noting that a measure of the direct pathway (c) is not a substantial enough measure of X on Y . X can still influence Y even if the two variables are not linearly related. In this example for life satisfaction, X (life satisfaction) was found to positively affect Y (examination to core beliefs), but X negatively affects M (frequency that negative news is viewed). If the effects are similar in

magnitude, the value of pathway c will be closer to 0, making a direct effect non-significant even though it does have an effect. This has been evident in mediation research (Seehus, Clifton & Rellini's, 2015; Fillo et al, 2016) and has been called inconsistent mediation or described as evidence for a suppression effect. Hayes and Rockwood (2017) argue that a significant indirect effect provides sufficient information to conclude that mediation has taken place. From the significant direct effect found, we can assume that someone with a greater life satisfaction is more likely to examine their core beliefs when negative ONC is recalled. Someone with a lower life satisfaction is likely to watch more negative news online and this is likely to lead to greater examination to their core beliefs. These two instances conflict with each other as the same X variable (life satisfaction) on opposite sides of the spectrum (low or high life satisfaction) can lead to the same outcome (examination to core beliefs). The indirect effect may be similar in magnitude to the direct effect, and this therefore suppresses the direct effect when the mediation model is considered.

There was no significant effect found for social comparison behaviours in the mediation models for the negative recall group. Findings did not support that there was any causation for examination to core beliefs being a result of participants having a greater tendency to engage in social comparison behaviours. The results also showed no causation for watching negative ONC because of making more social comparisons. The non-significant findings could be suggesting that people interacting with ONC (both positive content and negative content) are not impacted by whether they tend to make social comparisons or not. People who tend to make social comparisons are not particularly seeking or avoidant of any ONC and are not particularly likely to feel challenged by the content shown in terms of their beliefs. This implies that a participant who is more focused on the overarching beliefs and opinions of others rather than their own, has the potential to feel just as challenged in their beliefs as a participant who is

much more focused on their own views and beliefs and does not consider others' views. The findings could suggest that the news on social media is not where people are going to learn about the views and beliefs of others on topics. This need may be better met within the comment sections of the news posted to social media rather than watching the content itself. People were asked to recall either positive or negative ONC that they had viewed recently. Appendix M highlights that although there were no prompts to this part of the study, participants recalled similar news topics. It could be that the news topics at the time triggered beliefs that were universal. Those who rely on society's views and beliefs to evaluate their own were possibly experiencing very similar beliefs to those who focus and are guided by what they believe because the topics in the news left little space for difference of opinion. Health scares with the COVID-19 pandemic formed a strong challenge to people's beliefs about their safety. If ONC was provided to participants about topics which were not mainstream, the findings may have been different.

Furthermore, the lack of significant results for social comparison behaviours could have also been the result of measures that lacked validity. The SSC used to measure social comparison behaviour could have been not specific enough to ONC to be able to accurately measure social comparison behaviours online. It is possible that further ways of measuring social comparison behaviours could have been utilised, which would have increased the validity of the findings. For example, Nesi and Prinstein's (2015) study, examining social comparison behaviours on social media, asked participants to rate the extent to which they compare themselves to others when on Facebook. However, to the best of my knowledge there are no specific measures that explore social comparison behaviours specific to interacting with any online content. Perhaps also looking at the underlying motivation to engage in social comparison behaviours such as low self-esteem, and how this interacts with ONC consumption and people's examination to

their core beliefs, would have been more beneficial too. The Rosenberg Self-Esteem Scale (Rosenberg, 1965) could have been used to provide potential insight into this area.

The frequency that negative ONC is viewed by participants in their daily lives was explored. Both mediation models (negative and positive ONC recalled) looked at whether the type of news content (positive or negative news) for frequency of ONC viewed (mediating variable) would affect the results. When the mediating variable was *negative* ONC viewed, there was a positive effect on examination to core beliefs (path *b*) in 2 mediation models (life satisfaction and sense of self), for the negative ONC recall group. The frequency of *positive* ONC viewed as a mediating factor was not significant in these models. This may be a result of participants having positive beliefs overall when they participated in the study. When negative information was provided to the participants, they would have felt challenged as the beliefs did not mirror their own. It was highlighted in Chapter three, that a greater emotional change was reported in those who viewed negative ONC, compared to positive ONC. This emotional change may be why consuming more negative ONC means that people are more challenged by the content, and this is not the case for positive ONC. This suggests that desensitisation is not occurring from an increased consumption of negative ONC.

When the mediating variable was positive ONC viewed, this was only significant for the total effect in the mediation model for sense of self and examination to core beliefs in the negative recall group. This suggests that having a greater sense of self increases the likelihood of consuming either positive or negative ONC and this can explain why people examine their core beliefs when recalling negative ONC. This suggests that people with a greater sense of self are more open to the world around them. For people with a low life satisfaction this was only found to lead to seeking a greater amount of negative ONC and not positive, suggesting these groups

of people are less open and seeking to meet a need. Seery, Holeman and Silver (2010) identified that people with low life satisfaction do not have the resources to be resilient and therefore it is plausible to suggest that people with lower life satisfaction will seek out news content that matches their beliefs to avoid CD and manage their distress in this way.

Consistent with the findings from Chapter three, there was no significant difference between positive and negative ONC when scores for examination to core beliefs were investigated. This suggests that even when *recalling* ONC, people's beliefs can be influenced by positively or negatively framed content. However, the previous Chapter suggests that related emotions to this change are what are different between the two groups. Equal variance of scores for the three IV's (life satisfaction, sense of self and social comparison behaviours) were found for the two recall groups.

When analysing the mediation models for the positive recall group, sense of self was found to have a positive significant indirect effect in this condition too, but only when the frequency of *negative* ONC was analysed as the mediating variable. The total effect was not found to be significant, suggesting that the magnitude of this indirect effect was less than in the negative recall group. People with a stronger sense of self, who watch more negative ONC report a greater examination to their core beliefs regardless of what recall condition they are in. There is no research that suggest why this may occur and is a future research area. Other predictor variables were not found to have any significant effect on participant's examination to core beliefs in the positive recall group.

Although this study did provide some insight into the underlying processes for the positive ONC recall group, the results demonstrate that different processes must be taking place to cause examination to core beliefs in the positive recall group.

5.4 Limitations

Although this thesis provided insight into the impact of ONC, limitation of the study and results need to be considered. Whilst CD was suggested to be an outcome of watching ONC and was related to specific emotional change in Chapter three, it is difficult to understand the context of this dissonance without further information. It would have been beneficial to gather a baseline reading of participants beliefs about the world and others before the content was viewed. This would have provided an idea to whether the content had the potential to conflict with their ideas about the world. It would have also provided more insight into why people with low life satisfaction may actively seek out negative ONC, as one reason for this could be that people in this group want to seek out content which matched their beliefs. The World Assumption Scale (WAS; Janoff-Bulman, 1989) could have been used as a base measure for belief change within both study one and two. This scale looks at people's beliefs about how compassionate the world is, the meaningfulness of events, and the worthiness of the self.

The thesis implemented a questionnaire design where data collection occurred at a single point in time and therefore the same results could not be guaranteed to occur if the study was conducted again. At the point that the studies were conducted, the participants may have been subjected to a sudden increase in negative news content due to global events taking place at the time.

The questionnaires utilised for data collection in this study were standardised and showed good internal consistency. However, the data was reliant on self-reported data, which can be sensitive to subjectivity bias. As this study took place within a pandemic where people needed to avoid being in close contact, there were limitations on how data could be collected. I intended to use eye tracking software to map emotional changes on to visual reactions from participants; however, such plans needed to be reconsidered due to lockdown restrictions. Objective measures would have been useful when exploring CD with this being a field of study with much debate. CD is linked to trauma in that trauma causes someone to question their core beliefs. Bourne, Mackay and Holmes's (2013) study examined vicarious trauma from watching traumatic film content using data taken from MRI scans. This highlighted the similarities between trauma symptoms from direct trauma survivors and the participants who viewed traumatic content. Participants who viewed the film footage showed brain region activation like those experiencing intrusive flashbacks and acute stress. For the current thesis, MRI scans could be compared of those who reported higher CBI scores, against those who reported no or significantly lower CBI scores. This would provide more objective data potentially for the state of CD.

The content being delivered to participants was through Qualtrics, rather than a social media news feed. Content was also negative or positive rather than mixed. This means that the ecological validity of the study was not high as results are not very generalisable to a real-life situation. De Hoog and Verboon (2020) used a research design whereby participants were asked to complete questionnaires, via a notification on their phone when prompted. This design is known as the Ecological Momentary Assessment (EMA). It would have been advantageous to apply a design such as this to gain a more natural collection of data which would have been generalisable to the population's actual behaviours. It is not realistic to only see only positive

or negative content in one period, but some controls were needed to examine how negative and positive content impacts people. Future research could also benefit from including a third group subjecting participants to a variety of negative and positive content to compare results. In a controlled scenario, participants are more likely to focus on the content in greater detail than they would do if they were scrolling through their phone. The EMA would have allowed for participants to continue with their daily lives and at times, have been prompted to answer a questionnaire to gain data.

The size of the samples used were enough to observe a significant difference within the data, as suggested by G*Power. Although the samples consisted of a large age range, the studies did not obtain results for those aged 17 years and younger as the study focused on an adult population due to ethical consideration with the study containing graphic content warnings. However, those aged below 18 years old will be engaging in ONC and will have been brought up with this being the norm as they have been able to have access to the internet devices from a younger age. This may have changed results if this age group was included meaning the current studies results are not generalisable to the entire population.

The collection of the samples of positive and negative content within the pilot study was collected in a way to reduce researcher bias as participants were asked to rate a selection of samples so that the general population would decide on the finalised samples of positive and negative ONC. However, the procedure for collecting samples of ONC could have been improved by an external individual to the research taking over the collection of samples without knowing the rationale for the study or selecting every 3rd sample of news using a randomised method.

It would have been advantageous to record participants mental health before they commenced with each study. This could have been achieved using psychological outcome measures such as the GAD-7 (Spitzer, Kroenke, Williams & Löwe, 2006) and PHQ-9 (Kroenke, Spitzer, Williams, 2001). Mood is related to emotion as someone's mood can lower or increase the threshold to an emotion being triggered. If someone is experiencing low mood or anxiety, this will affect their measure of emotional states when watching ONC. In research into newsroom editors (Weidmann & Papdorf, 2010) it was found that those with unrelated trauma or general work-related stress, had a greater tendency to show more severe PTSD symptoms because of watching the raw, unedited news footage. Therefore, using measures such as the GAD-7 and PHQ-9 could have provided explanation for outliers within the data.

It was originally not felt necessary to take a measure of emotional change before and after recalling ONC in Chapter four, as Chapter three had already retrieved this data. Chapter four was wanting to focus on understanding why this examination to core belief occurred in the negative ONC group. This was already found to be related to a reduction in relaxation. However, after reflecting on the results in Chapter four, having this additional data would have been beneficial so that the findings, particularly for sense of self, could have been better explained within the discussion. There is not enough data present to infer why the findings for this variable occurred and whether this variable was performing in a positive or negative way for participants. Emotions may have been able to be regulated by participants with a stronger sense of self, even in the presence of undesirable CD.

Previous studies exploring social comparison theory have found inconclusive results when focusing on specific directions (upwards and downwards) when examining the interaction between social comparison behaviours and news content (c.f. Chpt 2, section 2.6.1); thus

Chapter Four looked at social comparisons more generally. However, engagement in social comparisons may have been too broad of a topic and it may have been more beneficial to focus on the motivations underlying social comparison behaviours instead. Furthermore, the SSCO measure may not have been relatable enough to making social comparisons online and therefore a more specific measure for this would have potentially been more useful.

5.5 Clinical Implications

Chapter three has found that mental health professionals are going to face a challenge in supporting clients in regulating their emotions, whilst they have access to ONC, particularly negatively framed content. This research has implications for clinical practice in the need to make clients who are emotionally vulnerable aware of the impact that watching ONC has on their emotions and cognitive processes. It is useful for mental health practitioners to be aware of their client's relationship with ONC as well as suggesting they avoid this type of content, where possible, whilst therapy is ongoing, and they are not in a stable state emotionally.

In relation to the recent pandemic, where there has been a significant rise in the number of people seeking therapy for their mental health. There has been concentrated news coverage on the pandemic which has been unrelenting and pervasive. Part of the criteria or recommendation for gaining a therapy place could be arguably to avoid watching ONC where possible to ensure that clients are in a less emotionally reactive state to commence with therapy. Work could then be focused on supporting clients in introducing ONC into their life but focusing on developing protective factors for clients to regulate their emotions when processing this information. Studies exploring the impact of mass media on social media regarding the COVID-19 pandemic have found that it has led to an increase in negative emotions such as anxiety, fear,

and anger (Giri & Maurya, 2021). Rather than depending solely on mental health facilities to heal the difficulties people are facing, society can reflect on and adapt current ways of living to prevent mental health difficulties. Although the issues around mental health cannot be reduced to one area, tackling one problematic area at a time will support progress in the long-term. Negative or unconstructive ONC is being found to be problematic for people's mental health and is not an issue that can go on being ignored. Just as society evolves as it learns about the factors that impact people's physical health, society must evolve as it learns about the factors that are impacting people's mental health.

The findings focusing on protective factors to reduce vulnerability has highlighted how Counselling Psychology professionals can support their clients to identify the areas in their life that they are not satisfied with and find ways to develop these to reduce their client's vulnerability online. The results also highlight how prompting clients to take some time away from ONC could also be a way of developing their life satisfaction. Negative ONC consumption was being suggested by the data to be a possible perpetuating factor in the reduction in life satisfaction. Therefore, reducing the negative ONC that person watches may help to break this cycle.

The results of this thesis suggest that emotionally charged news can affect people, so it may be useful to consider policy implications of online news consumption more thoroughly. There is the argument that negative news content is useful in that it reduces people's naivety to the difficulties that others are facing globally, however there is the question of whether this can be communicated without impacting people's wellbeing. These findings provide an argument for social media platforms to relook at their community standards at what is acceptable to be shown and what should constitute as 'newsworthy' content. The samples of content used for Chapter

three was taken from well-established news outlets on social media. This was done to so that the content shown was vetted and ethical. However, it is worth noting that there is much more shocking content that is accessible on social media sites as it is deemed ‘newsworthy’.

5.6 Future research

Conducting research provides pathways for the development of new research areas. Exploring if there are any lasting effects on viewers in the coming days after watching ONC would be useful to understand the extent of the impact. The current thesis focuses on the immediate effects of viewing negative or positive ONC. It would be beneficial to design a study which also checks in with participants at regular intervals over a week to see if they have experienced any further effects from viewing the content. Core beliefs take a long time to change after consistent challenge (Dougall, Liegey, Hayward & Baum, 2005). If the study was conducted over a longer period, findings may highlight a shift in some people’s beliefs about the world after being exposed to negatively framed content over this period. Research into mass media coverage of traumatic events (Ahern et al, 2004; Holman et al 2019; Holman et al, 2014) has highlighted how exposure to graphic news content can result in symptoms of Post-Traumatic Stress Disorder (PTSD). A follow up questionnaire could have been emailed to participants 3-5 days after they watch the content to explore any lasting effects.

The findings in Chapter four open the possibility of a reciprocal cause and effect relationships between life satisfaction and news consumption. Increasing overall life satisfaction may support people in reducing the amount of negative news content they view, which could reduce the cognitive impact experienced because of recalling negative content. Alternatively, people who watch more negative ONC, could then have low life satisfaction as a result. This finding

highlights how there is possibly cycles of behaviours and functions that are evident and could be understood further. For instance, it is not yet known conclusively why people who report low life satisfaction overall, are more motivated to view negative news content but previous research into beliefs suggest that people tend to seek out content which reflects their own beliefs (Slater, 2007). Qualitative research using interviewing techniques and grounded theory analysis may be a useful way forward to understand the function of this and ask why.

5.7 Conclusion

Participants experienced an increase in negative emotions (anger, sadness, angry, anxiety, fear, and disgust) and a decrease in positive emotions (happiness, relaxation, and desire). Emotional change from before content to after content were not as significant in the positive ONC condition. The decrease in relaxation in the negative ONC condition was related to examination to core beliefs when negative ONC was viewed. The decrease in happiness and desire in the positive news condition was related to examination to core beliefs when positive news content was viewed. People who report a low life satisfaction were more likely to watch negative ONC and experience greater challenge to their core beliefs when negative news was recalled. This process could also be reciprocal and would need further exploration. People with a weaker sense of self were more likely to view negative ONC and experience a greater challenge to their core beliefs when negative news was recalled. The thesis has forwarded an understanding of how people respond emotionally and cognitively to ONC and has begun to introduce factors which have the potential to increase people's vulnerability to ONC consumption.

Chapter Six

Critical and Reflexive Appraisal of the Research Process

The following Chapter provides my critical reflective account of the process of my development as a researcher and practitioner using the Brookfield's (1998) Lenses Model. This model draws upon several perspectives to critically reflect on work. The Counselling Psychologist perspective offers insight from clinical experience and provides a perspective based on psychological theory. The autobiographical lens provides attitudes based on personal experiences through my own development. A supervisor perspective is also included which encourages a more objective perspective of the research.

6.1 Developing a Research Question

During this initial stage of developing a research question, I was focusing on what topic I was most interested in. My research question and interest in how ONC impacts people, was driven from my own personal interactions with this content. As a trainee Counselling Psychologist, I was in my early days of training with little practical experience. I was less able to utilise gaps in knowledge in terms of clinical practice and was more in touch with gaps in knowledge regarding mental health on a societal level. I viewed this as a limitation for my research because as my knowledge and experience grew as a mental health practitioner, there were specific areas that I noticed that if I had pursued as a research topic, would have benefited my clinical practice more. I also feel that I would have been able to make the research questions much more focused if I had more clinical experience when going into the research project. However, I feel this thesis is unique in that it can capture the issues outside of a clinical setting,

alongside Counselling Psychology theory which makes the topic both useful and more generalisable.

6.2 Research Design

At this stage of the process, my way of thinking was being driven by my experience as an undergraduate researcher. I recalled that I was not realistic as an undergraduate researcher and developed research designs which I found challenging to achieve in terms of my target sample and data collection method. Being more realistic supported me when I came to data collection, but I believe also limited my creativity in terms of the research design. Instead of thinking of what I wanted to find out and then looking at how this could be done, I looked at what could realistically be done and what I could learn from this research design. I was guided by the access to resources I had, which felt limited due to my lack of clinical experience at the time. Now I would have taken more time speaking with others within the services I volunteered for, looking at ways that my research could support them and how they could support me in terms of resources.

When I first developed my research proposal for study one, the Covid-19 pandemic began, and this meant research which consisted of any in-person contact could not go ahead. Originally the thesis would have been an adapted version of study one. The Tobii X2 30/60 eye tracking software would have been used to highlight any behaviour changes between participants, when watching the ONC. Eye tracking software can be used to identify points of interest where a participant has focused longer on something shown on the screen, known as fixations. The software would have also highlighted emotional arousal from pupil dilation. Observing where a participant is looking when presented with ONC would have also demonstrated any potential

avoidance, such as looking towards the edge of the screen. This would have provided objective data to support the self-reported data taken from the questionnaires whilst also providing the behavioural component to the CBT theory underpinning the thesis. The study needed to be adapted so that it only took place online and therefore the eye tracking software could not be utilised. Having a limited means of collecting data meant I was reliant on self-reported data. I believe at this stage I was more dependent on my training as a Counselling Psychologist than a researcher due to this limitation. I think this is reflected in my use of a mediation model in Chapter four as it understands processes much like how a psychological formulation would work.

6.3 Study Stimuli

When searching for ONC which could be used within the study, I spent a lot of my time on social media and watching this type of content. Later I noticed how I experienced intrusive thoughts in my daily life, related to the content I viewed. I observed how my emotions changed as a result. For example, in one moment I was parked at a traffic light waiting for it to change when I noticed a mother and child walking past some shops laughing and this triggered me to recall a piece of ONC where a mother and child were the victims of a bombing that took place outside a shop. My own beliefs began to shift, the more I collected ONC. I found that this experience influenced my perspective on the study and how I would later interpret findings as I was looking for links between my experience and the results from the data. This caused research bias. I should have looked at having external help in collecting the stimuli from someone who did not know what the research was exploring. This experience shaped study two's research design and the focus around the consumption of negative ONC as a mediation variable.

6.4 Analysis

As a trainee Counselling Psychologist, much of my work is focused on being reflective and formulating. Needing to be objective to analyse data was challenging and hypotheses felt restrictive. I noticed that this was a point within the supervisory relationship that became challenging. Thinking about this stage through the lens of a supervisor, I was becoming viewed by the literature and the interpretation stage too early, rather than focusing on objectively testing the data. The thesis was beginning to shape, and this facilitated an urge to connect chapters together. I felt lost and I was not on the same page as my supervisors. To overcome this, I forgot about the thesis structure and began working objectively as a researcher, rather than a psychologist. I focused on the data and hypotheses being tested only. I do feel that trainee Counselling Psychologists who conduct quantitative studies are using less of the skills that they acquire during their training compared to those who carry out qualitative studies. If I was to carry out further research, I would utilise my skills better by utilising a qualitative methodology. I would have used interviewing skills, been more reflective and analysed the data for themes and patterns, which are skills encouraged in Counselling Psychology. I have learnt that I value a more constructivist perspective of obtaining knowledge that allows people to express their experiences with the world through a less limiting method than Likert-scales.

6.5 Writing and structuring

My frustration began to develop at this stage with the research because I had developed experience and knowledge as a trainee Counselling Psychologist through my clinical practice and time on the Doctorate course. I was better able to look at my work through the lenses of a trainee Counselling Psychologist and a researcher. However, the foundation of my work was

developed by my former, more naïve self in comparison. The research process is long-term, and I developed in my views, my interests, and my knowledge and as a result became critical of my work and I experienced urges to change what had been written regularly.

If I was to complete the thesis again, I would have started with a more detailed overarching plan and made sure this flowed before then working my way through each section within each Chapter. My largest flaw is that I conducted a literature review and drafted this and moved on to conducting my research whereas I should have finalised this section first. As mentioned earlier, changes to the study were made due to the pandemic. These changes interrupted how I went about conducting my study and the perspectives I took on what new knowledge I wanted to develop about ONC. I believe this was one contributing factor to the disrupted flow of the thesis as it develops into Chapter four.

6.6 Application of findings

The findings from this thesis have been applicable to my personal life as I am more conscience now, when I am faced with graphic content warnings before ONC, of the impact on my internal state in deciding to continue to watch the content. From a Counselling Psychology lens, the findings have shifted how I converse with the adolescents I support, as a trainee Counselling Psychologist within my community placement, when they discuss topics from ONC. I am more mindful to explore with them the frequency of their ONC consumption as well as what they have made of what they have seen rather than just skipping past the subject. With adolescents that view greater ONC and seemed to be fixated with seeking this out, I have been more focused on exploring areas of life they are dissatisfied with and supporting them to focus more so on developing these areas than consuming ONC.

Although this research is applicable to practice, I can see how my research's application to practice could have been improved. I begin to touch upon internet policy and how this needs to be revisited regarding ONC and what is safe to show. If this is the change, I wanted my research to achieve, then more focus should have been placed on testing this area and perhaps people's opinions about their experiences with ONC. My research attempted to understand and answer too many aspects of the topic of ONC. From a Counselling perspective, if I were to continue the research, I would have liked to focus on specific nuances of ONC to allow findings to be more applicable in a practical setting.

Chapter Seven

Reference List and Appendices

7.1 Reference List

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7.2 Appendices

Appendix A

50 samples of negative online content and 50 samples of positive ONC

All content is public and accessible on Facebook and even to those who do not have a Facebook account.

Positive Content

ABC News (2019). *Family spots kangaroo on the way to school*. [Video]. Retrieved from:

<https://www.facebook.com/ABCNews/videos/1142556805948562/>

ABC News. (2019). *U.S. astronaut Anne McClain has completed her maiden flight, landing this morning along with her fellow crew mates in Kazakhstan after 204 days in space*.

[Image]. Retrieved from:

<https://www.facebook.com/ABCNews/photos/a.10150095914943812/10158537738803812/?type=3&theater>

ABC News (2019). *Bears enjoy stroll across golf course*. [Video]. Retrieved from:

<https://www.facebook.com/ABCNews/videos/3070583449649425/>

Sky News. (2012) *Dog Actors Retirement Celebration in Hollywood*. [Image]. Retrieved

from:

<https://www.facebook.com/skynews/photos/a.488828294465106/488828937798375/?type=3andtheater>

BBC News. *Girl, five, 'photobombed' by Sparky the horse in holiday snap*. (2019). [Image].

Retrieved from: [https://www.itv.com/news/2016-01-12/girl-five-photobombed-by-sparky-](https://www.itv.com/news/2016-01-12/girl-five-photobombed-by-sparky-the-horse-in-holiday-snap/?fbclid=IwAR1ZMydc_zC7yYjFiLzH4WOCjFbQK93fpi_4T5YXr3ZfCw_KVDr4klexRpk)

[the-horse-in-holiday-](https://www.itv.com/news/2016-01-12/girl-five-photobombed-by-sparky-the-horse-in-holiday-snap/?fbclid=IwAR1ZMydc_zC7yYjFiLzH4WOCjFbQK93fpi_4T5YXr3ZfCw_KVDr4klexRpk)

[snap/?fbclid=IwAR1ZMydc_zC7yYjFiLzH4WOCjFbQK93fpi_4T5YXr3ZfCw_KVDr4klex](https://www.itv.com/news/2016-01-12/girl-five-photobombed-by-sparky-the-horse-in-holiday-snap/?fbclid=IwAR1ZMydc_zC7yYjFiLzH4WOCjFbQK93fpi_4T5YXr3ZfCw_KVDr4klexRpk)

[Rpk](https://www.itv.com/news/2016-01-12/girl-five-photobombed-by-sparky-the-horse-in-holiday-snap/?fbclid=IwAR1ZMydc_zC7yYjFiLzH4WOCjFbQK93fpi_4T5YXr3ZfCw_KVDr4klexRpk)

BBC News (2019). *Glenys the Menace*. [Video]. Retrieved from:

<https://www.facebook.com/watch/?v=541545682956985>

BBC News (2019). *Widows Celebrate Indian Festival Holi*. [Image 1 of 3]. Retrieved from:

[https://www.facebook.com/bbcnews/photos/a.10150618575207217/10153484227482217/?ty](https://www.facebook.com/bbcnews/photos/a.10150618575207217/10153484227482217/?type=3&theater)

[pe=3&theater](https://www.facebook.com/bbcnews/photos/a.10150618575207217/10153484227482217/?type=3&theater)

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[https://www.bbc.co.uk/news/av/uk-44184065/royal-wedding-2018-highlights-from-harry-](https://www.bbc.co.uk/news/av/uk-44184065/royal-wedding-2018-highlights-from-harry-and-meghan-s-wedding)

[and-meghan-s-wedding](https://www.bbc.co.uk/news/av/uk-44184065/royal-wedding-2018-highlights-from-harry-and-meghan-s-wedding)

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<https://www.facebook.com/watch/?v=2110497762578785>

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<https://www.facebook.com/watch/?v=893970437654590>

BBC News (2019) *Ninja Nan*. [Video]. Received from:

<https://www.facebook.com/watch/?v=2290536030963474>

Fox News (2019). *Two toddlers greet each other with hug*. [Video]. Retrieved from:

<https://www.facebook.com/watch/?v=1392218917602203>

BBC News (2019). *Gaspard the friendly fox*. [Video]. Retrieved from:

<https://www.facebook.com/watch/?v=831476457242792>

BBC News. (2019). *Boy 'over the moon' at checkout chance*. [Video]. Retrieved from:

<https://www.facebook.com/watch/?v=266912760513711>

Fox News (2019). *Dog uses birdbath to cool down*. [Video]. Retrieved from:

<https://www.facebook.com/watch/?v=744011066028044>

Sky News (2012). *Paralympics Parade*. [Image]. Retrieved from:

<https://www.facebook.com/skynews/photos/a.525670617447540/525671564114112/?type=3andtheater>

Sky News (2014). *A one-boy pitch invasion at the Brazil vs South Africa friendly ends with smiles, selfies and a very happy little boy*. [Image]. Retrieved from:

<https://www.facebook.com/skynews/photos/a.213165348698070/818411954840070/?type=3andtheater>

ABC News (2019). *Woman sets record as oldest person to sail solo around the world*.

[Video]. Retrieved from: <https://www.facebook.com/ABCNews/videos/1372694186238983/>

ABC News (2019). *Princess Charlotte attends first day at school*. [Video]. Retrieved

from: <https://www.facebook.com/ABCNews/videos/403631973626782/>

Fox News. (2019). *Dog Steals owner's camera*. [Video]. Retrieved from:

<https://www.facebook.com/watch/?v=742905356165778>

ABC News (2019). *Squirrel sneaks into car to steal food*. [Video]. Retrieved from:

<https://www.facebook.com/ABCNews/videos/430479904226307/>

ABC News (2019). *Playful duck returns boy's lost sandal*. [Video]. Retrieved from:

<https://www.facebook.com/ABCNews/videos/2166441646812531/>

Sky News. (2014) *Andy Murray Wins Wimbledon*. [Image]. Retrieved from:

<https://www.facebook.com/skynews/photos/a.213165348698070/884217341592864/?type=3&theater>

Global News. (2019). *'Scoot-by do?' Dog rides scooter around Vancouver parking lot*.

[Video]. Retrieved from: <https://www.facebook.com/watch/?v=502926760544859>

ABC News (2019). *Deer photo-bombs wedding photos*. [Video]. Retrieved from:

<https://www.facebook.com/watch/?v=912492969111375>

ITV News. (2019). *Artist transforms football stadium into lush forest to warn of deforestation*. [Video]. Retrieved from:

<https://www.facebook.com/itvnews/videos/516441175789274/>

ITV News. (2019). *Seesaw lets children play together across US-Mexico border wall divide*.

[Video]. Retrieved from: <https://www.facebook.com/itvnews/videos/435378143722521/>

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[SEARCH BOX](#)

NBC News. (2019). *"Polar Bear" swimmers take part in the L Street Brownies New Year's Day Plunge in South Boston. The water was a balmy 45 degrees Fahrenheit*. [Image]

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<https://www.facebook.com/NBCNews/photos/a.162132393806799/3029339940419349/?type=3&theater>

BBC News (2019). *Refugee children dance in first snowfall*. [Video]. Retrieved from:

<https://www.facebook.com/bbcnews/videos/2086793568049880/>

BBC News. (2018). *Polar bear cub plays in 'paddling pool'*. [Video]. Retrieved from:

<https://www.facebook.com/bbcnews/videos/1903464409677768/>

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ITV News. (2019). *Liverpool fan met Mo Salah after running into lamppost*. [Video].

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[SEARCH_BOX](#)

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[3&theater](#)

NBC News. (2019). *A 6-year-old Afghan landmine victim dances after being fitted with a new prosthetic leg*. [Video]. Retrieved from:

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<https://www.facebook.com/watch/?v=495395571294334>

BBC News. (2019). *My emotional support cat*. [Video]. Retrieved from:

<https://www.facebook.com/watch/?v=515313829273973>

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<https://www.facebook.com/bbcnews/videos/2322531574635011/>

ITV News. (2019). *Teacher who learnt 'the shuffle' dance goes viral*. [Video]. Retrieved

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ITV News. (2019). *Four-year-old told she'd never walk strides into school on first day*.

[Video]. Retrieved from: <https://www.facebook.com/watch/?v=2540439546037369>

ITV News. (2019). *'Oh my gosh - he's giving me a hug' Prince Harry meets Luton schoolchildren*. [Video]. Retrieved from:

<https://www.facebook.com/watch/?v=2428543117389718>

Negative News Content

ABC News (2019). *Cyclist dismounts to headbutt pedestrian after running red light*. [Video].

Retrieved from: <https://www.facebook.com/watch/?v=1069081299957013>

Sky News. (2013). *Protests in Chile*. [Image]. Retrieved from:

<https://www.facebook.com/skynews/photos/a.666287933385807/666288200052447/?type=3andtheater>

Fox News (2019). *Trailer hits firefighters*. [Video]. Retrieved from:

<https://www.facebook.com/watch/?v=436290506980316>

BBC News (2019). *Cameroon: Anatomy Killing*. [Video]. Retrieved from:

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ITV News (2019). *Petrol bombs thrown at police vans in Derry*. [Video]. Retrieved from:

<https://www.facebook.com/watch/?v=2361615694052589>

BBC News (2019). *Truck drives into ICE Protesters*. [Video]. Retrieved from:

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BBC News (2019). *Police Tackle Suspected Protesters on Hong Kong Metro*. [Video].

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BBC News (2019). *Car chase ends in shootout Video Cops and robbers in a dead-end gun fight*. [Video]. Retrieved from: <https://www.facebook.com/watch/?v=395195697803187>

ABC News. (2019). *Anniversary of the Rwandan Genocide*. [Image]. Retrieved from: <https://www.facebook.com/ABCNews/photos/a.10150095914943812/10158292841803812/?type=3&theater>

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ABC News (2019). *Death toll rises to 190 after a series of explosions at churches and hotels in Sri Lanka on Easter Sunday, according to an official with the Sri Lankan health ministry*. [Image]. Retrieved from: <https://www.facebook.com/ABCNews/photos/a.10150095914943812/10158333329173812/?type=3&theater>

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NBC News. (2019). *Police take away an injured man attacked by protesters outside Kwai Chung police station in Hong Kong on July 31.* [Image]. Retrieved from: <https://www.facebook.com/NBCNews/photos/a.162132393806799/3487738974579441/?type=3&theater>

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NBC News. (2019). *Ferry sinks in Iraq while bystanders watch in horror.* [Video]. Received from: <https://www.facebook.com/watch/?v=615190848950179>

Sky News (2019). *Bosnian Muslim women cry near the coffin of their relative.* [Image]. Retrieved from:

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<https://www.facebook.com/skynews/photos/a.213165348698070/842499845764614/?type=3&theater>

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<https://www.facebook.com/NBCNews/videos/331579864175841/>

NBC News. (2019). *Flight attendant violently flung against ceiling by severe turbulence*.

[Video]. Retrieved from: <https://www.facebook.com/NBCNews/videos/2840783625948327/>

NBC News. (2019). *Men protest the death of a fellow demonstrator in Port-au-Prince, Haiti, on Feb. 12. The protesters dragged the body to a spot near police after police shot into a crowd during a demonstration demanding the resignation of Haitian President Jovenel Moise*. [Image] Received from:

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<https://www.facebook.com/skynews/photos/a.213165348698070/1207758889238706/?type=3&theater>

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Guardian news (2018). *Tsunami floods into Indonesian city in terrifying new footage*.

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Sky News (2019). *UK gangs keeping 'scoreboard' on violence*. [Video]. Retrieved from:

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<https://www.facebook.com/oneshotnow/videos/375331566287204/>

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Appendix B

Discrete Emotions Questionnaire (DEQ; Harmon-Jones, Bastian, and Harmon-Jones, 2016)

Please indicate your response using the scale provided.

1. Before (*undergoing the emotional experience, e. g., viewing the photographs, reading the story, etc.*) to what extent did you experience these emotions?

2. After (*undergoing the emotional experience, e. g., viewing the photographs, reading the story, etc.*) to what extent did you experience these emotions?

1	2	3	4	5	6	7
Not at all	Slightly	Somewhat	Moderately	Quite a bit	Very much	An extreme amount

1. Anger (Ag)

2. Wanting (Dr)

3. Dread (Ax)

4. Sad (S)

5. Easy-going (R)

6. Grossed out (Dg)

7. Happy (H)

8. Terror (F)

17. Scared (F)

18. Mad (Ag)

19. Satisfaction (H)

20. Sickened (Dg)

21. Empty (S)

22. Craving (Dr)

23. Panic (F)

24. Longing (Dr)

9.Rage (Ag)	25.Calm (R)
10.Grief (S)	26.Fear (F)
11.Nausea (Dg)	27.Relaxation (R)
12.Anxiety (Ax)	28.Revulsion (Dg)
13.Chilled out (R)	29.Worry (Ax)
14.Desire (Dr)	30.Enjoyment (H)
15.Nervous (Ax)	31.Annoyed (Ag)
16.Lonely (S)	32.Liking (H)

Ag = Anger items, Dg = Disgust items, F = Fear items, Ax = Anxiety items, S = Sadness items, Dr = Desire items, R = Relaxation items, H = Happiness items.

Appendix C

A table outlining each discrete emotion from the DEQ.

Discrete Emotion	Function
<p>1. Anger</p>	<p>Known as a negative emotion (Harmon-Jones et al, 2011). People are not as open and reflective when anger is aroused (Harmon-Jones, Harmon-Jones and Summerell, 2017).</p> <p>Anger facilitates change through mobilising and sustaining a person's energy at higher levels (Izard, 1993).</p> <p>Harmon-Jones (2004) identified that anger resulted in approach motivation, therefore anger is associated greater with attack aggression (Harmon-Jones and Gable, 2008).</p> <p>Anger has been associated with other emotions such as shame and guilt (Izard, 1993).</p>
<p>2. Disgust</p>	<p>Known as a negative emotion (Harmon-Jones et al, 2011).</p>

	<p>Disgust is high in withdrawal motivational tendencies and arousal (Harmon-Jones, Bastian and Harmon-Jones, 2016).</p>
<p>3. Happiness</p>	<p>Known as a positive emotion (Harmon-Jones et al, 2011).</p> <p>Happiness facilitates an openness to experiences (Izard, 1993).</p> <p>This emotion is low in approach motivation as it is related to satisfaction (Harmon-Jones and Gable, 2008).</p>
<p>4. Desire</p>	<p>Known as a positive affect (Harmon-Jones, Bastian and Harmon-Jones, 2016).</p> <p>When arousal is high, desire is felt but when arousal is lower, satisfaction is felt (Harmon-Jones, Bastian and Harmon-Jones, 2016). Satisfaction relates to relaxation.</p> <p>Desire is associated to reward enjoyment when arousal is low and is associated to reward acquisition (Harmon-Jones,</p>

	<p>Bastian and Harmon-Jones, 2016). Individuals are more reflective and open cognitively when they experience satisfaction and are more closed when they experience desire (Harmon-Jones, Harmon-Jones and Summerell, 2017).</p> <p>Therefore, when arousal is increased, motivational approach increases (Harmon-Jones and Gable, 2008). When arousal is low, motivational approach reduces.</p>
5. Fear	<p>Known as a negative emotion (Harmon-Jones et al, 2011).</p> <p>People are not as open and reflective when fear is aroused (Harmon-Jones, Harmon-Jones and Summerell, 2017).</p> <p>Fear is felt to escape dangerous situations to move towards safety (Izard, 1993).</p> <p>Fear is high in withdrawal motivational tendencies (Harmon-Jones, Bastian and Harmon-Jones, 2016).</p>

	<p>This emotion has also been related to defensiveness (Harmon-Jones and Gable, 2008).</p> <p>Fear is different to anxiety as fear is triggered when a clear threat is known (Harmon-Jones, Bastian and Harmon-Jones, 2016). This threat could be physical, psychological or both (Izard, 1993).</p>
6. Anxiety	<p>Known as a negative affect (Harmon-Jones, Bastian and Harmon-Jones, 2016).</p> <p>Anxiety is associated with behavioural conflict meaning there may be a conflict between withdrawal and approach (Harmon-Jones, Bastian and Harmon-Jones, 2016).</p> <p>Anxiety is different to fear as anxiety is triggered by a suggested or unclear threat (Harmon-Jones, Bastian and Harmon-Jones, 2016).</p>
7. Relaxation	<p>Known as a positive affect (Harmon-Jones, Bastian and Harmon-Jones, 2016).</p>

	<p>Relaxation is linked to a low arousal of desire (Harmon-Jones, Bastian and Harmon-Jones, 2016).</p>
8. Sadness	<p>Known as a negative emotion (Harmon-Jones et al, 2011).</p> <p>This emotion slows down the cognitive and motor systems to allow for reflection (Izard, 1993).</p> <p>Sadness is low in motivational approach (Harmon-Jones, Bastian, and Harmon-Jones, 2016).</p> <p>Sadness is often triggered by a loss (Izard, 1993).</p>

Appendix D

Short Form Core Belief Inventory (CBI; Cann et al, 2010)

Some events that people experience are so powerful that they ‘shake their world’ and lead them to seriously examine core beliefs about the world, other people, themselves and their future.

Please reflect upon the content you have browsed and indicate the extent to which it led you to seriously examine each of the following core beliefs.

Responses are on a six-point scale (0-5):

Not at all (0)	To a very small degree (1)	To a small degree (2)	To a moderate degree (3)	To a great degree (4)	To a very great degree (5)
-----------------------	--------------------------------------	--------------------------	--------------------------------	--------------------------	--------------------------------------

1. Because of the content, I seriously examined the degree to which I believe things that happen to people are fair.
2. Because of the content, I seriously examined the degree to which I believe things that happen to people are controllable.
3. Because of the content, I seriously examined my assumptions concerning why other people think and behave the way they do.
4. Because of the content, I seriously examined my beliefs about my relationships with other people.
5. Because of the content, I seriously examined my beliefs about my own abilities, strengths and weaknesses.

6. Because of the content, I seriously examined my beliefs about my expectations for my future.
7. Because of the content, I seriously examined my beliefs about the meaning of life.
8. Because of the content, I seriously examined my spiritual or religious beliefs.
9. Because of the content, I seriously examined my beliefs about my own value or worth as a person.

Appendix E

Participant Information Sheet – Study One

Title: Exploring Online News Content and the Emotional and Cognitive effects it has on Online Users.

Purpose of study: This project will aim to consider whether the type of news content (positive and negative) on Facebook emotionally and cognitively impacts the general viewing population. There is a lack of research investigating whether viewing different types of content can have an impact on viewer's core beliefs.

This study is being conducted online via Qualtrics. You will be asked a series of questions about your emotions and core beliefs. You will also be asked to browse a Facebook news feed, which will include negative and potentially distressing content. Whilst there is no time limit for completing the study, we do not anticipate it taking longer than 30 minutes for your completion.

Thank you for your interest in our research exploring the effect news reports have on Facebook viewer's emotions and core beliefs. Please read the information below and indicate your consent to participate in the study.

Who can take part in the study?

You must be aged 18 or over to take part in this study and currently be a student of the University of Wolverhampton.

If you experience deafness or hearing loss, you will be able to participate in this study. The study does include some videos with which includes sounds however subtitles can be turned on.

Do I have to take part?

No, you do not have to take part as your participation is entirely voluntary.

You can withdraw from this study at any time and for any reason without any adverse consequences.

To withdraw, please click the 'Exit' button which will be displayed on the screen, rather than simply closing the browser or webpage. If you do the latter, any data submitted up to that point could still be included in the overall dataset.

If you wish to withdraw within 10 days of leaving the study, please send an email to the researcher stating your intent to withdraw along with your unique number which you provided at the start of the study (last three digits of phone number and last two numbers of postcode).

If you are unsure, please email the researcher if you have any questions. The email is located at the end of this information sheet.

Will my taking part in the study be kept confidential?

The completion of the demographic form is for research analysis only, no identifying information will be recorded. No data will be personally linked back to you as everything will be anonymised for analysis and write up.

Please note that by consenting to take part in the study, you are giving your full and informed consent to your data being added to the overall dataset for analyses.

Your data will be pooled with data from other participants and analysed at the group level. Your individual data will not be identifiable. The only people who will have access to the anonymised data will be the researcher and research supervisors.

All raw data will be securely stored. Electronic data will be kept in password protected data files only accessible to the main researchers.

What will happen at the end of the research study?

The data collected may be written up as a manuscript for academic publication. If the manuscript is published, then the data will be destroyed five years from the date of publication.

Please note that feedback cannot be given on individual performance. At the end of the study however, information will be provided on how you may access information about the overall study outcome.

Additional information:

It is important to note that there are no correct or incorrect answers to any of the study questions. Rather, your honest thoughts and opinions are of interest.

The content provided may contain flashing images. Those with epilepsy should not take part in this study for this reason.

You will also be asked to browse a Facebook news feed, which will include negative and potentially distressing content. By consenting to participate in this study, you are accepting responsibility for assessing your own mental state to determine whether you can safely take part.

Please provide your consent that you have read and understood this information, and that you are consenting to proceed with the study by clicking on the consent button below.

If you have any questions at all then please do not hesitate to contact the researcher, Sarah Alty [e-mail address redacted].

Appendix F

Consent Form – Study One

Name of researcher:	Sarah Alty
Title of study:	Exploring Online News Content and the Emotional and Cognitive effects it on Online Users.

Please read and respond to each of the following statements. If you are willing to participate in this study, please confirm and proceed. If for any reason you wish not to proceed, just exit the study at this stage and notify the researcher. If you have further questions about the study, please contact the researcher, Sarah Alty [e-mail address redacted].

- I have had the research satisfactorily explained to me in verbal and written form by the researcher.
- I understand that the research will involve: questionnaires, viewing of online news content (some of which may be negative) and I understand that the study will last approximately 30 minutes.
- I understand that I may withdraw from this study at any time, up to ten days after taking part in the study. If I wish to withdraw within the 10 days of leaving the study, I understand this must be done via email to the researcher.
- I understand that all information about me will be treated in strict confidence and that I will not be named in any written work arising from this study.
- I understand that all data will be used solely for research purposes and will be destroyed on completion of your research.
- I understand that you will be discussing the progress of your research with others at the University of Wolverhampton.

- I confirm that I am over the age of 18 years.
- I understand that the content I view may be distressing to some (e.g. includes violent or graphic imagery). By consenting to participate in this study, I am accepting responsibility for assessing my own mental state to determine whether I can safely take part.

I freely give my consent to participate in this research study.

Signature:

Date:

Appendix G

Debrief Sheet – Study One

Thank you for participating in this study.

The study is concerned with the types of information that we view on social media. In particular, we often see negative images and reports pop up on Facebook. Paying attention to these may impact our mood and beliefs, which is what we are investigating in this study. We therefore took measures of your mood before and after the viewing of the Facebook news content. We asked you questions at the end of the study regarding your beliefs and to what extent you felt the content you observed has challenged these in the present moment.

If you do find that the study has evoked any negative feelings or emotions and would like to speak to someone about this, please contact one of the following services stated below.

Where you can find support:

Anxiety UK

Call: 03444 775 774 (Monday to Friday 09:30 AM – 17:30PM)

Text: 07537 416 905

Email: support@anxietyuk.org.uk

Mind

Locate your local 'Mind' service

Link: <https://www.mind.org.uk/information-support/local-minds/>.

Seek advice from your local GP

<https://www.nhs.uk/service-search/find-a-gp>

Students at the University of Wolverhampton can also contact the Wellbeing team:

Mental Health and Wellbeing Team

University of Wolverhampton

MI001, Alan Turing Building

Wulfruna Street

Wolverhampton

WV1 1LY

Tel: (01902) 32 2572 (Monday to Friday, 9am - 5pm)

Email: MHWenquiries@wlv.ac.uk

If you would like to talk to any of the researchers about the project, please contact:

Sarah Alty on [e-mail address redacted]

Alison Attrill-Smith on [e-mail address redacted]

Lisa Orchard on [e-mail address redacted]

Thank you again for your participation.

Appendix H

Qualitative Data from Study One

These comments provided by participants of the pilot study have not been edited. Therefore, any grammar or spelling mistakes are also included in the entries.

ID: BC222

Hi, I feel that the news channels shouldn't show things like this, the story should be told but not broadcast how it actually happened. I have a young daughter and would be devastated if she was to accidentally stumble across any videos like this which were unsettling. I personally avoid seeing videos or even movies that pose similar themes like the videos that were seen. The news itself for the story should be made for awareness but the video to go with it I feel is too extreme to accompany it to the majority of public. I feel if this was commonplace for everyone then it would have negative impact mentally on people being regularly exposed to seeing videos against it.

ID: MS799

I'm quite impressed by your studies and the videos attached especially the fox story, it really made me feel happy and renewed my view about humanity. You have a very interesting dissertation and I wish you the best of luck. congratulations!

ID: RH320

Thank you for the opportunity. The videos I viewed during this study were all very uplifting and feel good type videos. I enjoyed watching them and felt very happy during and afterwards. I did notice a slight improvement in my mood.

ID: DC570

Thank you; it was a very interesting and thought-provoking study. The current environment (amidst a global pandemic - huge excessive death toll in the UK, police brutality in the US leading to BLM protests) in which the study is taking place will have a significant bearing on the subject matter. I personally feel there have been a significant deluge of news which has caused uncertain feelings. As such, to a large degree I feel somewhat desensitised to news stories more generally and perhaps it is only the stories such as the ones that you had picked that provoke strong feelings.

ID: ML876

Hi, I've just completed your survey on online content. I have no idea what other people may have answered but it might be worth asking what people do to gauge why they responded the way they did. I, for instance, have spent a significant part of my life working in conflict zones and the content of your videos had little to no effect on me.

ID: CK712

Hi there and thanks a lot for the experience of taking part in the study. I don't know if it's of much use but was really surprising to see the change in my mood after watching a few news reports. It's really made me think more about how easily the media can change the mood of a person if it wants to.

Appendix I

Sense of Self Scale – SOSS

1. I wish I were more consistent in my feelings.

- 1 – strongly disagree
- 2 – disagree somewhat
- 3 – neither agree nor disagree
- 4 – agree somewhat
- 5 – strongly agree

2. It's hard for me to figure out my own personality, interests, and opinions.

- 1 – strongly disagree
- 2 – disagree somewhat
- 3 – neither agree nor disagree
- 4 – agree somewhat
- 5 – strongly agree

3. I often confuse my own thoughts and feeling with those of others.

- 1 – strongly disagree
- 2 – disagree somewhat
- 3 – neither agree nor disagree

4 – agree somewhat

5 – strongly agree

4. I often think how fragile my existence is.

1 – strongly disagree

2 – disagree somewhat

3 – neither agree nor disagree

4 – agree somewhat

5 – strongly agree

5. I have a pretty good sense of what my long-term goals are in life.

1 – strongly disagree

2 – disagree somewhat

3 – neither agree nor disagree

4 – agree somewhat

5 – strongly agree

6. I sometimes wonder if people can actually see me.

1 – strongly disagree

2 – disagree somewhat

3– neither agree nor disagree

4 – agree somewhat

5 – strongly agree

7. Other people’s thoughts and feelings seem to carry greater weight than my own.

1 – strongly disagree

2 – disagree somewhat

3– neither agree nor disagree

4 – agree somewhat

5 – strongly agree

8. I have a clear and definite sense of who I am and what I’m all about.

1 – strongly disagree

2 – disagree somewhat

3– neither agree nor disagree

4 – agree somewhat

5 – strongly agree

9. My opinions and values can change almost as quickly as my moods.

1 – strongly disagree

2 – disagree somewhat

3– neither agree nor disagree

4 – agree somewhat

5 – strongly agree

10. It bothers me that my personality doesn't seem to be well-defined.

1 – strongly disagree

2 – disagree somewhat

3– neither agree nor disagree

4 – agree somewhat

5 – strongly agree

11. I'm not sure that I can understand or put much trust in my thoughts and feelings.

1 – strongly disagree

2 – disagree somewhat

3– neither agree nor disagree

4 – agree somewhat

5 – strongly agree

12. I find it difficult to distinguish my beliefs and perspectives from other people's beliefs and perspectives.

- 1 – strongly disagree
- 2 – disagree somewhat
- 3– neither agree nor disagree
- 4 – agree somewhat
- 5 – strongly agree

13. Who am I? is a question that I ask myself a lot.

- 1 – strongly disagree
- 2 – disagree somewhat
- 3– neither agree nor disagree
- 4 – agree somewhat
- 5 – strongly agree

14. I need other people to help me understand what I think or how I feel.

- 1 – strongly disagree
- 2 – disagree somewhat
- 3– neither agree nor disagree
- 4 – agree somewhat
- 5 – strongly agree

15. My beliefs and values change from day to day.

- 1 – strongly disagree
- 2 – disagree somewhat
- 3 – neither agree nor disagree
- 4 – agree somewhat
- 5 – strongly agree

16. I tend to be very sure of myself and stick to my own preferences even when the group I am with expresses different preferences.

- 1 – strongly disagree
- 2 – disagree somewhat
- 3 – neither agree nor disagree
- 4 – agree somewhat
- 5 – strongly agree

Scoring:

Difficulty understanding oneself: 6 items as "It's hard for me to figure out my own personality, interests, and opinions".

- **Inconsistency of one's thoughts and feelings:** 3 items as "I wish I were more consistent in my feelings".

- **The need for external self-definition:** 4 items (e.g., I need other people to help me understand what I think or how feel).

- **The sense that one's very existence is tenuous and subject to question:** 3 items (e.g., I often think how fragile my existence is).

Scoring system:

- < 60 % weak sense of self.
- > 60 % strong sense of self.

Appendix J

Scale for Social Comparison Orientation (SSCO; Gibbons and Bunk, 1999)

Most people compare themselves from time to time with others. For example, they may compare the way they feel, their opinions, their abilities, and/or their situation with those of other people. There is nothing particularly 'good' or 'bad' about this type of comparison, and some people do it more than others. We would like to find out how often you compare yourself with other people. To do that we would like to ask you to indicate how much you agree with each statement below.

Response scale for all items:

1. I disagree strongly

2. I disagree

3. I neither agree nor disagree

4. I agree

5. I agree strongly

1. I often compare myself with others with respect to what I have accomplished in life.

2. If I want to learn more about something, I try to find out what others think about it

3. I always pay a lot of attention to how I do things compared with how others do things

4. I often compare how my loved ones (boy or girlfriend, family members, etc.) are doing with how others are doing

5. I always like to know what others in a similar situation would do.

6. I am not the type of person who compares often with others - R.

7. If I want to find out how well I have done something, I compare what I have done with how others have done.
8. I often try to find out what others think who face similar problems as I face.
9. I often like to talk with others about mutual opinions and experiences.
10. I never consider my situation in life relative to that of other people - R.
11. I often compare how I am doing socially (e.g., social skills, popularity) with other people.

Scoring:

R = Reverse Scoring

Score Range: 11 to 55

Appendix K

Satisfaction with Life Scale (Diener et al, 1985)

Below are five statements that you may agree or disagree with. Using the 1 - 7 scale below, indicate your agreement with each item by placing the appropriate number on the line preceding that item. Please be open and honest in your responding.

- 7 - Strongly agree
- 6 - Agree
- 5 - Slightly agree
- 4 - Neither agree nor disagree
- 3 - Slightly disagree
- 2 - Disagree
- 1 - Strongly disagree

1. In most ways my life is close to my ideal.
2. The conditions of my life are excellent.
3. I am satisfied with my life.
4. So far, I have gotten the important things I want in life.
5. If I could live my life over, I would change almost nothing.

Scoring:

31 - 35 Extremely satisfied

26 - 30 Satisfied

21 - 25 Slightly satisfied

20 - Neutral

15 - 19 Slightly dissatisfied

10 - 14 Dissatisfied

5 - 9 Extremely dissatisfied

Appendix L

Content-based Media Exposure 2 (C-ME2: Den Hamer & Bushman, 2017)

All the questions below begin with the following:

“In the last week, how often have you seen on social media sites (Twitter, Facebook etc.) news which contains people who...”.

Please use the scale outlined below to answer each question.

(1) Never

(2) Hardly ever

(3) Sometimes

(4) Often

(5) Very often

1) ... fight?

2) ... openly talk about sex?

3) ... use drugs?

4) ... destroy someone else's belongings?

5) ... shoot at another person?

6) ... make a fool of someone else?

7) ... drink (a lot of) alcohol?

8) ... laugh at another persons' expense?

9) ... are having sex?

- 10) ... say negative things about another person behind their back?
- 11) ... make someone else trip and fall for fun?
- 12) ... steal?

- 13) ... are nice to another person?
- 14) ... help someone?
- 15) ... are in love?
- 16) ... understand how another person is feeling?
- 17) ... put someone in the spotlight in a positive way?
- 18) ... are willing to do something for someone else?
- 19) ... comfort others?
- 20) ... give something to another person to make them happy?
- 21) ... stand up for someone?
- 22) ... cooperate with someone else to do good?

Scoring:

Prosocial (positive) items – 13, 14, 15, 16, 17, 18, 20, 21, 22.

Antisocial (negative) items – 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12

Range: 22 to 110

Appendix M

Study Two: Recall Topics for ONC recall groups (positive, negative)

What participants associated with positive ONC	What Participants associated with negative ONC
Covid R number reduced	Black Lives Matter
Tone of voice	2020 Election
Images	Censorship
It's message	Cruel Youths
Covid Vaccine released	Animal cruelty
Tampon Tax Abolished	Suffering
It showed a new light on the UK government, that it wants to adopt scientific research.	Biased news
Made me feel hopeful.	May not have been factual
Gave me more pride in my country.	Misleading content.
News about my hobby	Body hate
Hope	Bullying
Resolution	Online trolls
News about people who helped each other in an accident.	The effect it had on me.
News about my local area.	Clickbait
Lower carbon emissions in the UK	Free school meals rejected
Better environment.	Breaking covid rules
Conservation getting better.	Capitol riots
Nurses moving back to their home.	Tory government not making decisions.

Biden wishes election	Coronavirus
Images of smiling, happy people	Homophobic
Positive words like overjoyed and very relieved.	Misogynistic
It told a story about people being able to reunite with loved ones after being separated due to border closures related to Covid 19.	Gender based violence
Trump leaving soon	Possible extended lockdown
‘The world breathes a collective sigh of relief’.	Brexit
Vaccines are effective.	Politics
Kittens	Crime
Cute/adorable	Repetitive
More income for UK tourism.	Covid deaths increasing
Less damage to the environment.	Man fighting for his life in hospital
Plans for lockdown ending.	Cancer treatment paused due to covid.
99-year-old man raising money for charity.	Death
People not giving up.	Sad
More jobs being generated.	The language used
Knighted by the Queen.	Christmas causing covid spike
Hemp is a powerful natural resource that can replace deprecating resources.	Church of England service hit by covid
Returning to normal life (post lockdown)	Clearly not telling the full narrative.
Praising keyworkers.	Failed insurrection on the capitol.

End of the snow and bad weather.	Kyle Rittenhouse
Praising NHS staff.	Focus on how people are affected rather than why they are affected.
Truthful and honest.	Critical
It might snow in London.	Worrying
Older people are less fearful of their losing their lives due to covid.	Gavin Williamson encouraging parents to complain about schools online learning
Economy chance at improving.	Suggesting teachers are not doing enough to support children during covid.
Positive approach in US again towards environmental concerns	Dismissing success in schools.
Joe Biden's intentions of signing Paris accord.	Rude
Biden also considering other progressive executive orders.	It was a very stressful time in my country, which is why the news made me feel uncomfortable and worried.
Information appeared not to be biased.	lots of violence and hatred were portrayed in the piece of news, since it was relating to a series of riots and protests that happened at the end of 2019
Someone receiving help.	Politically motivated.
Selflessness.	Mandatory Vaccines.
Optimistic for the future due to the information.	Online classes
Sport.	Tier 4 lockdown

Election news.	New strain of coronavirus
Encouraging.	School graduation online
Makes me feel proud.	Photo of dead baby elephant.
Progress.	Speculative comments
Trump being impeached.	News on inflation
UK will soon have a dedicated register of tradeswomen.	Propaganda
4 Major Asian Nations Cancel 80% of Planned Coal Power Projects.	Poaching
Snowmobiler survived.	Government loses control
It made me laugh.	Feeling I will never be safe.
It was about a dog and owner.	Weapons
Pregnancy announcement.	Distrust
Lost person found safe.	Disorder
Freedom.	Violence
Family.	Riots
Relatable.	White supremacy
Inspiring to see humans at their very best.	Police brutality
Engineering masterpiece.	Women's weight gain
Brexit deal done.	Women's appearance
Innovation.	Exploitation
Dolly Parton's birthday.	
TikTok Users Rallied to Design a Better Pill	
Bottle for People with Parkinson's.	

Appendix N

Consent Form – Study Two

Title of Study: Exploring the Impact of Online News Content on Core Beliefs.

Please read and respond to each of the following statements. If you are willing to participate in this study, please confirm and proceed. If for any reason you wish not to proceed, just exit the study. If you have further questions about the study, please contact the researcher, Sarah Alty [e-mail address redacted].

- I have had the research satisfactorily explained to me in written form by the researcher.
- I understand that the research will involve questionnaires about my thoughts in regard to viewing online news.
- I understand that I will be asked to recall online news content that I have accessed previously, outside of this study. The online news content I may be asked to recall may be negative and potentially distressing.
- I understand that the study will last approximately 30 minutes.
- I understand that I may withdraw from this study at any time, up to ten days after taking part in the study. If I wish to withdraw within the 10 days of leaving the study, I understand this must be done via email to the researcher.
- I understand that all information about me will be treated in strict confidence and that I will not be named in any written work arising from this study.

- I understand that all data will be used solely for research purposes and will be destroyed on completion of your research.
- I understand that the researcher, Sarah Alty, will be discussing the progress of her research with others at the University of Wolverhampton.
- I confirm that I am over the age of 18 years.

I freely give my consent to participate in this research study.

Participant ID code

Please create an ID code so that your data can be withdrawn if necessary. This code should be made up of the last two letters of your postcode, and last three digits of your phone number – for example, AB123.

Appendix O

Participant Information Sheet – Study Two

Title: Exploring the Impact of Online News Content on Core Beliefs.

Purpose of study: This project will aim to consider whether individual differences impact how people process online news content. The findings from this study will generate information to better understand how to support the general population in managing how they use online news content.

This study is being conducted online. You will be asked a series of questions about your perception of the online news content you view, your sense of self, social behaviours, and core beliefs, and will be asked to respond with your level of agreement on a scale. You will not be asked to view any news content, but you will be asked about your own experiences regarding online news content and to recall and report what you have seen previously. Please be aware that you may be asked to recall negative online news content which you might find upsetting.

Online news content is visual information regarding global events which is reported via social media networks, such as Facebook and Twitter. It usually appears unprompted by the viewer.

Whilst there is no time limit for completing the study, we do not anticipate it taking longer than 30 minutes for your completion.

Thank you for your interest in our research exploring the individual differences associated to viewing online news content. Please read the information below and indicate your consent to participate in the study.

Who can take part in the study?

You must be aged 18 or over to take part in this study.

The study is focusing on individuals who have access to online news content via social media (Facebook, Twitter). The study will begin by asking questions regarding this area of interest.

If you do not use social media (Facebook, Twitter), it is recommended that you do not take part in the study as you will not be able to fully complete all of the study sections.

Do I have to take part?

No, you do not have to take part as your participation is entirely voluntary.

You can withdraw from this study at any time during completion and for any reason without any adverse consequences. To withdraw, please click the 'Exit' button which will be displayed on the screen, rather than simply closing the browser or webpage. If you do the latter, any data submitted up to that point may still be included in the overall dataset. You can also withdraw your data up to ten days after completing the questionnaire by emailing the researcher with your participant ID code, which will be created at the start of the study.

If you are unsure, please email the researcher if you have any questions.

Will my taking part in the study be kept confidential?

The completion of the demographic form is for research use only; no identifying information will be recorded. No data will be personally linked back to you as everything will be anonymised for analysis and write up.

Please note that by consenting to take part in the study, you are giving your full and informed consent to your data being added to the overall dataset for analyses.

Your data will be pooled with data from other participants and analysed at the group level. Your individual data will not be identifiable. The only people who will have access to the anonymised data will be the researcher and research supervisors.

All raw data will be securely stored. Electronic data will be kept within the university OneDrive, data files only accessible to the main researchers.

What will happen at the end of the research study?

The data collected may be written up as a manuscript for academic publication. If the manuscript is published, then the data will be destroyed five years from the date of publication. If the manuscript is not published, data will be destroyed five years from the completion of the study.

Please note that feedback cannot be given on individual performance. At the end of the study however, information will be provided on how you may access information about the overall study outcome.

Additional information:

It is important to note that there are no correct or incorrect answers to any of the study questions. Rather, your honest thoughts and opinions are of interest.

Please provide your consent that you have read and understood this information, and that you are consenting to proceed with the study by proceeding to the next page to complete the consent form.

If you wish to raise concerns regarding research being undertaken by the University you may wish to contact the research integrity leads in the first instance.

The senior lead for research integrity is the Dean of Research - Professor Silke Machold

The administrative lead is the Research Integrity Manager - Miss Jill Morgan

Alternatively, the University of Wolverhampton has incorporated its policies and procedures for Anti-Bribery, Staff Interests, Fraud, and Whistleblowing into one Transparency

Policy <https://www.wlv.ac.uk/about-us/governance/legal-information/corporate-compliance/transparency/>. Please report any concerns to transparency@wlv.ac.uk

Research Supervisors: Dr Lisa Orchard [e-mail address redacted]; Dr Alison Attrill-Smith: [e-mail address redacted].

Appendix P

Debrief Form – Study Two

Thank you for participating in this study.

The study is concerned with how individual differences such as an individual's sense of self and social comparison behaviours can influence how people process online news content. In particular, we often see negative images and reports pop up on social media networks (such as Facebook and Twitter). Paying attention to these may impact how we perceive the world, others and ourselves, which is what we are investigating in this study. We therefore asked you questions at the end of the study regarding your beliefs and to what extent you felt the content you observed has challenged these in the present moment.

If you do find that the study has evoked any negative feelings or emotions and would like to speak to someone about this, please contact one of the following services stated below.

Where you can find support:

Anxiety UK

Call: 03444 775 774 (Monday to Friday 09:30 AM – 17:30PM)

Text: 07537 416 905

Email: support@anxietyuk.org.uk

Mind

Locate your local 'Mind' service

Link: <https://www.mind.org.uk/information-support/local-minds/>.

Seek advice from your local GP

<https://www.nhs.uk/service-search/find-a-gp>

Students from the University of Wolverhampton can also access the University's Mental

Health and Wellbeing Team

University of Wolverhampton

MI001, Alan Turing Building

Wulfruna Street

Wolverhampton

WV1 1LY

Tel: (01902) 32 2572 (Monday to Friday, 9am - 5pm)

Email: MHWenquiries@wlv.ac.uk

If you would like to talk to any of the researchers about the project, please contact:

Sarah Alty on [e-mail address redacted]

Dr Alison Attrill-Smith on [e-mail address redacted]

Dr Lisa Orchard on [e-mail address redacted]

Thank you again for your participation.

Appendix Q

Moderation analysis conducted as part of the post-VIVA feedback

During the VIVA for this thesis, it was raised whether it would be more appropriate to conduct a moderation analysis rather than a mediation analysis. It was argued that the type of online news content recalled (negative online news content or positive online news content) can be examined as a predictor of examination of core beliefs, with frequency of online news content viewed in the last 2 weeks, sense of self, life satisfaction and social comparison behaviours as *moderators* of this relationship. For example, recall of negative online news content may lead to a greater examination of core beliefs, but perhaps this will be weaker (or absent) for those with high life satisfaction.

The literature that had been examined in relation to resilience suggested that the variables; life satisfaction, sense of self and social comparison behaviours could be possible predictor factors for those who may face cognitive distress (examination to core beliefs) when recalling or viewing negative information (c.f. Chpt. 2, section 2.6.2). In the suggested moderation analysis, these same variables would be considered as factors which influence the strength of the relationship between recalling online news content and examination to core beliefs.

In the moderation model, the type of online news content recalled (negative news or positive news) is then required as an alternative predictor variable. This would mean that in the model, whether negative or positive online news content is recalled, would relate to the extent to which examination of core beliefs is reported by participants. In Chapter 3, study 1's results highlighted, as predicted by the literature, that there is no relationship between the type of online news content viewed and the reported examination to core beliefs. This is because

examination to core beliefs is dependent on what beliefs viewers have before they view the online news content. For example, if a person who has a particularly positive belief about a group of people watches negative online news content about this group, then they may report greater examination to their core beliefs. However, if a person who has a particularly negative belief about a group of people watched negative online news content about this group, they may report lower examination to core beliefs and vice versa. Therefore, the research and findings within Chapter 3 suggest that X in the suggested moderation analysis, will not predict Y. To include this moderation analysis within the thesis would be counterintuitive to the literature review and study 1 findings.

This is why in the current mediation analysis in Chapter four, the type of online news content recalled (positive news or negative news) is the situation in which a participant is orientated in for a relationship to be analysed, rather than a predictor of the relationship. This is similar to Franzoi, Sauta and Granieri's (2020) study where starting university education, in comparison to the general population, was used as a situation where the relationship between negative affectivity (X) and anxiety (Y) was being analysed within a mediation-moderation analysis. This study also examines both trait and state anxiety.

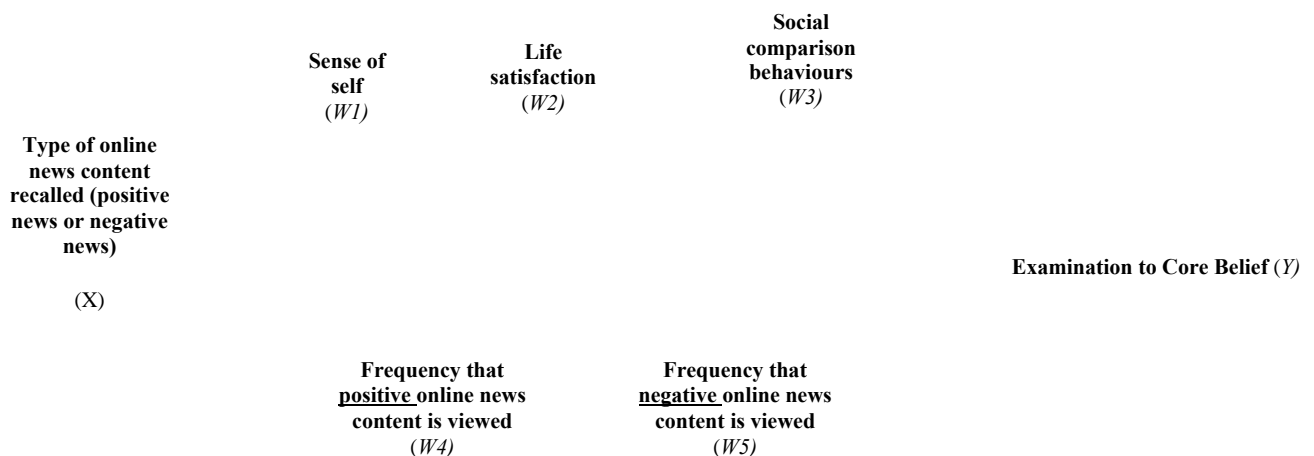
The suggested moderation model would also consider the frequency of which *negative* and *positive* online news content is viewed in the last 2 weeks separately as independent moderating variables rather than independent mediation variables. The mediation analyses were developed to understand the processes taking place which led to examination of core beliefs in some people. For example, the literature suggested that people with a lower life satisfaction viewed more negative news content because it would reflect their current emotional state. This would provide them with more information to examine their core beliefs further. People with lower

life satisfaction were also deemed to have less social support and therefore more likely to be influenced by external information received (Valkenberg & Peter, 2013). Theoretical considerations suggest that the frequency of which negative online news content is viewed in the last 2 weeks would be more appropriately analysed as a mediating variable explaining why further factors such as people with lower life satisfaction are more cognitively influenced by online news content.

However, the moderation analysis was considered and in SPSS PROCESS a series of five moderation analyses were run for sense of self, life satisfaction, social comparison behaviour, frequency of *positive* online news content viewed in the last 2 weeks and frequency of *negative* online news content viewed in the last 2 weeks (Figure 10). Model 1 was used in SPSS PROCESS for each of these models, with 10,000 bootstraps. The findings from this are discussed below.

Figure 10

Moderation model depicting the type of online news content recalled (positive news or negative news) as a predictor of examination to core beliefs with sense of self, life satisfaction, social comparison behaviours and frequency that online news content is viewed as independent moderating variables.



The frequency of *negative* online news content viewed in the last 2 weeks was found to moderate the relationship between type of online news content recalled (positive news or negative news) and examination to core beliefs ($F(1,102) = 8.39, P = .017, R^2 = .20$). This finding strengthens the results of the original mediation analyses within Chapter four because the results provide further evidence against desensitisation theory as there was a positive coefficient of .48 which suggests that a greater frequency of *negative* online news content viewed, strengthens the relationship between online news content recall and examination to core beliefs. The findings can also be understood through the more recent phenomenon known as ‘doom-scrolling’ whereby people spend a lot of time persistently viewing negative news (Anand et al, 2022; Ytre-Arne & Moe, 2021; Salisbury, 2021). This has been found to impact on people’s emotions such as anxiety and anger (Salisbury, 2021) but has also been linked to their thinking style. Anand et al’s (2022) study highlights how individuals will seek out evidence to strengthen a piece of information from content they have viewed previously and regard highly and dismiss evidence that challenges this, which is known as anchoring. This could explain why the higher frequency of negative online news content can strengthen the relationship between the type of online news content recalled and the greater examination to core beliefs reported by participants. People may seek out more negative online news in their daily lives to continue to examine a belief they have begun to develop.

However, there were also no significant interactions found for any of the first four moderation variables (sense of self, life satisfaction, social comparison behaviours and frequency that *positive* online news content is viewed). For the results for social comparison behaviours, the non-significant results could be due to a lack of validity in the measure as discussed in Chapter 5 when exploring the results of the mediation model for this variable. The

literature suggests that the variables sense of self and life satisfaction are factors which could predict a series of events to occur in relation to watching or recalling online news content. For instance, these variables within a mediation model provide more reasoning for the doom-scrolling phenomenon whereby those experiencing low mood or psychological symptoms spend more time on social media with more problematic use such as becoming dependent on it to cope with depression (Anand et al, 2022). The significant findings in Chapter 4 suggest that sense of self and life satisfaction are part of a process whereby examination to core beliefs occur when negative online news content is recalled. These variables can predict examination to core beliefs when other factors are considered but the findings from this moderation analysis highlight that they will not act independently to strengthen or weaken the relationship.