When Youtube Makes You Feel Bad

The impact of emotional valence on video consumption

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ABSTRACT

Youtube is the second biggest website on the entirety of the internet. As a platform it has proven itself to possibly be very profitable. Many individuals and organizations create content with the sole intention to attain a following and make a living off of creating videos. Over the past years, many have discovered the profitability and aim to seek their own wealth on the platform. A recent rise in terms of view count on negative / dramatic videos was discovered on Youtube. Based on insights from the Mood Management Theory, the Uses and Gratifications Theory and the Disequilibrium Theory, hypotheses concerning the impact of emotional valence were constructed. Thus, the aim of the current research is to investigate whether or not a difference exists in the likelihood for people to click on new videos, based on the positive or negative valence put within videos. Felt arousal within the participants was implemented in the model as a mediating variable in determining the impact of video valence on viewing behavior. An online experiment was conducted, in which all the participants were given one of three valenced to watch, whilst not knowing of the existence of the other two videos. The video that was shown was determined by the (close to equal) randomization algorithm of Qualtrics. Participants were then asked questions, which were based on the video they were shown. Viewer behavior of the participants was measured by paying attention to the likeliness for them to watch similar video content, as well as they likeliness to click on each of three presented (neutral, negative and positive) thumbnails. Data analyses had been conducted on 160 participants. The data was cleaned prior to analyses by removing the participants that had not completed the experiment. To test the relationships between video valence, arousal and viewer behavior, one-way ANOVA tests, simple linear regression analyses and PROCESS tests were conducted. Even though some of the conducted ANOVA tests and regression analyses seemed to indicate an impact of negative valence on viewer behavior to some extent, the significance of the mediating model as a whole was rejected. The research paper and the results are then discussed by highlighting the discovered limitations concerning the wide range of researched emotions, as well as shortcomings within both the chosen sample and the used video stimuli. The research paper is then finalized by providing suggestions for future research.

Keywords**:** Youtube, arousal, valence, clickbait, viewing behavior, Disequilibrium Theory

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1. INTRODUCTION

1.1 Research Problem

Currently, Youtube is a hybrid model for both monetization and amateur content, two areas that were previously separated (Arthurs, Drakopoulou, & Gandini, 2017). Whereas the option to monetize one's videos through advertisements on these videos was only available for bigger content creators (e. g., depending on passing a certain threshold of subscriber numbers), the option to monetize videos now is available to everyone. This growth in appreciation for mainstream amateur content creators/prosumers enables a power shift in what is broadcasted to the rest of the world. Nowadays, the platform of Youtube has proven itself to be a profitable platform. Surprisingly, it is not just professional content outlets that determine what other people see and what they can respond to. Everyone with a camera (or audio recorder) can add to the (audio-)visual hemisphere.

Essentially, the monetization model Youtube currently has for its creators has created a new market all by itself (Arthurs, Drakopoulou & Gandini, 2017). This market was grown due to the efforts of the content creators who continued to create all kinds of videos for the platform. The market of content creation and advertising revenue on Youtube is based mainly on both the number of views the videos of creators get, as well as on the number of minutes viewers spend on their videos (this is known as the retention time). As the number of views on Youtube videos determine the amount of advertising revenue a content creator may receive, how audiences perceive their videos is of great importance in terms of how much profit content creators will gain from it. In other words, this greatly affects the income of creators, especially when advertising revenue is their main source of income. This reliance on view numbers is what makes Youtube (and other advertising-based content platforms) such an interesting case. In the earlier years of Youtube (from approximately 2005 until 2010), a content creator that built his/her channel to the prestigious mark of 1.000.000 subscribers used to have accomplished something incredible and relatively unique. In today's day and age, the 5000th best channel, in terms of subscriber count, has more than 2.000.000 subscribers

(*Top 5000 YouTubers sorted by Subscribers*, 2019). It is thus recommended for content creators to discover what type of content is preferred the most by their audiences, because of the importance of and thus dependency on the view count of their videos. Having full-time content creators being dependent on the income of advertising revenue, makes researching what content has a high chance of sticking with large audiences both very interesting as well as necessary. As the subscriber count of a channel often coincides with the amount of views a channel will receive on its videos, having a solid number of subscribers is very important to have to sustain a successful channel. It is often said that everything that is put online can never be deleted. This is especially true when there are many individuals online with a large following on multiple different channels. This means that any news, both good and bad, will be spread easily and quickly: a content creator by the name of James Charles recently lost 2.6 million subscribers in one night, after he got into an online argument with another content creator named Tati Westbrook (Sharma, 2019). This event got a lot of attention while it was taking place in May of this year, however this is just one of many examples. Events like these do actually happen and it is very likely that these events will keep happening, hence why it is that important to create appealing content to audiences (and to continue doing it without making public mistakes). Looking at past audience behaviors, this paper aims to draw a picture of what is deemed to be the most effective content to grab and retain the attention of most viewers, to maximize retention time on videos and in turn maximize profit.

As video content can be anything (and thus unpredictable), it is vital to analyze not the content specifically, but the emotional effect it may have on viewers viewing said content (Abidin, 2015). Knowing which emotions may provoke a reaction to trigger viewers to watch certain content, may help content creators to design their videos differently, based on the emotions that can draw and retain viewer attention. Emotions are present in two ways in the context of this research. They can be present based on the emotional valence of the content of the videos themselves (Reuderink, Mühl, & Poel, 2013), as well as the sense of arousal related to the emotional impact on the viewers while watching videos. In past research, there have been many conceptualizations of emotion, as well as for similar concepts such as affect, mood and feelings. In some

cases, these concepts are even used interchangeably, and it is recommended that the use of these concepts must be carefully defined and delineated (Dasborough et al., 2008). How emotion, arousal and valence are defined for the context of this research, is discussed in chapter 2.1. Emotion can, from the viewers' perspective, be viewed as an affective reaction to an event. Additionally, looking at emotion from an audience's behavioral viewpoint, the concept can be seen as a tendency to move towards or away from an object (Roseman, 2011). The emotions people feel, are always caused by something and may also lead people to act because of felt emotions. This is a view that highlights motivational or behavioral aspects of emotion. These behavioral components are known as action tendencies and are considered to be outcomes of felt emotion (Roseman, 2011). Action tendencies in the context of online video consumption can be translated into clicking on a video, searching for a video, liking a video, etc. Two basic components constitute *core affect* (how much effect a certain stimulus has on a person, Russell, 2003): arousal and valence. Arousal is the strength of a given feeling or the extent to which a certain stimulus excites a person without any positive or negative direction. Valence then constitutes the direction of this arousal, to what extent it is either positive or negative.

To determine how arousal can be characterized as being either positive or negative, a combination of the Activation-Deactivation Adjective CheckList (AD ACL) and the Valence/Arousal circumplex model was used (Thayer, 1986; Fedman, 1995). These resources were created with the goal of quantifying felt arousal and its valence by categorizing measurements by mood adjectives. The argumentation for the mood adjectives that were chosen specifically for this research (along with the operationalization) is discussed in the third chapter.

Furthermore, research suggests that negative content has a stronger emotional effect than positive content has on viewers: more specifically, negative content is conceptually defined here as video content that can make people feel anger, fear, sadness, depression, and/or tense. When discussing specific consequences of exposure to negative content, previous research on these consequences is discussed as well in the following chapter (Fan, Zhao, Chen & Xu, 2014; Conway & Rubin, 1991).

As there exists an incredible amount of content on Youtube, there exists content that could make viewers feel any kind of emotion. However, over the past few years, a noticeable shift in trending videos emerged that garnered millions of views in a relatively short time span to content creators that followed this trend. Many content creators began to abuse a strategy known as Click Baiting (Potthast et al., 2018), which will be explained thoroughly in relation to past research in chapter 2.5. This was a surprising shift and it was thus interesting to find out what these videos had in common. Content creators have always been interested in trying to discover a trend that will continuously provide them with advertising revenue; as full-time content creators are dependent on this income, this is obviously a smart endeavor to invest time in. Content creators have had multiple strategies to draw attention to the videos on their channel and to increase their chances for new viewers to keep coming back as well. Notable trends of the past few years include collaborating with other content creators, Let's Play gaming videos, (toy) unboxing videos, creating diss track raps and pranking videos. It was discovered that many of these videos that received many views were often related to (personal) drama or were very shocking in nature. Screenshots of these examples are presented below.

Figure 1. No More Lies (Charles, 2019).

Figure 2. Toy Channels are Ruining Society (Klein, 2017).

This study aims to empirically investigate the notion that negative video content increases viewing behavior. It is thus interesting to examine whether or not there are implications to be drawn from creating one's videos in certain emotional ways to enhance the view count per video. The behavioral act of viewers that content creators will be (mainly) concerned with, is how they can draw audience attention to their videos. Moreover, they will be interested in attracting an audience that will continue to watch their videos in the future. In this current research, viewer behavior is looked at as both the intention to want to watch a video and clicking on an actual video. The main aim of this research paper is to discover the extent to which valence in video content impacts the viewing behavior of Youtube audiences.

Viewing behavior and video content can mean varying things if not put in the right context, which is why both concepts are defined in more detail here. Viewing behavior (in the context of online video viewing) can mean several actions, depending on the platform the video is viewed on / interacted with. On the platform of Youtube, possible behaviors to interact with videos are: clicking on a suggested video, searching for videos, (dis)liking a video, saving a video to a playlist, sharing a video, report a video and finally subscribe to the uploader of the video. The viewing behavior that is most relevant for this research, is clicking on one of the suggested videos, as acquiring views here to maximize advertisement revenue is the main objective for professional content creators. Important to note here, is that this behavior is concerned with the moment after watching the video the viewer currently finds him/herself on at the time; in other words, not after searching for a video manually.

For this research, video content consists of two components. By referring to the first component, the actual content happening within a particular video is what is mentioned. The other component includes the title and thumbnail of a particular video. The title and thumbnail are also bits of content, as they are meant to draw an audience in. The simplest way to understand this distinction is take the title and thumbnail into consideration as the components one sees before clicking on a particular video, whereas the other component is what is seen after clicking on a video. It was decided to split both parts into separate components, as they are both vital to the video watching experience, the video watching experience being both clicking on, as well as watching a video. The title and thumbnail are meant to draw audiences in, whereas the video content itself makes the audiences decide whether they enjoyed the experience or not. Thus, the research question of this thesis is:

RQ: *To what extent does valence in video content impact the likelihood for viewers to watch videos with similar valence and does arousal mediate the impact?*

1.2. Academic relevance

Even though research on the effects of visual media consumption has been done in the past (Anderson & Rainie, 2012; Conway & Rubin, 1991; Lang, 2000), research on the effects of mood contagion through contemporary visual media is lacking. This research paper builds on the current scientific landscape of knowledge on the influence of visual media on our emotions by focusing solely on online video consumption. Even though traditional forms of content consumption and the effects it has on emotional states is a topic that has been previously researched (Bakker, van der Voordt, Vink & de Boon, 2014; Dichiara & Bassareo, 2007; Lang, 2000), there is lack of research on the utilization of emotional states to garner more views (and thus a greater distribution of one's online content).

Hence, the current research can contribute to the field of media and communication by providing additional insights on the behavioral effects of video consumption, in this contemporary age of on-demand media consumption. Insights from the Uses and Gratifications Theory (Katz, Blumler & Gurevitch, 1973), Disequilibrium Theory as well from Mood Management Theory (Zillmann, 1988) are applied to this

research to help create to a more contemporary scientific framework on visual media consumption. The academic aim of this research paper was to define a possible relationship between purposely emotionally valenced online video, the felt arousal that video causes within an individual and the consequent viewer behavior that individual performs because of that stimulus.

1.3. Social relevance

Gaining insights on this particular topic is beneficial in terms of marketing and business perspectives, as the monetization model of online content creation has become a market of its own (Covington, Adams & Sargin, 2016). Furthermore, gaining a better understanding of the effects of exposure to (negative) valence in the contemporary online environment will have possible impacts on how online users view and use the internet. Insights on how to successfully attract audiences to online video content will to some extent also be applicable to other forms of online content, such as music and images. Insights on the effectiveness of manipulating valence within online content will be very beneficial for those parties who are distributing content and information, with the goal of making a profit.

Additionally, insights from this research can also be applied to improve and update automated systems that are in place to personalize video delivery: how arousal and valence can be analyzed in quantifiable context and manipulated for content creations will be discussed. An example of one of these systems is the list of suggested videos that are generated next to the video someone is currently watching.

1.4 Chapter Outline

This short section was made to serve as a brief overview of how this paper was structured. Each chapter is briefly discussed to give the reader an idea of what they can expect to come across.

The theoretical framework firstly discusses known definitions for the concepts of emotion, arousal and valence. After a brief discussion, the working definitions used for this research of these concepts are created. Before these concepts are applied to relevant theories, the dimensional approach towards researching emotion is explained. The effects of content consumption and its impacts on felt emotions are further discussed by applying viewer experiences to theory; there is a main emphasis put on the Uses and Gratifications Theory (UGT), as well as the Mood Management Theory (MMT). After discussing the main theories, the hypotheses of the research on video viewing behavior are presented. The chapter is then finalized by the visualization of the conceptual framework of valence, arousal and viewer behavior.

The Methodology chapter firstly discusses the research design and the choice to conduct an online experiment that this research used to collect the data. The reasons for choosing the method are discussed, as well as its advantages and disadvantages. The sampling method is then discussed briefly, which consisted of both simple random sampling and snowball sampling. The operationalization of these concepts is then discussed by going over the questions that will be asked to the respondents while they're going through the experiment. The operationalization of every concept is then linked to specific tests that had been conducted to measure scores for every concept; the reliability of the conducted tests is then explained per test as well. Finalizing this chapter, as the experiment includes some (possible) exposure to shocking content, ethicality is discussed in the context of the responsibility the researcher had for the participants.

The results of the three separate data analyses (one data analysis per video group) are discussed in the Results chapter. The results of each separate test are discussed and are interpreted in the context of the discussed literature from the theoretical framework. The hypotheses presented in that same chapter are then either accepted or rejected.

The Conclusion chapter builds on the results presented in the Results chapter, by discussing the outcomes of the hypotheses and what these outcomes mean exactly for the research sample in terms of their viewing behavior. These insights on the viewing behavior provided the researcher with insights on current patterns of video viewer behavior on Youtube. These insights were then translated into implications for video content creators on Youtube. The paper is then be finalized by highlighting limitations or problems that were encountered over the course of the research. These limitations are then be used to provide recommendations for future research.

2. THEORETICAL FRAMEWORK

This chapter is introduced by defining the concept of emotion, as there has been confusion on defining the topic in the past. Additionally, the discussion on emotion continues as the dimensional approach to emotion is explained and then related to the current research. The chapter also presents previous theories and past research on video content viewing, while comparing it to contemporary video viewing habits. I will then move on to introduce two important theories: the Uses and Gratifications Theory and the Mood Management Theory. The main concepts of arousal and valence are then discussed and what implications past research has had on these main concepts. Both the UGT and MMT concern the actual impact due to the content of the video. After the introduction to these theories and explanations of relevant concepts, hypotheses are then introduced. The chapter is finalized by presenting the conceptual framework of the research paper.

2.1. Defining emotion

In everyday discourse, it may at times happen automatically that terms such as emotion, arousal, affect, feeling and mood are used interchangeably. This error has occurred in literature as well, in which especially the concepts affect and emotion are used as if they referred to the same thing (Dasborough et al., 2008). Although researchers have yet to come to a complete consensus on the definition of emotions, they at least agree that emotions involve cognitive appraisal, physiological arousal and subjective feelings. Based on this consensus, a distinction between two different types of emotions was made. Additionally, for the context of this research, emotion is quantified and analyzed in terms of (felt) arousal and valence (Giannakopoulos, Pikrakis & Theodoridis, 2009). The first distinction of emotion made was that as a cause. Consuming content that is made to make the recipient experience a wide range of feelings, is what is conceptualized as *valenced content*. With arousal being the intensity of each feeling, arousal (throughout this paper) is referred to as *intended arousal*. The second distinction of emotion concerns how people experience feelings within themselves. The concepts of (felt) arousal and valence apply to this distinction of emotion. When discussing this second distinction of emotion throughout this paper, it

will be referred to as *felt arousal*. As valence is merely a direction of felt arousal and not something that can be felt directly, the concept of valence will remain one-dimensional throughout this paper.

2.2. The dimensional approach to emotion

It was made clear in the previous section that there exist some implications when it comes to measuring emotions (Dasborough et al., 2008). Most measurements had been made through self-reporting measures. Having respondents indicate their own emotional levels, brought with it some risks and assumptions. As most emotions tend to be intense and short-lived, it requires very specific and detailed memory to be able to recall them well. Moreover, self-reporting measures have to assume that the respondents are aware of their felt emotions and are able to recall them correctly.

Therefore, there exist varying approaches to conceptualizing and measuring emotion, but the most commonly used is the *dimensional approach* to measuring emotion. According to Hanjalic and Xu (2005), this dimensional approach is often referred to as the two-dimensional emotion space. The model is two-dimensional because emotion is measured through both arousal and valence. Arousal and valence were already defined earlier in this paper, with arousal being the intensity of the feeling and valence being the positive or negative direction of the feeling (Russell, 2003). Hanjalic and Xu investigated whether or not arousal within videos could be measured, analyzed and quantified to acquire data to enhance algorithms for personalized video delivery systems (2005). These same authors presented the concept of *affective content*. This term refers to the amount as well as the type of affect that is contained within a video and are expected to arise in the viewer while watching it. The *expected* element of the definition comes from the affect the content creators want to arise within the viewers while viewing their video. For instance, it could be expected how arousal within viewers near the end of a 500-meter sprint during the Olympics, or when a goal is scored during a soccer match. General events like these can help creators in developing models to highlight the affect-rich elements of a given video. Highlighting these high points within videos for both arousal and valence can result in what is known as an affect curve (Hanjalic & Xu, 2005). An example of one is shown below:

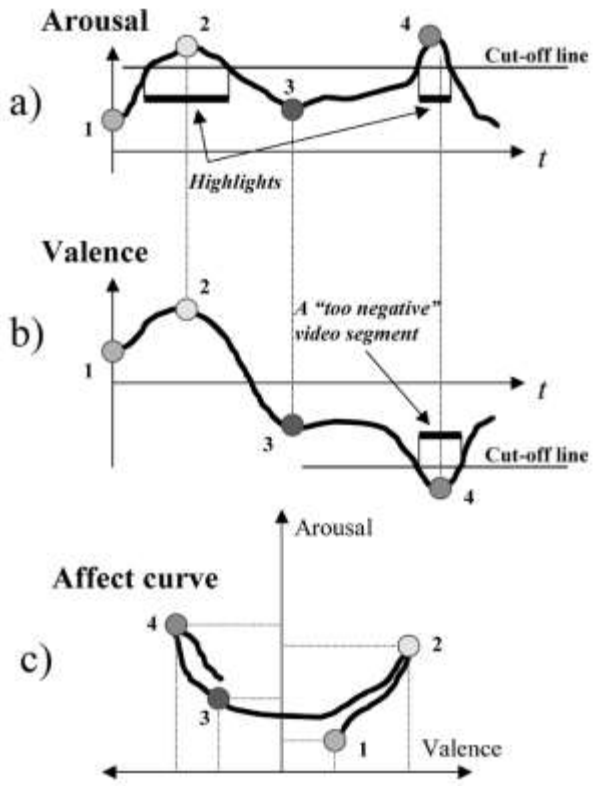

Fig. 3. Illustration of the arousal, valence and affect curve (Hanjalic & Xu, 2005).

However, the authors recognize that there will always be a difference between expected and actual affect; the actual felt affect within a person is always context-dependent and subjective. This subjectivity is combated by incorporating necessities for the arousal and valence dimensions. Furthermore, as arousal and valence are psychological categories, they have to be psychologically justifiable. To test varying levels of arousal and valence between videos, the first requirement is that videos have to be comparable to one another; that means that levels of arousal and valence between videos covering similar topics or events, have to be similar as well. The second necessity requires the levels for arousal and valence to change in a smooth manner: the arousal and valence levels cannot just jump up and down in the timespan of frames (Hanjalic & Xu, 2005).

This two-dimensional model of emotion was later expanded by adding a third dimension: the dimension of control (Reuderink, Mühl, & Poel, 2013). This dimension measures the extent to which the viewer has control over the felt emotion. The dimension is mostly used to distinguish between a small number of different moods,

such as grief and rage. However, as control only a small part of the independent variances in emotional responses in past research, the dimension is usually left out of current research.

2.3. Emotional processing and the UGT

A significant amount of research has been previously conducted on emotional impacts from viewing varying forms of content (Conway & Rubin, 1991; Baharom, Tan & Idris, 2014; Lang, Newhagen & Reeves, 1996). Youtube by itself can be viewed as a video-viewing platform. Looking at the platform from this perspective, the viewing experience can be compared to that of television viewing. Vital differences exist between the two: one of the most important differences between television and Youtube is that the content is constantly accessible and can be interacted with in varying ways (Arthurs, Drakopoulou & Gandini, 2017). Online content being readily available and easily accessible makes its users used to having instant gratification (Anderson & Rainie, 2012). Instant gratification essentially means to immediately find and be satisfied with an object or a service. An implication of this development may be that the current tech-savvy generation becomes impatient and expects immediate results as a standard. Additionally, due to the interactivity that is provided to us by the affordances of Web 2.0, the current generation expects that choice in what media to consume is a given, not a luxury (Cormode & Krishnamurthy, 2008).

These implications of instant gratification go hand in hand with the Uses and Gratifications Theory (UGT). The UGT considers how expectations are formed about an object and how people seek to gratify these expectations (Katz, Blumler & Gurevitch, 1973); in other words, what people do to satisfy these needs. It was found that people have several needs for watching television (Conway & Rubin, 1991). Using research on TV consumption, people were found to be affected by several factors, that mainly centered around the ideas of escapism in daily life (or stressful situations), sensation-seeking or a combination of both: people in this study were found to seek sensation to help themselves relax and the motivation of feeling anxiety yielded the same result. Additionally, the ability to interact with others while watching TV was also found to be a motivator for watching it. Sensation-seekers here were defined as being “stimulus

hungry" as well as to be "seeking arousing activities to achieve optimal arousal levels" (Conway & Rubin, 1991, p.447). It is important to note here that seeking sensation is thus one of the primary reasons people watched tv back then. Motivations to consume televised media such as escapism or sensation-seeking are likely to still be relevant, given the mentioned similarities between TV and Youtube. Reviewing insights on how individuals interact with comparable media and their motivations for initiating this behavior gives this paper a solid foundation to base the current research on.

2.4. Impact of negativity and the Mood Management Theory

A content analysis of approximately 140.000 tweets was conducted to analyze to what extent the emotions of anger, joy, sadness and disgust influence people their motivation on Twitter about varying topics (Fan, Zhao, Chen & Xu, 2014). The researchers discovered that anger was the primary motivator for people to voice their opinions. It is determined that anger was the most prevalent motivator as anger triggers an immediate response in the brain. More often than with the other emotions, people do not think twice about a certain action when in an angry state of mind, as people become more impulsive (Fan, Zhao, Chen & Xu, 2014). Furthermore, the researchers point out that future research is necessary for applying their findings on anger to the concept of *emotional contagion*: the extent to which the mood of an individual can influence the mood of other individuals (Barsade, 2002). This content analysis is an example of how people actively seek out media to interact with. Mood Management Theory (MMT) argues that people actively seek out media to actively distract themselves from their own negative moods (Zillmann, 1988). According to MMT, media use is impulsive and this impulsive use exists to drive out and to distract them from negative emotional states and to maintain pleasurable emotional states. The Self-Determination Theory argues that people have basic intrinsic needs, that are required to satisfy basic psychological well-being (Deci & Ryan, 2010). These needs are autonomy (willingness to perform a certain task), competence (a need for challenge and feeling of effect) and relatedness (a feeling of being related to others). Meeting these needs will result in increased attention, satisfaction with and enjoyment of a given activity (Deci & Ryan, 2010). The self-determination theory can hence correlate with the Mood Management Theory: due to

the basic intrinsic needs that people need to satisfy, they may actively seek out entertainment media to engage in mood repair. Mood repair refers to changing one's mood from negative to positive, as people find themselves in a positive mood when these basic intrinsic needs are met. However, the basic intrinsic needs people can become thwarted intrinsic needs; autonomy, competence and relatedness can take on varying twisting forms, in such a way that they might drive people to actively seek out negative content (Zillmann, 1988). In other words, the media a person seeks out is likely to be dependent on the intrinsic needs an individual has. In fact, one of the limitations of the MMT is that it has only been researched with a focus on distracting individuals from negative media (Tamborini et al., 2010) and not in the opposite direction.

Research on the effects of negative tv consumption was conducted by Lang, Newhagen and Reeves (1996). These researchers found that negative video increases the attention of the viewer, requires more cognitive resources to be processed and increases retention in the brain. They created what is known as a limited capacity information processing theory of television viewing, which was later refined by one of the authors to encompass all current media (at the time): The Limited Capacity Model of Mediated Message Processing (Lang, 2000). As the name of the theory implies, this theory argues that the human brain can only process and retain content to a certain extent; in their research it was found that the brain favors negative content over positive content, generally speaking. Their research solely applied to watching news stories on television. They attempted to measure both valence (the extent to which something is perceived as positive or negative) and arousal (the extent to which someone feels calm or excited) during the viewing of news stories. Additionally, negative video helps to retain what one sees better (as well as what happens shortly afterwards) and also makes the content one has seen before the negative content less memorable. Finally, negative video increases the self-reported negative impact of the content, making it feel even more negative. The authors note that the primary use of negativity in videos may be to just increase the emotional impact of the story; which then increases arousal, which in turn increases retention in memory (Lang, Newhagen & Reeves, 1996). This occurs because memory favors different types of content over others and will thus allocate more cognitive resources towards processing the preferred information. Even

though memory is not one of the variables in this research, having one's memory retain content-based partially on their valence implies that valence-rich content makes a more significant impact on the viewer than valence-poor content.

Applying these insights to the UGT, former research suggests that negative content seems to be the preferable information to retain in our brains, as people seek sensation in their daily lives and/or try to escape their daily lives (Conway & Rubin, 1991; Lang, Newhagen & Reeves, 1996). It is thus expected that similar reactions in our brain will occur when viewing negative video content on Youtube. Why negativity by itself causes stronger reactions than positivity does, was not specified. In another experiment, it was found that the emotion of anger is much more effective in creating commitment than being happy or calm (Winter, 2014). Commitment, in this case, is defined here as the extent to which a person emotionally invests in a given situation. This finding argues how people in a state of anger become very actively involved in a certain situation for a short period of time, as anger is a state of mind that triggers an immediate response. As past research indicates that negative content takes up the majority of the brain's cognitive resources, it is expected that, given the research on interaction with social situations or content while in an emotional state (Winter, 2014; Fan, Zhao, Chen & Xu, 2014), that videos with negative content will have more impact on the audience's viewing behavior than positive content will have.

Based on past research on the valenced video content, it is thus known that viewing stimuli with negative content can have several effects. Negatively valenced content activates the brain in such a way that it allocates more resources, for the content to be processed (Lang, Newhagen & Reeves, 1996). Additionally, as negative arousal states trigger an immediate response, such as anger (Winter, 2014), a likely response is to seek out escapism. Finally, as the current generation has become less patient due to the instant gratification that online content provides them, the following hypothesis is proposed:

H1: Negatively valenced content will make viewers more aroused than positively valenced content.

2.5. Click baiting and the Disequilibrium Theory

Aside from negativity, prior research has shown that that the concept of click baiting can be an instigator for interaction as well. Click baiting is the act of intentionally designing messages in such a way that viewers/readers/users are enticed to click a link in those messages to take them to an external website, often at the expense of informativeness and/or objectiveness (Potthast et al., 2018). In the context of video content, this act of click baiting can be translated into titles that leave the viewer wanting to see what the video is about. In terms of the thumbnails, content creators edit them in such a way that the viewer is consequently prompted to click on it. Additionally, content creators hint at what people will see, only if they click on the presented link. This is a very effective method of getting people to click, as they are curious as to what the content creator is hinting at without revealing it immediately. This is what Jean Piquet had already discovered in what he calls the Disequilibrium Theory (Goldstein & Naglieri, 2011): the human brain dislikes to feel unresolved. Being unresolved makes individuals feel uncomfortable when certain tasks or objects feel incomplete; there exists an awkward feeling in the brain, leading individuals to want to take action to feel resolved. Click baiting happens everywhere on the internet. When people are confronted with articles that only a show title before the link is being clicked on; when encountering a thumbnail before a video can start to play, when content is hidden behind a paywall; when content creators actively call users out to take action to find out what they do not know of yet: these are all possible examples of how click baiting is used. The term does speak for itself: users are being baited to click on something. This theory explains why click baiting is very recurring nowadays as all people are subject to feeling discomfort in their brain when exposed to an incomplete stimulus. Furthermore, individuals are always presented with a certain extent of varying choices. These varying choices can take the form of suggested videos next to the video an individual is already watching, or the growing Netflix library. As individuals in the contemporary age are very used to direct and extensive choices, it is unusual to actively search for new and exciting content anymore. This overabundance in choices, convenient as it may be, can make people very uncomfortable and feel very uneasy because of choice overload. Having too many choices may cause choice fatigue within individuals. This mental fatigue will most likely

prompt individuals to choose the familiar option that is readily available, thereby avoiding time and effort to make another (possibly worthwhile) choice. This theory leads to the second hypothesis of the current research paper, which is formed as follows:

H2: Increased levels of felt arousal within the viewer will lead the viewer to watch more video content that is similarly valenced.

In addition to this, the effects of the Disequilibrium Theory can become even more impactful. Researchers have discovered that some people have gotten used to feeling disappointed to such an extent after falling repeatedly for the same clickbait strategies, that they have seen a surge in excitement within individuals when they finally click on an article to find something that they were looking for (Dichiara & Bassareo, 2007). This happens because dopamine is released in your brain when something exciting or positive happens. Dopamine is a neurotransmitter that spreads whenever an individual feels a rush for either getting something impressive or doing something to be proud of. In the case of mental exhaustion caused by an over-exposure to clickbait, the dopamine rush one would receive occurs before even getting to the external page (or the actual video) the messenger is referring to (Dichiara & Bassareo, 2007). This notion exemplifies the strengthening effect of click baiting techniques, as people get exposed to it more and more often.

These insights of the Disequilibrium Theory can be applied to the previously established insights of the UGT and theory of limited capacity processing. All of the aforementioned insights combined suggests that (1) the brain prefers negative content over positive content, as it allocates more cognitive resources to the processing of that content; people seek sensation as well as escapism and have very limited patience due to their expectancy of instant gratification (2); lastly, the need for sensation and escapism and/or discomfort caused by the Disequilibrium effect (Lang, Newhagen & Reeves, 1996; Goldstein & Naglieri, 2011) are likely to lead to immediate responses, in this case clicking on a video with similar negative valence (3). Hence, the third hypothesis that is proposed is the following:

H3: Increased valence in videos will increase the likelihood that viewers will want to watch more similarly valenced content, with negatively valenced content taking precedence over positive valenced content.

To visualize the predicted outcomes of this research a simple graph was created:

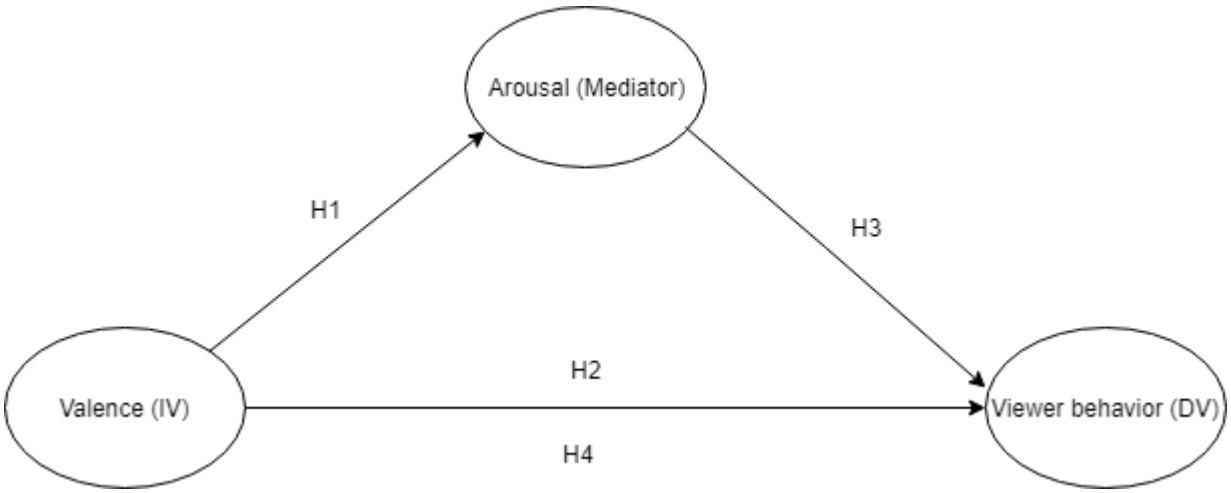

Fig. 4. Conceptual framework.

As can be seen from the graph, arousal here is shown as a mediating variable. It was discussed in a previous section of this research paper how a distinction can be made between intended emotion in the form of emotionally valenced videos (the concept of valence) and felt emotion in the form of arousal. The UGT as well as the MMT state that, before a behavioral change can occur within an individual, the felt emotion within that individual has to be influenced first (Katz, Blumler & Gurevitch, 1973; Zillmann, 1988). This argument thus proves the necessity of having the concept of arousal as a mediating variable within the conceptual framework. The valence in video content is predicted to increase the levels of arousal within the viewer, which in turn is predicted to influence viewer behavior (Winter, 2014; Lang, Newhagen & Reeves, 1996). Given that the model presents a mediation effect, the fourth hypothesis consequently is the following:

H4: Arousal mediates the association of valence content of the video and the viewing behavior of the audience.

3. METHOD

In this chapter, the choices that were made regarding the design, implementation and execution of the research are explained. The chosen method, along with its advantages and disadvantages, is discussed first. Following the method, the sampling target group and procedure are explained in detail, after which the operationalization of relevant concepts will is presented. Each operationalization is discussed in correlation with the test(s) that were conducted on it. After every operationalization is discussed, a section about how the acquired data was cleaned and prepared for analysis is devoted in the current chapter. The chapter continues by discussing the reliability concerns of the research and what conditions make the tests that had been conducted reliable. Finally, the validity and ethical concerns are discussed and accounted for.

3.1. Research design

The first step of conducting the current research was deciding whether to conduct quantitative or qualitative research. The relevance of this research had always been to find subtle ways to subconsciously draw more viewers to one's videos. Qualitative research is conducted to gain an understanding of underlying reasons, opinions and motivations, as well as people's perceptions and experiences (Brennen, 2013). Usually exploratory in nature, qualitative research methods are used to uncover trends and generate hypotheses for future quantitative research. Additionally, these methods are used to discover patterns in thoughts and opinions. However, since this study aimed to test hypothesized causal associations, a quantitative approach, specifically the experimental method was deemed appropriate. The decision to gather quantitative data allowed the focus to remain on relevant aspects of viewer behavior: what video is being watched next, depending on the valenced video that was viewed prior to it (Matthews, 2010). The complete data collection and analysis processes are explained and argued for from chapter 3.4 onwards.

An online experiment was conducted for this research. Experimental research design is a method in which the researcher can implement an intervention; the

researcher manipulates one variable to provoke a reaction and to measure the extent to which it provoked the expected reaction (Matthews & Ross, 2010). Experiments are most often used when attempting to provide evidence for a possible causal relationship (Neuman, 2014). The experiment consisted of independent measures, also known as a between-groups design (Kirk, 2012). The main idea behind this experiment was to divide the pool of respondents in groups of three and expose each group to one of three separate conditions: the first group was given a neutral video to view (the control group, n0), the second group was given a negative video to view (n1) and the third group was given a positve video to view (n2). The groups who had viewed either the positive or the negative video were the experimental groups. The videos only differed from another in terms of their valence, while any other variable within the content will be accounted for. After watching the video, every respondent (regardless of the video shown to them) was shown the same three thumbnails, again with the same distinction in valence: one positive, one negative and one neutral thumbnail. It was vital to ensure that the respondents can only be influenced by the differences in valence, as that was what is desired to see reflected in the answers of the varying respondents (Matthews & Ross, 2010). Even though all the questions asked were the same for every respondent (regardless of the video shown to them), the video that was shown to them was randomized by the use of Qualtrics. Additionally, having a standardized set of questions for all three groups made it easier to quantify, analyze and interpret the received data. An exact overview of the questions that were asked can be found in appendix A.

For this research, it was convenient to conduct the experiment online: it is an easy way to conduct research in a standardized manner for all respondents; at the same time, a large group of people could be reached, making this approach both cost- and time-efficient (Matthews & Ross, 2010). As Youtube is the second most visited website in the world (Domocos, 2018), it is fair to assume that everyone with an internet connection knows Youtube. As so many people in the contemporary age know about and spend time on Youtube, the entire online population is well-suited to be a relevant respondent for this experiment. To ensure that the sample is as unbiased as possible, it was necessary to have enough respondents that participated in the experiment (Matthews & Ross, 2010).

3.2. Sampling

The way of distributing the experiment was done through a combination of simple random sampling as well as snowball sampling (Neuman, 2014). Simple random sampling is a sampling method in which every participant has the same odds of being chosen. The context of this research allowed anyone with an internet connection to participate, meaning that simple random sampling was the correct choice to gather participants. At the same time, participants were asked to also attempt to recruit others to participate in the experiment; snowball sampling is the name of the method of gathering participants, by requesting participants to recruit others to participate as well (Neuman, 2014). The experiment had been distributed online starting on LinkedIn, on which my network mostly consists of professional contacts. Through Whatsapp, I had contacted my personal friends and family and asked them to share the experiment with others outside of my network of contacts, so that I may avoid bias by approaching people from the same or similar background as my own. Additionally, other people were approached through Facebook groups, aimed at helping each other out by filling out experiments or surveys. Ultimately, 178 participants were acquired for this experiment. However, 18 of these participants did not finish the experiment, thus it was necessary to exclude them from the analysis. This means that the data analysis was conducted on 160, thus N = 160. At the time of data analysis, 32% of the participants had seen the neutral video (n0 = 51), 34% of the participants had seen the negative video (n1 = 54), while another 34% of participants had viewed the positive video (n2 = 55). The research sample consisted of 99 women and 61 men.

3.3. Operationalization

The concepts that have been discussed in the theoretical framework are emotion, valence, arousal and viewing behavior (Roseman, 2011; Russell, 2003). Good operationalization of concepts must enable a researcher to gather the data he or she needs to measure the given concepts (Matthews & Ross, 2010).

At the start of the experiment, the participants were asked about their gender and age, before they were shown one of the three randomly selected videos. The first reason for implementing these questions was to ease the respondents into the experiment; starting off with easier questions generally makes respondents feel more comfortable while taking part in experiments (Allen & Seaman, 2007). Secondly, attaining some background information on the respondents can help to possibly relate some results to demographic differences within a research sample, even if it is not the focus of one's research (Matthews & Ross, 2010). For that same reason specifically, it was decided to not include any other demographic questions.

After the introductory part of the experiment, one of three valenced videos were shown and the measurements of the important concepts began. This section of the method has been devoted to discussing the operationalization and measurement of each concept separately.

As *valence* only served the role of being an independent variable and is thus not measured in any way, it will be shortly explained before diving into the detailed operationalizations of the dependent variables. Valence was previously only defined as the direction of felt emotion: regardless of the intensity of said felt emotion (arousal), valence was either classified as positive or negative feelings. In the context of valence being an independent variable, the definition does not change. However, when referring to valence as an independent variable in the context of the three valenced videos, it is referred to as the valence that was implemented into these videos, with the intention to make the participants experience either positive, negative, or neutral (control) feelings.

3.3.1. Viewing behavior

As it was previously discussed when viewing behavior was first defined in this paper, the only viewing behavior that was focused on, was that of the viewer clicking on a video, after having already seen one. This particular viewing behavior was measured in two different ways: the likelihood to want to watch similar videos (*similarity*) and the likelihood to click on each of the three presented thumbnails (*thumbnails*). The discussed research from the theoretical framework seemed to collectively indicate that viewers are more drawn to negative content and would thus like to consume negative videos consecutively (Conway & Rubin, 1991; Bartsch & Viehoff, 2010; Katz, Blumler & Gurevitch, 1973; Zillmann, 1988). This trend also served as the basis for the majority of the hypotheses. It thus felt like a necessity to include a measure for similarity, as well as a measure for real-life examples (the thumbnails). Why these measures were also performed for neutral and positive thumbnails, was to establish a basis so that comparisons between groups could be made and thus conclusions can be drawn from these comparisons.

3.3.1.1. Similarity

Within the experiment, similarity was measured by asking participants to indicate their likelihood to watch similar videos on a five-point likert scale from *Very likely* to *Very unlikely*. Similarity was tested in correlation with two other variables: when the relationship with valence was tested, a one-way ANOVA was conducted; when the relationship with felt arousal was conducted, a simple linear regression analysis was conducted. As the purpose of the test was to find out if the likelihood to watch similar videos increased as the level of felt arousal increased, a simple linear regression had to be conducted (Pallant, 2013). Regression analyses are used to predict the value of a variable, based on the value of another variable. However, both likelihoods to watch similar videos and felt arousal had to be continuous variables and without significant outlier scores. As both felt arousal and similarity were measured on predetermined scales, no outlier scores were possible.

A one-way ANOVA is conducted to measure the significance of mean score differences between two or more groups (Pallant, 2013). The randomization within Qualtrics is what divided the total sample into three separate groups; each participant was only exposed to one video, not knowing about the existence of the other two videos. It's always important to look at the scores of the *Homogeneity of Variances* table within the output: if the p-values fall below the .05 mark, the one-way ANOVA cannot be used. Instead, a Kruskal-Wallis H test has to be conducted (Pallant, 2013). The Kruskal-Wallis H test must be conducted if 1) the dependent variable is measured on the ordinal or continuous level (e.g. by usage of a Likert scale); 2) if the independent variable consists of two or more independent groups; finally 3) the groups are measured separately and do not affect each other in any way (Pallant, 2013). As the three video groups were not exactly equal in number (hence why the values in the *Homogeneity of Variances* table were not significant), the non-parametric variant of the one-way ANOVA had to be conducted instead. The Kruskal-Wallis H test tests whether or not there is a significant difference between at least two of the tested groups, however the test itself does not specify which groups significantly differ in their means. To acquire this particular information, the Mann-Whitney U tests had to be conducted (Pallant, 2013). The Mann-Whitney U test is the post-hoc test of the Kruskal-Wallis H test and is very similar to the *Multiple Comparisons* tables one gets when conducting a one-way ANOVA.

3.3.1.2. Thumbnails

At the end of the experiment, participants were asked to rate on a 5-point Likert scale to what extent they would click on each of the three thumbnails (the neutral, negative and positive thumbnails). The same 5-point Likert scale that was used to measure for similarity, was used to measure this extent as well, again ranging from *Very likely* to *Very unlikely*. The possible relationship likelihood to click on each of the three thumbnails has was also tested using a one-way ANOVA and a simple linear regression analysis. To test the relationship with arousal, the one-way ANOVA was conducted; to test the relationship with video valence, the simple linear regression analysis was conducted (Pallant, 2013).

3.3.2. Arousal

The Activation-Deactivation Adjective CheckList (AD ACL) was made with the intention to measure arousal within viewers after viewing valenced stimuli (Thayer, 1986). As was defined earlier, emotion is seen as the direction of perceived feelings (valence) and arousal is defined as the intensity of said perceived feelings. Arousal is often distinguished between two main types of arousal: whereas *energetic* arousal is caused by a feeling of excitement, *tense* arousal is caused by perceived feelings of danger, real or imagined (Thayer, 1986). Both energetic arousal and tense arousal were measured by having participants indicate to what extent they feel certain moods. The specifics moods in question had been taken from the AD ACL, as well as from the Valence/Arousal circumplex model of mood adjectives (Thayer, 1986; Fedman, 1995).

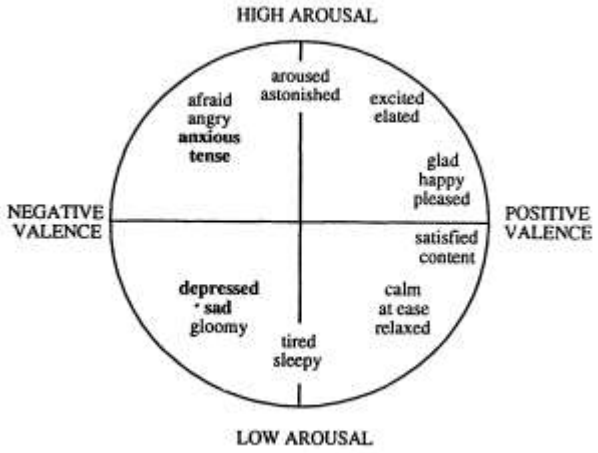

Fig. 5. Valence/Arousal circumplex model of mood adjectives. Based on figures 2 and 3 from Russell (1980). Adapted by permission (Fedman, 1995).

For each one of these mood adjectives, participants were asked on a 4-point scale to indicate to what extent any of the mood adjectives reflect how they are feeling after watching the randomly selected video they had just seen (Thayer, 1986). The options the participants chose from were: *Definitely, Slightly, Not applicable / Not sure, Definitely not*. The chosen mood adjectives for this experiment were *enthusiastic, depressed, angry, carefree, overjoyed, interested, scared, excited* and *guilty*. These mood adjectives were taken from both the AD ACL, as well as the adapted valence/arousal circumplex model of mood adjectives (Thayer, 1986; Fedman, 1995).

The words chosen were based on ease of understanding foremost; secondly, because several adjectives have very similar definitions (such as *carefree*, *calm* and *placid*) only one of these similar adjectives had been picked. By indicating the extent to which these adjectives applied to their moods, the respondents also indicated the arousal they found themselves in with these moods at that particular time (Thayer, 1986). As the mood adjectives are also portrayed in terms of their valence and arousal (the direction and strength of these moods, respectively) within the valence/arousal circumplex model of mood adjectives, felt arousal per mood could be determined effectively (Fedman, 1995). As every mood adjective had been measured with same answering options (*Definitely* - *Definitely not*), the scores could be quantified by categorizing the scores from 1 to 4. A factor analysis was conducted, to test if the thirteen mood adjectives are valid instruments to measure felt arousal within the participants. These thirteen items were put together into a factor analysis using Principal Components extraction with Varimax rotation based on Eigenvalues (>1.00), *KMO*= .92, $\chi 2$ (*N* = 160, 78) = 1673.43, $p < .001$. The thirteen items were appropriate to create a scale. The resulting model explained 69.34% of the total variance in felt arousal among the participants. To test the reliability of the mood adjectives, a Cronbach's alpha test was conducted. The scale for the arousal variable consisted of thirteen items, with a Cronbach's alpha of $\alpha = .54$. This means that the arousal variable has an insufficient reliability to predict consistent results, were an individual to participate in the experiment again under the same conditions. Removing mood adjectives would have only increased the Cronbach's α by a small amount and the scale would still have had a reliability score of < 0.7 only. The actual *arousal* variable for this experiment was created by counting all the scores the participants had filled out and averaging all 13 mood adjectives out into one single variable. As it was the intention for the variable to show higher scores for arousal the more aroused the participants had gotten, it was necessary to reverse the scores of some mood adjectives; these mood adjectives in question were *Depressed*, *Carefree* and *Guilty*. The reason for reversing these scores (meaning that *Definitely* had gotten a score of 1 instead of 4 and *Definitely not* was given a score of 4 instead of 1) was because these particular mood adjectives actually decrease arousal within a participant when their effect is more present (Fedman, 1995; Thayer, 1986). This does not

influence the valence of the felt emotion, but it was important to implement this adjustment before creating the *arousal* variable. This variable is what was used while conducting the relevant tests for it. The rotated component matrix for original items of the arousal variable (appendix H.2) shows that the items were divided in two categories: negative felt emotions as the first component and positive felt emotions as the second component. The positive emotions in the first component attain a negative score and the same logic applies to negative emotions in the second component.

The arousal variable was used in varying ways throughout this experiment. As was discussed in the previous segment of this chapter, arousal was the independent variable for measuring likelihood to watch similar videos, as well for the likelihood to click on each of the three thumbnails. Only once was arousal the dependent variable, which is when it was tested to what extent negative valence impacted felt arousal within participants more, compared to the participants that were exposed to positive valence (H1). To acquire the necessary results to test that hypothesis, it was only necessary to prove significance of mean scores between groups. A one-way ANOVA was thus conducted (Pallant, 2013).

3.3.3. *PROCESS*

Even though hypotheses 1, 2 and 3 all concern possible separate relationships between valence, arousal and viewer behavior, there was not yet a test implemented to collectively test the relationship between all three variables. As was mentioned earlier, arousal was used as both an independent and dependent variable throughout the varying conducted tests. In other words, arousal is a mediating variable. This is exactly what had been tested with H4: that valence in videos, through mediation of elevated levels of felt arousal, impacts viewer behavior. This complete test of the entire model is what is tested by the PROCESS test (Hayes, 2017). The PROCESS test is able to determine the effect of one or mediating variables, while also taking the effect of the independent variable on the dependent variable into account. Before being able to conduct this test, PROCESS demands that all variables have to be measured on a continuous scale, and that relationships between variables are assumed to be linear.

In order to test the significance of the complete model, it is necessary to show that 1) felt arousal is caused by the valence in the videos, 2) that the felt arousal is the independent variable for the viewer behavior and 3) that the valence in the videos loses its significance when arousal is included in the model (Hayes, 2017).

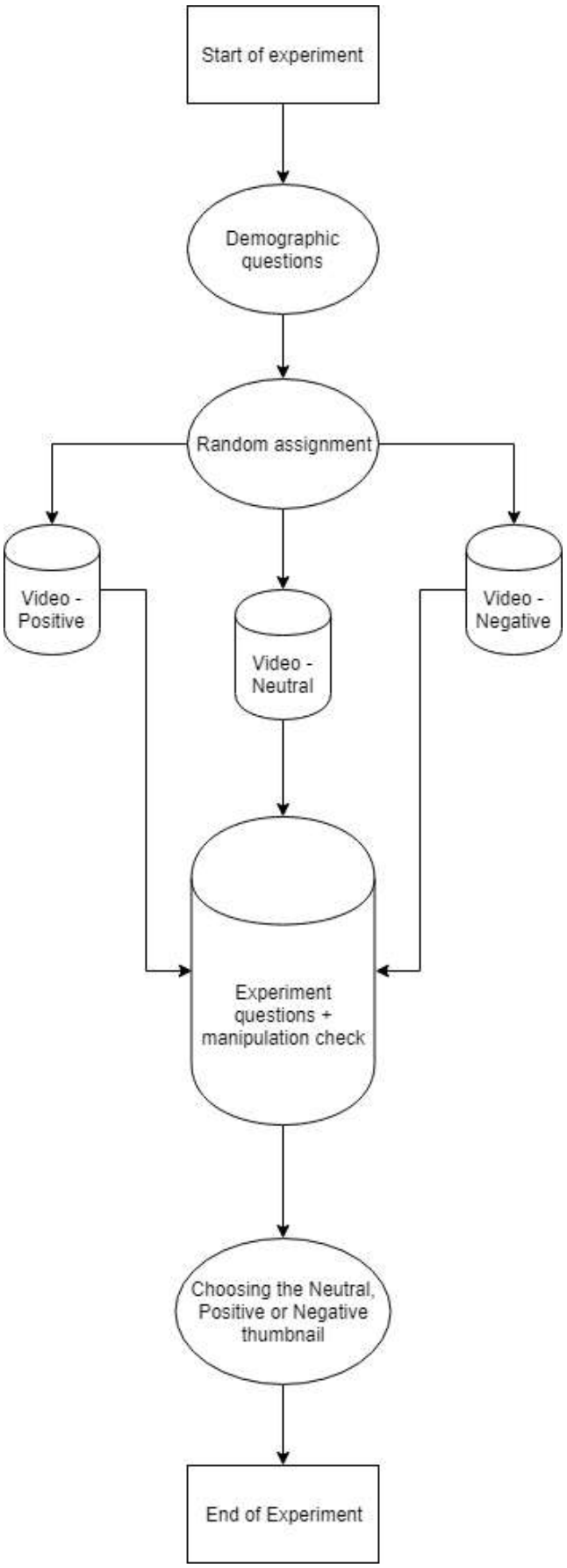
Start of experiment
Demographic questions
Random assignment
Video - Positive
Video - Neutral
Video - Negative
Experiment questions + manipulation check
Choosing the Neutral, Positive or Negative thumbnail
End of Experiment

Fig. 6. Experimental research design.

3.4. Data cleaning

After the data collection process ended, all the data from the Qualtrics experiment was compressed into a .sav file, then imported into SPSS.

Before the start of any type of analysis or calculation, the data needed to be organized, to make the calculations run as smoothly as possible. Firstly, the results of the responded were categorized depending on the video that was shown to them. After the initial organization of the data in these experimental groups, the results of the experiments that had not been completed were removed from the dataset. Each calculation discussed was done separately per group.

When participants were indicating their personal felt levels of mood adjectives, they had the option to (per adjective) indicate if they felt the mood *Definitely* (1)*, Slightly* (2)*, Not sure / Not applicable* (3)*,* or *Definitely not* (4). Directly after these indications, participants were given Likert scales to choose their answers from: *Very likely* (1)*, Likely* (2)*, Neutral* (3)*, Unlikely* (4)*,* or *Very unlikely* (5). These Likert scales applied to both the indication of likeliness to watch similar videos as well as the indication of likeliness to watch each of the three presented thumbnails.

It was decided early on in the research that higher indicated scores for each of the thirteen mood adjective items, would also result in the conclusion that participants were more aroused. This statement sounds redundant, but some of the thirteen mood adjectives would actually calm the participant down when the presence of that mood adjective was higher. It was thus necessary to reverse the scores of some mood adjectives; these mood adjectives in question were *Depressed*, *Carefree* and *Guilty*.

3.5. Reliability

The reliability of any given research is ensured by having the researcher ask himself/herself if their research can be replicated by other researchers, while using the same methods. In other words, to what extent these other researchers would get similar results or not (Matthews, 2010). Within natural sciences, if a research is deemed reliable, then other researchers are likely to attain the exact same results (granted they would use the same methods). As this research concerned people and more specifically, their emotions, attaining a high level of reliability is questionable by default. On the one hand, as was mentioned in the sampling section, people can be very different, which means their reactions to certain stimuli are generally very different as well (to the extent that they might be unpredictable on a general population scale). On the other hand, reliability can be ensured if two assumptions can be made. The first assumption is that, for the sake of the experiment, every person was subjected to the same exact situation: no participant was influenced by other factors prior to partaking in the experiment, which is naturally not a direct representation of daily experiences. The second assumption is that emotional content will have the same effect on most people. With the exception of those with mental disorders, emotions and stimuli should theoretically speaking work the same for every person, independent of culture or gender.

The reliability argumentation above applies to research concerned with emotions and cognitive processes as a whole. The rest of this section focuses on reliability concerns regarding each conducted test for this experiment. To test the reliability of any variable answered through a scale, a Cronbach's alpha test must be conducted. The Cronbach's alpha is used when multiple questions are used to measure the same variable (Pallant, 2013). The Cronbach's alpha is most often used to measure the reliability of questions with a Likert scale; however, as long as the measured questions all use the same answer scale, the Cronbach's alpha should still be applicable. The score of the Cronbach's alpha can range between 0 and 1; a Cronbach's alpha of 0.8 or higher is considered reliable. The closer the Cronbach's alpha approaches the score of 1, the more dependent the separate items in the variable are on one another. A Cronbach's alpha with a score lower than 0 may indicate that something is wrong with the data, or with the scale.

3.5.1. *ANOVA*

When comparing three or more independent groups, the assumption of Homogeneity of Variance needs to be tested. The Homogeneity of Variance assumption is assessed using the Levene's statistic for Equality of Variances. As the name implies, the statistic tests whether or not the variances between the sample groups are equal or not (Pallant, 2013). The necessity for this test of homogeneity lies in the fact that the sample groups were not all exactly equal in size. During the data collection phase, the experiment within Qualtrics was set up in such a way that each of the three videos was supposed to be shown an equal amount of times across all participants. Both the neutral and negative groups ended up with an equal amount of 50 participants, the positive group ended up having 56 participants. It was this discrepancy in group sizes that made the assessment of the homogeneity of variance necessary. In order to meet the assumption of homogeneity of variance, the Levene's Test statistic has to exceed the .05 value. If the value of the Levene's Test is .05 or below, the assumption is violated (Pallant, 2013). Were the assumption to be violated, then the researcher is required to run the Kruskal-Wallis test instead of the ANOVA. The following Kruskal-Wallis test is resistant against the violation of the assumption of the homogeneity of variance (Vargha & Delaney, 1998). The Kruskal-Wallis statistic is significant when the p-value is lower than .05. When this value is met, the Kruskal-Wallis test has its own subsequent post-hoc test: the Mann-Whitney U tests. These tests work very similar to the post-hoc test of the ANOVA and they thus determine between which groups significant differences were discovered (Pallant, 2013). These Mann-Whitney U tests have the same value of lower than .05 applied to them in order for the statistic to be significant.

3.5.2. Simple linear regression

When interpreting the results of a simple linear regression, varying factors need to be paid attention to. Within the *Model Summary* table, the R^2 value indicates how much of the variation of the dependent variable is caused by the independent variable (Pallant, 2013). *R* can range from 0 to 1, with 0 there being no association and 1 indicating a perfect association between the independent variable and the dependent variable. Secondly, the Sig. value in the ANOVA table will indicate the statistical significance of the regression. As long as this value has a score lower than .05, there is a statistical significance.

3.5.3. *PROCESS*

PROCESS provided the test for the entire mediation model (Hayes, 2017). The effect of the independent variable (valence) on the dependent variable (viewing behavior) with the mediator (arousal) included in the model was tested.

Each of the three steps (see chapter 3.3.3, p.32) of the conducted test had their own coefficient (for the strength of the predictive power) and p-value (for the significance of the predictive power). At the end of the output it is visible that a Sobel test was conducted, which is used to test if the mediation model as a whole is significant. Both the p-values for the separate tests and for the Sobel test have a significance level of $p < .05$ (Hayes, 2017).

3.6. Validity

The validity of any experiment rests on whether or not the experiment measures what it is supposed to measure. It was important to control for the confounding variables that may be present in this experiment and within the (randomly selected) sample (Neuman, 2014).

Discussing the sample first, there is no conclusive evidence yet in research that gender can have an impact on general viewing experience. Gender was thus asked for before the experiment began, so that perhaps any major patterns between the two genders could have been discovered after the data collection phase. However, no significant patterns emerged from the acquired data.

Age is another variable that had been asked for, with the same reasoning in mind. The confounding variable of age had been controlled by making the video stimuli easy to understand for anyone, as well as not allowing any possible respondents under 18 years of age to participate in this experiment; ethical considerations forbid the research from impacting the moods (and possibly behaviors) of minors. This is an additional reason as to why the pilot-test was of significant importance, as it could show some minor faults within any parts of the experiment before distributing it to the actual sample (Matthews & Ross, 2010).

Another confounding variable could be the familiarity the general population has with the style of Youtube videos and thus the content that will be present in the stimuli. However, as long as the content within the stimuli was easy to follow, there should have been no problem with these stimuli as Youtube hosts literally all forms of content. The challenge of making the stimuli exactly the same while also having them be different in terms of positive, negative and neutral valence will always remain difficult. However, this variable was controlled for by having all stimuli revolving around the same topic, that topic being animals.

One final threat to validity of the experiment included the exclusion of possible respondents (due to excluding those without an internet connection), as well as experimental mortality, which occurs when individuals do not complete the experiment (Matthews & Ross, 2010; Neuman, 2014).

3.7. Manipulation Check

Because of the experimental nature of the research, it was necessary to include a manipulation check (Matthews & Ross, 2010). Manipulation checks are necessary as they are the instrument to check whether or not the participants were aware of the research purposes (and thus the intentional manipulation) during the experiment. If respondents found out what variable was being manipulated, then that awareness might have led them to change their answer(s); it would have made them biased and the answers received would then have been at risk becoming unnatural and thus unfit for analysis (as there can be no conclusions drawn from them). The question required the participants to indicate, for the video they had seen, which animal was the focus of the video. This question was implemented to make the respondents think that this research concerns memory and image retainment (if they had any suspicions at all). As each of the three videos focused on a different animal, getting this answer right would indicate that the respondent had paid attention to the video and was thus invested to some extent. Data analysis was conducted on the data of a total of 160 participants. From the participants of the neutral video group (n0), 96.08% answered the question correctly; 98.18% of the participants from the positive video group (n2) answered the question correctly; lastly, 100% of the participants from the negative video group (n1) answered the question correctly. The table for these results can be found in appendix H. These numbers indicate that almost the complete research sample had paid attention to the animals that were focused on within their respective shown videos.

However, in terms of determining if the participants really did perceive the valence in the videos, a manipulation check was not present; originally, it was believed that the aforementioned questions would be a sufficient manipulation check. Understandably, if there was no determining way of knowing if the valence in the videos was noticeable or not, the effects of the valence as a standalone factor cannot be

completely confirmed (Allen & Seaman, 2007); the possibility thus remains that another factor aside from the valence within the videos could have been an influencing factor for the participants their answers.

Upon recommendation, a pilot test with friends and acquaintances was conducted, to ensure the effectiveness of the manipulation before distributing the experiment (Matthews & Ross, 2010). All of the pilot test participants were convinced they had to pay attention to the animals shown in their respective videos. The pilot test was a crucial procedure, as it helped to improve the quality of questions in terms of their validity and ease of understanding. The figure below presents an overview of the design of the experiment:

3.8. Ethical considerations

Aside from the aforementioned partial exclusion of those possible participants who cannot make use of the internet, there were other ethical issues to keep in mind while conducting the experiment.

Anonymity was always preserved. As is the case with starting with easy demographic questions, it also helped the respondents to feel comfortable, with them knowing that their answers will never be able to be traced back to them. Respondents were also aware that they were free to leave the experiment whenever they pleased. Transparency and openness within the experiment caused them to feel at ease, thus the chances of them answering every question truthfully increased as well (Matthews & Ross, 2010). The introduction of the experiment clearly explained how their data will remain anonymous, that it will not be distributed to anyone and that they are free to exit the experiment when they feel like it.

Another reason why some respondents may feel excluded when participating in experiments, is if they are not able to fully understand each question. Including difficult language or jargon in questions may risk respondents filling in answers they did not mean, which in turn hurts the validity of the experiment as well (Matthews & Ross, 2010). Difficult language or any type of jargon was excluded to the best of the researcher's abilities.

Finally, due to the intentional manipulation of emotions, it was necessary to include the principle of minimal risk (Kopelman, 2004). Even though manipulating emotions is not considered to be a very ethical code of conduct, emotions were only manipulated to such an extent that it was not shocking or traumatizing to anyone, especially in comparison to the content that exists on Youtube already. This minimal risk principle also explained briefly in the introduction of the experiment.

4. RESULTS

This chapter focuses on the acquired results of the conducted experiment. The first section discusses the mean scores of the relevant question, to retrieve an indication of what patterns in the data can be discovered based on the data. The main section of this chapter presents each conducted test with its results separately. To test for the possible effect of emotionally valenced videos on arousal, a one-way ANOVA had been conducted; to test for the possible effect of arousal on viewer behavior, two regression analyses had been conducted; to test for the possible relation between emotionally valenced videos on viewer behavior another one-way ANOVA had been conducted. Lastly, to test for the mediation effects of felt arousal on the possible relation between emotionally valenced videos and viewer behavior, multiple PROCESS tests (Hayes, 2017) had been conducted. After discussing the appropriate results, the proposed hypotheses are either accepted or rejected. The outcomes of the hypotheses are then discussed in light of the overarching research question with the assistance of previously discussed literature. As was discussed earlier in the paper, most hypotheses required more than one test to be answered completely; the hypotheses that required two tests to be either accepted or rejected, were split into two sub-hypotheses.

4.1. Comparison of mean scores

To get an idea of the results that were encountered, this section briefly discusses the most notable differences between each video group, in terms of their likelihood of clicking on each of the three thumbnails.

Table 4.1: Mean scores for clicking on each thumbnail

Conditions	Neutral thumbnail	Positive thumbnail	Negative thumbnail
Neutral valenced video group	2.60	2.38	3.15
Positive valenced video group	2.79	2.48	3.73
Negative valenced video group	3.94	2.41	2.11

Looking at the mean scores for likeliness to click on each of the thumbnails (with *1* being very likely and *5* being very unlikely) the scores seem to be very average overall, at first glance: most means average out around the area between 2.5 and 2.7. This is somewhat surprising, as it was expected that people who had seen the negative video (n1) would be more likely to watch more negative videos (Fan et al., 2014), thus the mean score would turn out to be lower.

More extreme differences in scores can be seen when looking at the responses towards the negative thumbnail. It seems that both the positive and neutral steer towards the more unlikely option to click on the negatively framed thumbnail. As most mean scores mostly averaged out with a mean in the middle, not much else can be deduced from comparing these mean scores.

Both the H1 and H3 had been tested by conducting a one-way ANOVA (with accompanying Post-Hoc tests); the second hypothesis had been tested by means of regression analyses; the fourth and final hypothesis, H4, had been tested by means of several PROCESS tests (Hayes, 2017).

4.2. ANOVA and Post-Hoc Tests for the effect of Video valence (IV) on Arousal (DV) - H1

To test for the significance of differences of means between the valenced video groups and the felt arousal within the respondents, an ANOVA was conducted.

Table 4.2.1: ANOVA

	Sum of Squares	*df*	Mean Square	*F*	Sig.
Between Groups	12.312	2	6.156	66.871	0.000
Within Groups	14.453	157	0.092		
Total	26.766	159			

There was a statistically significant difference between groups as determined by the one-way ANOVA ($F(2,157) = 66.87$, $p < .001$). Additionally, a test for the

homogeneity of variances had been conducted, to test for the possible violation of equal variances between groups.

For the assumption not to be violated, the significance needs to surpass the .05 significance level ($p > 0.05$). However, for each group score of the Levene's statistic ($F(2,157) = 4,24$, $p = 0.016$; $F(2,157) = 3,83$, $p = 0.024$; $F(2,149,96) = 3,83$, $p = 0.026$; $F(2,157) = 4,50$, $p = 0.013$) this assumption was violated. It was thus necessary to conduct a Kruskal-Wallis test instead.

Table 4.2.2: Kruskal-Wallis H Test

Kruskal-Wallis H	73.502
df	2
Asymp. Sig.	0.000

Table 4.2.3: Mean Ranks

	Video groups	*N*	Mean Rank
Arousal	Neutral	51	108.08
	Negative	54	37.02
	Positive	55	97.62
	Total	160	

The Kruskal-Wallis H test showed that there was a statistically significant difference in mood adjectives between the different video groups, $\chi2(2) = 73.502$, $p < .001$, with a mean rank pain score of 108.08 for the neutral video group (n0), 37.02 for the negative video group (n1) and 97.62 for the positive video group (n2).

Table 4.2.4: Descriptive statistics of the Mann-Whitney U Tests

						Percentiles		
	N	*M*	*SD*	Minimum	Maximum	25th	50th (Median)	75th
Arousal	160	28.510	41.029	1.69	3.77	26.154	29.231	31.538
Video groups	160	2.03	816	1	3	1.00	2.00	3.00

Additionally, it was necessary to conduct Mann-Whitney U post-hoc tests, to determine which associations between the video groups are significant.

The neutral group was much more aroused (*N* = 51, Mean Rank = 74.86) greatly compared to the negative group (*N* = 54, Mean Rank = 32.25) The first Mann-Whitney U test determined that the difference in arousal between the neutral group and the negative group was significant: (*Mdn* = 29.321), *U* = 262, *p* < .001. Given that the neutral video was made specifically not to arouse, this result may seem odd at first glance. However, negative felt emotions such as depression or sadness can be quite high in presence, while very low de-energizing at the same time.

Once again, the neutral group seemed to be more aroused (*N* = 51, Mean Rank = 59.22), this time compared to the positive group (*N* = 55, 48.20). The second Mann-Whitney U test determined that the difference in arousal between the neutral group and the positive group was significant: (*Mdn* = 29.321), *U* = 1111, *p* = 0.064. However, as the test statistic is not significant, conclusive statements about the difference in arousal can not be made about this comparison.

Compared to the negative group (*N* = 54, Mean Rank = 32,17), the positive group (*N* = 55, Mean Rank = 77.42) was much more aroused. The third Mann-Whitney U test determined that the difference in arousal between the negative group and the positive group was significant: (*Mdn* = 29.321), *U* = 252, *p* < .001.

The hypothesis for these tests was that the participants who were given the negative video to watch, would feel more aroused than the participants from the other groups. Even though the association between the neutral and positive groups was not significant, both the neutral and positive groups turned out to have had higher levels of

arousal compared to the negative group. H1 is thus rejected. A possible explanation for this result is that negative moods more often fall in the lower end of the arousal spectrum within the arousal/valence circumplex model of mood adjectives (Feldman, 1995). Even though certain moods may have lower levels of arousal, they can still be just as present as moods that are associated with higher levels of arousal. For example, a person can be very depressed (and thus high in negative valence) and at the same time feel a very low level of arousal.

4.3. Regression analyses for the effect of Arousal (IV) on Viewer behavior (DV) - H2

In this section, the results of the conducted simple linear regression analyses are presented and discussed. Viewer behavior, the dependent variable, is the likelihood of people clicking on a recommended video after having seen one. This likelihood was measured in two different ways: by having participants indicate their likelihood to watch a similar video and by having them indicate their likelihoods on three presented thumbnails. Both ways had been given their own sub-hypotheses to make answering the main hypothesis easier:

- *H2a*: Increased felt arousal within the participant will increase the likelihood to want to watch similar content;
- *H2b*: Increased felt arousal within the participant will increase the likelihood to click on negative thumbnail.

The first section discusses the similarity measure, whereas the second section will discuss the measure for thumbnails.

4.3.1. The effects of felt arousal on likelihood to watch similar content

For the first measure of likelihood to watch a similar video (the similarity measure), a simple linear regression was calculated to predict similarity based on felt arousal within the viewers.

Table 4.3.1: ANOVA

Model		Sum of Squares	*df*	Mean Square	*F*	Sig.
1	Regression	7.034	1	7.034	4.404	0.037
	Residual	252.341	158	1.597		
	Total	259.375	159			

A significant regression equation was found ($F(1,158) = 4.40$, $p = 0.037$), with an R^2 of .027. The regression model is thus useful for predicting the likelihood to watch similar videos. Felt arousal within viewers is responsible for 2.7% of the variance of the likelihood to watch similar videos. This variance score is much lower than what was originally expected. Even though the model is significant, the effect of feeling aroused has only a minor effect compared to other factors that must contribute to the decision to watch similar videos. This outcome is not in accordance with consulted theory, as insights from the UGT and the MMT would suggest that felt emotion is an influential factor within subliminal decision-making (Katz, Blumler & Gurevitch, 1973; Zillmann, 1988).

Table 4.3.2: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	*t*	Sig.
1	(Constant)	1.101	0.704		1.565	0.12
	Arousal	0.513	0.244	0.165	2.099	0.037

Arousal, $b^* = 1.10$, $t = 1.57$, $p = .12$. Participants' predicted likelihood to watch similar videos is equal to $b^* = 1.101 + 0.513$. Participants' predicted likelihood to watch similar videos increased with 0.513 for each unit that the felt arousal rose as well. Thus, given that the likelihood to watch similar videos increased with increases in felt arousal, proves that H2a should be accepted. Even though the H2a should be accepted, the effect of felt arousal on the likelihood to watch similar content is only minimal.

4.3.2. The effects of felt arousal on likelihood to click on each thumbnail

For the second measure of likelihood to click on the neutral, positive and negative thumbnails, another simple linear regression was calculated: to predict likelihood to click on each thumbnail based on arousal within the viewers. Separate regression analyses had been conducted for each thumbnail.

Table 4.3.2.1: Model Summary for the Neutral thumbnail

					Change Statistics					
Model	*R*	R^2	Adjusted R^2	Std. Error of the Estimate	R^2 Change	*F* Change	*df1*	*df2*	Sig. *F* Change	Durbin-Watson
1	.126a	0.016	0.01	1.389	0.016	2.531	1	158	0.114	1.362

The first conducted regression analysis was done for the neutral thumbnail, to predict likelihood to click on the neutral thumbnail, based on arousal within the viewers. An insignificant regression equation was found ($F(1,158) = 2.531$, $p = 0,114$), with an R^2 of .016. As the regression model is insignificant, there is no use in discussing the unstandardized coefficients values.

Table 4.3.2.2: Model Summary for the negative thumbnail

					Change Statistics					
Model	*R*	R^2	Adjusted R^2	Std. Error of the Estimate	R^2 Change	*F* Change	*df1*	*df2*	Sig. *F* Change	Durbin-Watson
1	.217a	0.047	0.041	1.309	0.047	7.82	1	158	0.006	1.64

The second thumbnail that a regression analysis was conducted on, was the negative thumbnail. The regression analysis was conducted to predict the likelihood to watch the video behind the negative thumbnail, based on felt arousal within the viewers. A significant regression equation was found ($F(1,158) = 7.82$, $p = 0.006$), with an R^2 of .047. The regression model is thus useful for predicting the likelihood to click on the negative thumbnail based on felt arousal within viewers. Felt arousal within viewers is

responsible for 4.7% of the variance of the likelihood to click on the negative thumbnail. Arousal, *b** = 5.63, *t* = 7.73, *p* = .000.

Table 4.3.2.3: Coefficients table for the negative thumbnail

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	*t*	Sig.
1	(Constant)	5.629	0.729		7.727	0
	Arousal	-0.707	0.253	-0.217	-2.796	0.006

Participants' predicted likelihood to watch the negative video is equal to *b** = 5.629 – 0.707. Participants' predicted likelihood to watch the negative video actually decreased with 0.707 for each unit that the arousal rose as well.

Table 4.3.2.4: Model Summary for the positive thumbnail

Model	*R*	R^2	Adjusted R^2	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R^2 Change	*F* Change	*df1*	*df2*	Sig. *F* Change	
1	.156a	0.024	0.018	1.175	0.024	3.926	1	158	0.049	2.022

Lastly, the final thumbnail that a regression analysis was conducted on, was the positive thumbnail. The regression analysis was conducted to predict the likelihood to watch the video behind the positive thumbnail, based on felt arousal within the viewers. A significant regression equation was found ($F(1,158) = 3.93$, $p = .049$), with an R^2 of .024. The regression model is thus useful for predicting the likelihood to click on the positive thumbnail based on felt arousal within viewers. Felt arousal within viewers is responsible for 2.4% of the variance of the likelihood to click on the negative thumbnail. Arousal, *b** = 1.16, *t* = 1.78, *p* = .078.

Table 4.3.2.5: Coefficients table for the positive thumbnail

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	*t*	Sig.
1	(Constant)	1.161	0.654		1.775	0.078
	Arousal	0.45	0.227	0.156	1.981	0.049

Participants' predicted likelihood to watch the positive video is equal to 1.161 + 0.45. Participants' predicted likelihood to watch the positive video increased with 0.45 for each unit that the arousal rose as well.

The regression analysis, aimed to test the association between levels of felt arousal within participants and the likelihood of consequently clicking on the neutral thumbnail, yielded insignificant results. This was to be expected, as the neutral video was made not to be arousing at all.

The yielded results for clicking on the positive and negative yielded significant results. With regards to the positive thumbnail, the more aroused the participants were, the test indicated that they are more likely to watch the positive video. This finding is in line with the original expected outcome of the Mood Management Theory (Zillmann, 1988). Regarding the negative thumbnail, the test indicated that participants were less inclined to click on the negative thumbnail, the higher their levels of arousal were. In other words, arousal and clicking on the negative thumbnail exist in an inverse association with one another. It is thus clear that the H2b had to be rejected.

These results are both expected as well as unexpected. They are unexpected because the theory surrounding negativity would indicate that people enjoy escapism with negative content (Conway & Rubin, 1991). Additionally, theory states that the brain favors more negative content, as it is prioritized in the brain's memory and can be more easily recollected than positively valenced content and/or memories (Lang, 2000). Furthermore, the mental curiosity caused by the Disequilibrium Theory is applicable solely to the brain feeling uncomfortable and uneasy, which is a state of mind that is more easily achieved when an individual is confronted with negativity (Goldstein &

Naglieri, 2011). Lastly, similar to the explanation given when discussing the results of H2a, the low scores for the negative thumbnail could possibly be linked to positive valence generating more arousal within viewers; perhaps the more aroused individuals are, the more they seek more arousing content (Zillmann, 1988).

4.4. ANOVA and Post-Hoc tests for the effects of Video valence (IV) on Viewer behavior (DV) - H3

In the previous section (4.3), *arousal* was the independent variable (as well as the mediating variable). In this section, the valence of the videos is the independent variable. The dependent variable, viewer behavior, is similarly split up in the two measures of similarity and likelihoods of clicking on the presented thumbnails. This section follows the same structure as section 4.3.

4.4.1. The effects of video valence on the likelihood to watch similar content

To test for the significance of differences of means between the valenced video groups and the likelihood for participants to watch videos similar to the ones they had seen, an ANOVA was conducted.

Table 4.4.1.1: ANOVA for the mean comparison between video valence and similarity

	Sum of Squares	*df*	Mean Square	*F*	Sig.
Between Groups	37.090	2	18.545	13.098	0.000
Within Groups	222.285	157	1.416		
Total	259.375	159			

There was a statistically significant difference between groups, as was determined by the one-way ANOVA ($F(2,157) = 13.098$, $p < .001$). Additionally, a test for the homogeneity of variances had been conducted, to test for the possible violation of equal variances between groups.

However, for every score of the Levene's statistic ($F(2,157) = 7.24$, $p = 0.001$; $F(2,157) = 7.12$, $p = 0.001$; $F(2,151.751) = 7.12$, $p = 0.001$; $F(2,157) = 6.816$, $p = 0.001$) this assumption was violated. It was thus necessary to conduct a Kruskal-Wallis test instead.

Table 4.4.1.2: Kruskal-Wallis H test

Kruskal-Wallis H	22.712
df	2
Asymp. Sig.	0.000

Table 4.4.1.3: Mean ranks

	Video groups	*N*	Mean Rank
Similarity	Neutral	51	96.26
	Negative	54	88.94
	Positive	55	57.59
	Total	160	

The Kruskal-Wallis H test showed that there was a statistically significant difference in the likelihood to watch similar videos between the different video groups, $\chi^2(2) = 22.712$, $p < .001$, with a mean rank score of 96.26 for the neutral video group (n0), 88.94 for the negative video group (n1) and 57.62 for the positive video group (n2). Looking at these Mean Ranks, the neutral group is the most likely to watch similar videos, based on the valence of the videos.

Table 4.4.1.4: Descriptive statistics for the Mann-Whitney U tests

						Percentiles		
	N	*M*	*SD*	Minimum	Maximum	25th	50th	75th

							(Median)	
Similarity	160	2.56	1.277	1	5	2.00	2.00	3.00
Video valence	160	2.03	816	1	3	1.00	2.00	3.00

To determine which associations between the video groups are significant when testing for likelihood to watch similar videos, it was necessary to conduct Mann-Whitney U post-hoc tests.

The neutral group was only slightly more likely to watch similar videos (*N* = 51, Mean Rank = 55.51) than the negative group was (*N* = 54, Mean Rank = 50.63). The first test indicated that the score for likelihood to watch similar videos was greater for the neutral group than for the negative group; however, the Mann-Whitney U statistic for this association was not significant: (*Mdn* = 2) , *U* = 1.249.000, *p* = 0.397.

The second Mann-Whitney U test indicated that the score for likelihood to watch similar videos was greater for the neutral group than for the positive group. The participants who had watched the neutral video (*N* = 51) had a Mean Rank of 66.75, whereas the participants who had watched the positive video (*N* = 55) had a Mean Rank of 41.25. The test statistic also confirms this statement: (*Mdn* = 2) , *U* = 726.500, *p* < .001.

For the final Mann-Whitney U test, the negative group was more likely to watch similar videos (*N* = 54, Mean Rank = 65.81) than the positive group was (*N* = 55, Mean Rank = 44.38). The third Mann-Whitney U test indicated that the score for likelihood to watch similar videos was greater for the negative group than it was for the positive group: (*Mdn* = 2), *U* = 901.000, *p* < .001.

For this series of tests, there weren't any significant differences found between the neutral group and the negative group. Surprisingly, the results of the corresponding Mann-Whitney U post-hoc test indicated that participants from the neutral group were more likely to watch similar videos than people from the positive video group (n2). This finding already violates what the Mood Management Theory would predict, as the

positively valenced video was meant to have a stronger effect on the subliminal decision-making process (Zillmann, 1988). The most likely explanation for this outcome is that participants who had seen the neutral video may have thought that the video would build up to something more exciting, or that some of them were particularly fond of the elephants in that video. Furthermore, this is yet another surprising outcome, as the neutral video was not made to entertain. It was actually designed to not evoke any emotion within individuals at all. Additionally, the Mann-Whitney U post-hoc for the association between the positive and negative groups revealed that participants who had seen the negative video (n1) were more inclined to watch similar negative videos than people from the positive video group (n2).

Based on these results, H3a can only partially be accepted. Even though it is true that (when comparing the negative and positive groups) the negatively valenced content takes precedence over the positively valenced content, the neutral group was even more likely to watch similar content compared to the positive group. If the results of the association between the neutral and negative groups had been significant, then the neutral group would have statistically been more prone to watch similar videos compared to both sides of the valence spectrum. Why the participants who had seen the neutral video seemingly wanted to keep seeing more, is unsure. Perhaps the participants thought the neutral video to be a preview for a bigger, more extravagant video; in correlation with the implication of the Disequilibrium Effect, this could possibly make sense (Goldstein & Naglieri, 2011).

4.4.2. The effects of video valence on the likelihood to click on each of the three thumbnails

To test for the significance of differences of means between the valenced video groups and the likelihood for participants to click on each thumbnail, an ANOVA was conducted.

Table 4.4.2.1: ANOVA for the comparison of means between video valence and likelihood to click each of the three valenced thumbnails

	Sum of Squares	*df*	Mean Square	*F*	Sig.

Neutral thumbnail	Between Groups	0.829	2	0.414	0.211	*0.810*
	Within Groups	308.946	157	1.968		
	Total	309.775	159			
Negative thumbnail	Between Groups	18.193	2	9.097	5.374	0.006
	Within Groups	265.782	157	1.693		
	Total	283.975	159			
Positive thumbnail	Between Groups	0.358	2	0.179	0.126	*0.882*
	Within Groups	223.135	157	1.421		
	Total	223.494	159			

There was a statistically significant difference between groups, but only for the negative thumbnail, as was determined by the one-way ANOVA ($F(2,157) = 5.327$, $p = .006$). Additionally, a test for the homogeneity of variances had been conducted, to test for the possible violation of equal variances between groups. However, the following tests had only been conducted on the negative thumbnail, as it was the only thumbnail with a significant difference in group means. A Tukey post hoc test revealed that the likelihood to click on the negative thumbnail was statistically significantly higher after watching the neutral video. This is a finding that supports what the theory would predict: for individuals to want to watch negative content after watching something neutral, because of their need to see content that subliminally grabs their attention impulsively. (Zillmann, 1988). People who enjoy watching negative content are also more likely to seek out sensationalistic content (Katz, Blumler & Gurevitch, 1973). There was no statistically significant difference between negative and positive groups, nor between the neutral and positive groups.

These tests were implemented to test the possible association between watching valenced videos and consequently being influenced with regards to likelihood to click on

neutral, negatively and positively valenced thumbnails. Even though only the association between the neutral group and negative group was significant, conclusions can still be deduced from these results. As there are not many significant results to work with, the H3b can only be partially be accepted: the negative thumbnail did have the statistically significant upper hand compared to the neutral thumbnail. However, as there are no significant results from the perspective of the positive thumbnail, the scores of the negative and positive thumbnails cannot be accurately compared.

4.5. Testing the model: Results of the PROCESS test

Although hypotheses 1 through 3 have all been tested for significance, it was still necessary to conduct a test to find out if arousal is a mediating variable. PROCESS was made for the purpose to test if the entire conceptual model is one including a mediator. The structure of this subchapter is once again divided into two sections: the first section will present the results of the PROCESS test for the likelihood of participants wanting to watch similar videos, whereas the second section will present of the PROCESS for the likelihood of clicking on each of the three presented thumbnails.

4.5.1. The mediating effects of arousal on the likelihood to watch similar content

In Step 1 of the mediation model, the regression of video valence on the likelihood of wanting to watch similar videos, ignoring the mediator, was significant, b = -.23, $t(157) = -.23$, $p < .001$; $F(1,158) = 4.40$, $p = .037$, with an R^2 of .03. Step 2 showed that the valence of the videos on the mediator, arousal, was also significant, $b = .05$, $t(158) = 6.02$, $p < .001$; $F(2,157) = 11.50$, $p < .001$), with an R^2 of .13. Step 3 of the mediation process showed that the mediator (arousal), controlling for likelihood of wanting to watch similar videos, was insignificant, b = -.23, t(157) = -4.74, p = .961. Step 4 of the analyses revealed that, controlling for the mediator (arousal), the likelihood of wanting to watch similar videos scores was not a significant predictor of viewer behavior, b = -,23, $t(157) = -4,74$, $p < .001$. A Sobel test was conducted and found no mediation in the model (z = .05, p = .96).

It is clear to see from this output that our previously proven hypotheses connections are also verified here in steps 1 and 2. However, as soon as the mediation

effect is expected to come into play in steps 3 and 4, the tests unfortunately turn out to be insignificant. This in turn leads the model to be insignificant in terms of the mediating effect of arousal on the likelihood of watching similar videos. Thus, we need to reject H4a.

4.5.2. The mediating effects of arousal on the likelihood to click on each of the three thumbnails

4.5.2.1. Neutral thumbnail

In Step 1 of the mediation model, the regression of video valence on the likelihood of clicking on the neutral thumbnail, ignoring the mediator, was insignificant, *b* = .03, *t*(157) = .03, *p* = .572; *F*(1, 158) = 2.53, *p* = .114, with an R^2 of .02. Step 2 showed that the regression of the video valence on the mediator, arousal, was also insignificant, *b* = -.04, *t*(157) = -1.59, *p* = .11; *F*(2, 157) = .40, *p* = .670, with an R^2 of .01. Step 3 of the mediation process showed that the mediator (arousal), controlling for video valence, was insignificant, *b* = .03, *t*(157) = .57, p = .572. Step 4 of the analyses revealed that, controlling for the mediator (arousal), video valence was not a significant predictor of viewer behavior, *b* = -.10, *t*(157) = .02, *p* =.572. A Sobel test was conducted and found no mediation in the model (z = .42, p = .68).

As the neutral video and thumbnail were never meant to cause any sort of arousal within its viewers, it is no surprise that each test at every step turned out to be insignificant.

4.5.2.2. Negative thumbnail

In Step 1 of the mediation model, the regression of video valence on the likelihood of clicking on the negative thumbnail, ignoring the mediator, was significant, *b* = .11, *t*(157) = .11, *p* = .034; *F*(1, 158) = 7.82, *p* = .006, with an R^2 of .05. Step 2 showed that the regression of the video valence on the mediator, arousal, was also significant, *b* = -.07, *t*(157) = -2.8, p = .01; *F*(2, 157) = 2.54, *p* = .082, with an R^2 of .03. Step 3 of the mediation process showed that the mediator (arousal), controlling for video valence, was significant, *b* = .11, *t*(157) = 2.14, p = .034. Step 4 of the analyses revealed that, controlling for the mediator (arousal), video valence was a significant predictor of viewer

behavior, b = -.04, $t($157) = .03, p =.034. A Sobel test was conducted and found no mediation in the model (z = .22, p = .83).

In extreme contrast to the results of the PROCESS conducted for the neutral thumbnail, every test at steps one through four returned significant results. The only test that did not return significant results was the Sobel test, which is the determining factor to test for mediation in a given model. This result must confirm that there exist other factors that influence viewer behavior.

4.5.2.3. Positive thumbnail

In Step 1 of the mediation model, the regression of video valence on the likelihood of clicking on the positive thumbnail, ignoring the mediator, was insignificant, b = .03, t(157) = .03, p = .586; F(1, 158) = 3.93, p = .049, with an R^2 of .02. Step 2 showed that the regression of the video valence on the mediator, arousal, was significant, b = .05, t(157) = 1.98, p < .05; F(2, 157) = .39, p = .679, with an R^2 of < .01. Step 3 of the mediation process showed that the mediator (arousal), controlling for video valence, was insignificant, b = .03, t(157) = .54, p = .589. Step 4 of the analyses revealed that, controlling for the mediator (arousal), video valence was not a significant predictor of viewer behavior, b = -.12, t(157) = .59, p =.589. A Sobel test was conducted and found no mediation in the model (z = .44, p = .66).

The results of the PROCESS for the positive thumbnail are quite similar to those of the results for the neutral thumbnail. The test presented in step 2 was the only test that turned out to be significant.

Every PROCESS has returned insignificant results, when referring to the entire model being a mediation model. However, getting these insignificant results for all four of the conducted PROCESS tests is no coincidence: felt arousal is not a mediating variable for the connection between valenced videos and viewer behavior. H4 is thus rejected.

5. CONCLUSION

The aim of this research paper was to uncover a relation that possibly exists between valence within videos, felt arousal within individuals and consequent viewer behavior because of that felt arousal. The purpose for uncovering a relation like this was to create a starting point towards creating a scientific formula to creating online videos that have an enhanced likelihood to be successful in terms of view count. This outcome would significant implications for parties who aim to maximize profit through the platform. The paper started off by introducing the idea behind the research purpose, namely the seemingly growing presence of negatively valenced videos that had been doing well in terms of view counts on Youtube.

The theoretical framework introduced the main concepts that were focused on in this paper: valence, arousal, and emotion (Dasborough et al., 2008). Viewing behavior was the focus of the research as the dependent variable, having been defined one-dimensionally as the action of choosing a video to watch next, for the sake of feasibility of research. Valence was defined as either the positive or negative direction of felt emotion. Felt emotion then, was the definition of the arousal concept. Arousal was defined here as the strength of the felt emotion. The main theories that were used in the theoretical framework are the Uses and Gratifications Theory (Katz, Blumler & Gurevitch, (1973), Mood Management Theory (Zillmann, 1988) and the Disequilibrium Theory (Goldstein & Naglieri, 2011). These theories were mainly discussed in the light of the possible consequences of exposure to negative video content in comparison to the possible consequences of being exposed to positively valenced online content. Insights from these theories combined with insights from past research on emotional impact from visual stimuli were then related back to the online environment of Youtube, which combined formed the basis of this research paper.

The methodology chapter discussed the choice for the online experimental research design, the reasons for choosing snowball sampling and the operationalization of the main concepts of arousal, valence and viewer behavior. Additionally, each conducted test had been explained and argued for also especially in terms of what was hoped to achieve by conducting them. Furthermore, the data cleaning process within

SPSS is explained and argued for. The chapter is finalized by discussing the reliability, validity and ethicality of the conducted tests as well as for the experiment.

Within the research chapter, the conducted tests within SPSS were presented and interpreted for each of the four hypotheses. In the end, hypotheses 2, H3a and H3b were accepted; hypotheses 1, 2b and 4 ended up being rejected.

5.1. Answering the research question

To come to a definitive answer to the research question, this section focuses briefly on what every accepted and rejected hypothesis means for the outcome of this research.

The first hypothesis predicted that 1) increased valence in the videos would increase the levels of felt arousal within the participants and 2) that negative valence from the video would have a greater impact on felt arousal than positive valence would have. Even though no significant relationship was found between the neutral and positive groups, it was found that the participants from the positive group were more aroused than the participants from the negative group. H1 was thus rejected. The Mood Management Theory had already predicted that people seek out positive content to cope when being in a bad mood (Zillmann, 1988). However, given the trend that was noticed with all kinds of negative videos on Youtube doing very well in terms of views and engagement, along with the differences in how the average person consumes media compared to the era of television (Anderson & Rainie, 2012), it was expected that this behavior to seek out positive content to cope with bad moods might have changed over time. Additionally, Katz, Blumler & Gurevitch mentioned the notion of basic human intrinsic needs for television viewing (1973). These intrinsic needs of television viewing were escapism, sensation seeking or a combination of both (a person can seek escapism and sensation at the same time). These basic intrinsic needs are generally mentioned in accordance with the Mood Management Theory (Zillmann, 1988), when these basic intrinsic needs are motivators for individuals to seek out positive content. Conversely, thwarted intrinsic needs lead individuals lead individuals to seek out negative content for the same reasons. It was expected that these thwarted intrinsic needs could be brought out by having a part of the participants view the negative video.

The second hypothesis was split up into two sub-hypotheses, H2a and H2b. H2a predicted that increased levels of felt arousal within the participant would increase the likelihood for them to watch more similar content. This sub-hypothesis was accepted. However, the significant effect was only minimal; even though the H2a was rightfully accepted statistically speaking, the relevance of this particular outcome is questionable. H2b predicted that increased levels of felt arousal within the participant would increase the likelihood to click on the negative thumbnail. Thus, the scores of clicking on each of the three thumbnails for all three groups were compared and tested for their significance in differences. Even though it was found that there was a significant difference between increased levels of felt arousal and clicking on the negative thumbnail, the relationship between these variables is inverted: the greater the levels of felt arousal within the participant, the less likely they became to click on the negative thumbnail. Additionally, a significant relationship was found between increased levels of felt arousal within participants and the likelihood of clicking on the positive thumbnail instead. A possible theoretical explanation for this phenomenon, in light of the Uses and Gratifications Theory, could be the notion of seeking escapism versus seeking sensationalism (Katz, Blumler & Gurevitch, 1973): it is possible that the participants who had viewed the negative video were aroused to such an extent because of shocking imagery, that they sought escapism in the form of more relaxing content. Meanwhile, it is also possible for the participants who had viewed the positive video to want to seek out more of the content that had gotten them aroused. If they had gotten aroused from watching positive content, they had sufficient reason to seek out more similar content. It was thus necessary to reject the H2b. Interestingly enough, the acceptance of H2a and rejection of H2b may contradict each other to some extent: if an individual from the negative group is very likely to watch similar videos, they would be expected to also indicate a high likelihood to click on the negative thumbnail; however, the results of H2b indicate that this is not the case. This discrepancy was most likely caused by not being able to completely picture what a negative video looks like while indicating the likelihood to watch a similar video; it may have been hard for participants to picture what a ‘similar video’ looks like, as this question occurred in the experiment before the participants

were shown the actual three video thumbnails. This is a weakness within the order of the questions asked that should be accounted for in future research.

The third hypothesis was concerned with the direct relationship between video valence and viewer behavior. Similar to H2, this hypothesis was also split up in H3a and H3b. H3a predicted that increased valence in videos will increase likelihood to want to watch similar content, with negative valence taking priority over positive content. The negative group was indeed more likely to watch similar videos than the positive group, so H3a was accepted. It is very likely that, similar to how participants who had viewed the positive video wanted to view more positive videos, participants who had viewed the negative video apparently want to watch more negative content as well. It is important to note here that each participant was only shown one video while partaking in the experiment. When viewers are presented with new options to choose from, they are likely to opt for the choice that resembles that which they had just seen (if they had enjoyed the previously consumed content). Individuals generally do not enjoy putting in the time and effort necessary to find new things to enjoy; they are more likely to engage in active searching for new content when they are not satisfied anymore with the current content (Goldstein & Naglieri, 2011). Additionally, exposure to negative content may cause the viewer to react in immediate responses. Combining the higher tendency to react with immediate responses with the wide array of choices could very well explain why individuals enjoy watching the same or similar content. Another surprising element from this result was that the neutral group was found to be more likely to watch similar content than the positive group was, even though it was created to make it as unrousing as possible. This particular element can also possibly be explained with the same reasoning in mind. H3b predicted that increased valence in videos would increase the likelihood to click on the negative thumbnail. The results showed that only the relationship between the neutral and negative groups was significant. However, within this relationship, the negative thumbnail was clicked on significantly more. The very calm nature of the neutral video most likely caused the participants to choose more sensationalistic content. As the comparison with the positive group was not possible due to insignificance of test statistics, the sub-hypothesis can only partially be accepted.

Finally, the entire model as a mediation model was tested. Every conducted PROCESS test returned insignificant results and the H4 was rejected.

For the sake of repetition, the research question of this research paper was: *to what extent does valence in video content, mediated by felt arousal, impact the likelihood for viewers to watch videos with similar valence*? As for the mediating effect of arousal and thus the model as a whole, arousal caused by valence in videos does not impact viewer behavior. The valence in the videos did not increase the levels of felt arousal; another reason why the H1 was rejected was due to the result that participants who were shown the neutral video (n0) were shown to have higher levels of felt arousal than those who had seen the negative video (n1), despite the neutral video having had no arousing elements worked into it. However, as both H2a and H3a were accepted, it seems that the likelihood to watch negative content increases when that negative content is similar to what viewers had already seen. On the other hand, this statement can be countered when the participants were exposed to the thumbnail examples. It is thus concluded that there must be other factors responsible for the pattern of what type of online video content works for larger audiences.

5.2. Theoretical implications

This research paper contributed to the field of online media consumption by taking insights from older, established theories such as the Uses and Gratifications Theory (Katz, Blumler & Gurevitch, 1973), Mood Management Theory (Zillmann, 1988) and the Disequilibrium Theory (Goldstein & Naglieri, 2011) and using these insights to attempt to provide proof for the relationship between valence, felt arousal and consequent viewer behavior. Even though some (sub)hypotheses were accepted, conclusive proof of this relationship has not been provided as of yet. The tests that had returned significant results often only accounted for a small part of the total variance.

However, it is important to realize that, even though there must exits more prominent factors that determine consequent viewer behavior, felt arousal is not a factor that does not contribute to the (subliminal) decision-making process. The effects discussed in this research paper may be of small proportions, but they are additions to this particular research field. Additionally, the conclusions of this research paper open

up the discussion to the possible effects of other factors on different types of viewer behavior, as well as to possibly expand on the effects that emotional manipulation can have on viewer behavior / the (subliminal) decision-making process.

5.3. Implications for content creators

It was hoped that this paper would provide some valuable insights into the psychological workings of the brain, with the idea to subconsciously manipulate the brain and the subliminal decision-making process of the brain to attract new viewers and grab and retain their attention while watching the video of a content creator. It was hoped that this paper could be the starting point towards a creating formula to attract and retain viewership. One of the main insights that should be taken from this research, is that valence and arousal should not be the focus when creating the video. Too many of the proposed (sub)hypotheses have been rejected to be able to make conclusive statements on the necessity of incorporating valence and felt emotion into one's content creation strategies. On the other hand, it is also ill-advised to ignore these aspects completely. For example, it was discovered that negative content is very likely to increase the chance of an individual to watch similar content, because of the immediate response that is possibly triggered in combination with automated video suggesting systems and choice overload when watching negative content. Additionally, there exists a predictive power when analyzing viewers in terms of determining if viewers are seeking either sensation, escapism, or both (Katz, Blumler & Gurevitch), 1973). This is an idea that could even be further developed to become an aspect of advanced affect curving strategies (Hanjalic & Xu, 2005). It is recommended to use the insights on the possible effects of arousal and valence as a way to fine-tune one's videos to give these videos an edge over content creators who do not pay attention to felt arousal within viewers.

5.4. Limitations of research

The limitations of this research paper are to be discussed in this section. The main limitations that are to be discussed concern the wide range of emotions (section 5.3.1.), as well as the video stimuli (section 5.3.2.). Insights from this section will be used to provide researchers with suggestions for future research.

5.4.1. Emotional range

One of the most difficult aspects of this research was the wide range of mood adjectives that was worked with. Most of the hypotheses of this research directly concerned positive or negative (or neutral) emotions, as a whole. However, emotions are much more refined than being classified as either positive or negative. There can be huge differences between (for example) what it feels like to be angry or sad, even though both emotions are considered to be negative states. The same distinction applies to the range of positive emotions as well, as being excited and relaxed are two different positive states as well (for example). While classifying the emotions in either the positive or negative category was also an attempt to combat the complexity that arises when researching a wide range of emotions, it also contributed to the problem of oversimplification of felt emotions. In hindsight, the results of this research might have been more conclusive if the focus was put exclusively on negative emotions, such as the comparison between shocking and depressing content.

5.4.2. Video stimuli

As was stated in the Introduction chapter of this research paper, there exists an immense amount of content on Youtube and these videos can be about any topic at all. To attempt to account for this limitation, it was chosen to have the three stimuli revolve around animals. However, a factor that was not accounted for, was the effect that animals by themselves could have on the participants. Theoretically, the animals that were presented could have had separate impacts on participants as well; perhaps some animals were considered to be cute, make people upset, etc. The subjective associations participants might have had with certain animals could have impacted the answers they had given and may have thus influenced the results.

Additionally, it is important to note that there was no conclusive manipulation check for the extent to which the included valence in the videos was noticeable or not. This means that, within this research, there was no conclusive evidence that any result was caused completely by the valence in the videos. A conclusive way to determine the complete possible influence of valence-induced videos is thus recommended for future research.

5.5. Suggestions for future research

When future research will be concerned with researching the possible impacts of valence and arousal on viewer behavior, the first suggestion would be to limit the scope of the research: it is suggested to focus on certain specific emotions for research only. For example, an idea for researching the possible impact of negatively valenced videos on viewer behavior could focus on the differences between videos that would make participants angry and videos that are designed to make participants feel sad. The same reasoning can be applied when other researchers are interested in researching possible connections with viewer behavior and positively valenced content. The point here is that limiting the amount of emotions to research focuses the research by being able to make more detailed distinctions than positive or negative emotions and may thus allow future researchers to come to more specific conclusions and attain more detailed results.

Additionally, another idea could be to focus on a specific group of viewers, instead of on the entire global population (with an internet connection). There is a possibility that researching a specific group of enthusiasts (fan cultures, sports fans, etc.) may make finding differences in how people perceive certain emotionally valenced content easier and more feasible. Secondly, another suggestion for future research would be to focus on differences between population groups, who vary in age or educational background for example. There exist good chances that people of varying ages and varying educational backgrounds would enjoy different things. It would be interesting to see if any solid patterns on video viewer behavior could be deduced from differences in between relatively simple demographics. Making the scope of both the emotional range as well as the sample the research would be conducted more focused, might greatly enhance the feasibility of the research and trustworthiness of the results.

The last suggestion concerns expanding research on automated video suggesting systems, in combination with the specific effects that either positive or negative effect may have on individual viewers. The algorithms behind what videos are suggested to an individual are already extremely advanced and suggest videos on the basis of many calculations in the short time span it takes to load the suggested videos to the viewer. There must be many factors already included in these calculations within this

algorithm, but perhaps this algorithm can be expanded upon still. In the future it may perhaps be possible to implement a feature within algorithms of automated video suggestions that can detect whether or not a particular viewer is looking for content to get more aroused or more excited (sensation seeking), or whether or not a viewer is looking for content to escape his/her current mood at the time (or a combination of both). Having this feature or a feature similar to this idea implemented into an automated video suggesting algorithm like that of Youtube, would give online content creators the opportunity to implement this kind of information about their viewers to make more content that has a higher chance of being received well by their audiences.

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APPENDICES

A. Experiment

Introduction:

‘’Thank you for taking the time to take part in this experiment. My name is Karim Hussainali, I’m a student in Media & Business at the Erasmus University Rotterdam. The purpose of this experiment is to gain more insight into the viewing habits of internet users. The total time spent on this experiment should take no more than 4 minutes.

I would like to state up front that the results of this experiment are completely anonymous: at no point will you be asked about your identity. In this study, you will watch a video. You will not be subjected to an emotion that is highly unusual or different from what Youtube users would usually encounter on Youtube. However, if you do not want to continue watching the video or you no longer want to finish answering the experiment ,for whatever reason, please feel free to close the video or exit the experiment. You are free to exit the study anytime you want. This will not have any negative repercussions on your part. Please feel free to email the researcher if you have any questions/concerns about this study at 414333kh@student.eur.nl’’

Button: I have read and understood the paragraph and wish to proceed

Experiment questions:

1. What is your gender? *Male, Female, Other (textbox), Prefer not to say*
2. What is your age? *Textbox* (*participants will be taken to the end of the survey if they are less than 18 years of age*)

“You will now be shown a video of approximately 1 minute. For the best optimal way of viewing the video, please hit the **full-screen button** in the bottom-right corner of the video. After watching the video in its entirety you will be asked a few questions.”

- *I understand and wish to continue (checkbox)*

Video plays

3. What animal was being focused on in the video?

- *Elephants*
- *Sharks*
- *Monkeys*

4. In which continent did this video take place?

- *Africa*
- *Asia*
- *North America*

5. Indicate to what extent the emotions below applied to how you felt, after watching the video you just saw: *Enthusiastic, Depressed, Angry, Carefree, Overjoyed, Interested, Scared, Excited, Guilty, Nervous, Tense, Activated and Proud*

- *Definitely, Slightly, Not sure / Not applicable, Definitely not*

6. What did you think (in your own words) the video was trying to convey? *Textbox*

7. How likely are you to watch a similar video to the one you just watched?

- *Very likely, Likely, Neutral, Unlikely, Very unlikely*

8. Imagine you've just watched the video you saw on an online video platform (like Youtube for example) and there are three thumbnails of related videos are suggested next to it; Indicate, per thumbnail, how likely you are to click on it after having seen the video?

**Show thumbnails*, per thumbnail:*

- *Very likely, Likely, Neutral, Unlikely, Very unlikely*

End of experiment

B. Thumbnail scores per group

B.1: Neutral thumbnail

Groups	Very likely (= 1)	Likely (= 2)	Neutral (= 3)	Unlikely (= 4)	Very unlikely (= 5)	**Total**	*M*
Neutral video group	16	13	3	10	9	*51*	*2.60*
Positive video group	4	27	8	7	9	*55*	*2.79*
Negative video group	16	11	10	9	8	*54*	*2.11*
Total	*39*	*51*	*21*	*26*	*26*	*160*	-

B.2: Positive thumbnail

Groups	Very likely (= 1)	Likely (= 2)	Neutral (= 3)	Unlikely (= 4)	Very unlikely (= 5)	**Total**	*M*
Neutral video group	13	17	15	2	4	*51*	*2.38*
Positive video group	20	12	3	18	2	*55*	*2.48*
Negative video group	10	22	14	6	2	*54*	*2.41*
Total	*43*	*51*	*34*	*27*	*8*	*160*	-

B.3: Negative thumbnail

Groups	Very likely (= 1)	Likely (= 2)	Neutral (= 3)	Unlikely (= 4)	Very unlikely (= 5)	**Total**	*M*
Neutral video group	8	10	8	18	7	*51*	*3.15*
Positive video group	4	7	9	15	20	*55*	*3.73*
Negative video group	3	9	3	12	27	*54*	*3.94*
Total	*15*	*26*	*20*	*48*	*54*	*160*	-

B.4: Mean scores for clicking on each thumbnail

Conditions	Neutral thumbnail	Positive thumbnail	Negative thumbnail
Neutral valenced video group	2.60	2.38	3.15
Positive valenced video group	2.79	2.48	3.73
Negative valenced video group	3.94	2.41	2.11

C: ANOVA and Post-Hoc tests for the effect of Video valence (IV) on Arousal (DV)

C.1: ANOVA

	Sum of Squares	*df*	Mean Square	*F*	Sig.
Between Groups	12.312	2	6.156	66.871	0.000
Within Groups	14.453	157	0.092		
Total	26.766	159			

C.2: Test of Homogeneity of Variances

		Levene Statistic	*df1*	*df2*	Sig.
Arousal	Based on Mean	4.235	2	157	*0.016*
	Based on Median	3.826	2	157	*0.024*
	Based on Median and with adjusted df	3.826	2	149.96	*0.024*
	Based on trimmed mean	4.497	2	157	*0.013*

C.3: Kruskal-Wallis H

C.3.1: Kruskal-Wallis H - Descriptives

	N	*M*	*SD*	Minimum	Maximum
Arousal	160	2.851	0.41029	1.69	3.77
Video valence	160	2.03	0.816	1	3

C.3.2: Mean Ranks

Scale	Video groups	*N*	Mean Rank
Arousal	Neutral	51	108.08
	Negative	54	37.02
	Positive	55	97.62
	Total	160	

C.3.3: Kruskal-Wallis test

Kruskal-Wallis H	73.502
df	2

Asymp. Sig.	0.000

C.3.4: Kruskal-Wallis - Quartiles

		Percentiles		
	N	25th	50th (Median)	75th
Arousal	160	2.6154	2.9231	3.1538
Video valence	160	1	2	3

C.4: Mann-Whitney U - Descriptives

						Percentiles		
	N	*M*	*SD*	Minimum	Maximum	25th	50th (Median)	75th
Arousal	160	28.510	41.029	1.69	3.77	26.154	29.231	31.538
Video valence	160	2.03	816	1	3	1.00	2.00	3.00

C.4.1.1: Neutral group vs. Negative group

Mann-Whitney U	262
Wilcoxon W	1747
Z	-7.162
Asymp. Sig. (2-tailed)	0.000

C.4.1.2: Neutral group vs. Negative group - Mean ranks

Video valence	*N*	Mean Rank	Sum of Ranks

Arousal	Neutral	51	74.86	3818.00
	Negative	54	32.35	1747.00
	Total	105		

C.4.2.1: Neutral group vs. Positive group

Mann-Whitney U	1111
Wilcoxon W	2651
Z	-1.854
Asymp. Sig. (2-tailed)	*0.064*

C.4.2.2: Neutral group vs. Positive group - Mean ranks

Video valence		N	Mean Rank	Sum of Ranks
Arousal	Neutral	51	59.22	3020.00
	Positive	55	48.20	2651.00
	Total	106		

C.4.3.1: Negative group vs. Positive group

Mann-Whitney U	252
Wilcoxon W	1737
Z	-7.492
Asymp. Sig. (2-tailed)	0.000

C.4.3.2: Negative group vs. Positive group - Mean ranks

	Video groups	*N*	Mean Rank	Sum of Ranks
Arousal	Negative	54	32.17	1737.00
	Positive	55	77.42	4258.00
	Total	109		

D: Regression analyses for the impact of Arousal (IV) on Similarity (DV) and for Arousal (IV) on Likelihood to click on Thumbnails (DV)

D.1.1: Similarity - Model Summary

					Change Statistics					
Model	*R*	R^2	Adjusted R^2	Std. Error of the Estimate	R^2 Change	*F* Change	*df1*	*df2*	Sig. *F* Change	Durbin-Watson
1	.165a	0.027	0.021	1.264	0.027	4.404	1	158	0.037	1.415

D.1.2: Similarity - ANOVA

Model		Sum of Squares	*df*	Mean Square	*F*	Sig.
1	Regression	7.034	1	7.034	4.404	0.037
	Residual	252.341	158	1.597		
	Total	259.375	159			

D.1.3: Similarity - Coefficients

		Unstandardized Coefficients		Standardized Coefficients		
Model		*B*	Std. Error	Beta	*t*	Sig.
1	(Constant)	1.101	0.704		1.565	0.12
	Mood Adjectives	0.513	0.244	0.165	2.099	0.037

D.1.4: Similarity - Residuals

	Minimum	Maximum	*M*	*SD*	*N*
Predicted Value	1.97	3.03	2.56	0.21	160
Residual	-1.915	2.716	0	1.26	160
Std. Predicted Value	-2.824	2.238	0	1	160
Std. Residual	-1.515	2.149	0	0.997	160

D.2.1: Neutral thumbnail - Model summary

					Change Statistics					
Model	*R*	R^2	Adjusted R^2	Std. Error of the Estimate	R^2 Change	*F* Change	*df1*	*df2*	Sig. *F* Change	Durbin-Watson
1	.126a	0.016	0.01	1.389	0.016	2.531	1	158	0.114	1.362

D.2.2: Neutral thumbnail - ANOVA

Model		Sum of Squares	*df*	Mean Square	*F*	Sig.
1	Regression	4.883	1	4.883	2.531	*.114*
	Residual	304.892	158	1.93		
	Total	309.775	159			

D.2.3: Neutral thumbnail - Coefficients

Model	Unstandardized Coefficients	Standardized Coefficients	*t*	Sig.

		B	Std. Error	Beta		
1	(Constant)	3.88	0.773		5.018	0
	Arousal	-0.427	0.269	-0.126	-1.591	*0.114*

D.2.4: Neutral thumbnail - Residuals

	Minimum	Maximum	*M*	*SD*	*N*
Predicted Value	2.27	3.16	2.66	0.175	160
Residual	-2.059	2.73	0	1.385	160
Std. Predicted Value	-2.238	2.824	0	1	160
Std. Residual	-1.482	1.965	0	0.997	160

D.3.1: Negative thumbnail - Model summary

					Change Statistics					
Model	*R*	R^2	Adjusted R^2	Std. Error of the Estimate	R^2 Change	*F* Change	*df1*	*df2*	Sig. *F* Change	Durbin-Watson
1	.217a	0.047	0.041	1.309	0.047	7.82	1	158	0.006	1.64

D.3.2: Negative thumbnail - ANOVA

Model		Sum of Squares	*df*	Mean Square	*F*	Sig.
1	Regression	13.392	1	13.392	7.82	0.006
	Residual	270.583	158	1.713		
	Total	283.975	159			

D.3.3: Negative thumbnail - Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	*t*	Sig.
1	(Constant)	5.629	0.729		7.727	0
	Arousal	-0.707	0.253	-0.217	-2.796	0.006

D.3.4: Negative thumbnail - Residuals

	Minimum	Maximum	*M*	*SD*	*N*
Predicted Value	2.96	4.43	3.61	0.29	160
Residual	-2.834	2.037	0	1.305	160
Std. Predicted Value	-2.238	2.824	0	1	160
Std. Residual	-2.165	1.557	0	0.997	160

D.4.1: Positive thumbnail - Model summary

Model	*R*	R^2	Adjusted R^2	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R^2 Change	*F* Change	*df1*	*df2*	Sig. *F* Change	
1	.156a	0.024	0.018	1.175	0.024	3.926	1	158	0.049	2.022

D.4.2: Positive thumbnail - ANOVA

Model		Sum of Squares	*df*	Mean Square	*F*	Sig.
1	Regression	5.419	1	5.419	7.82	0.006

	Residual	218.075	158	1.38		
	Total	223.494	159			

D.4.3: Positive thumbnail - Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	*t*	Sig.
1	(Constant)	1.161	0.654		1.775	0.078
	Arousal	0.45	0.227	0.156	1.981	0.049

D.4.4: Positive thumbnail - Residuals

	Minimum	Maximum	*M*	*SD*	*N*
Predicted Value	1.92	2.86	2.44	0.185	160
Residual	-1.822	2.835	0	1.171	160
Std. Predicted Value	-2.824	2.238	0	1	160
Std. Residual	-1.551	2.413	0	0.997	160

E: ANOVA and Post-Hoc tests for the effect of Video valence (IV) on the Likelihood to click on each thumbnails (DV)

E.1: Descriptives of Thumbnails / Video groups

Group - Thumbnail	*N*	*M*	*SD*	Variance
Negative Group - Neutral thumbnail	54	2.1056	1.02247	1.052
Negative Group - Positive thumbnail	54	2.4074	1.03739	1.076
Negative Group - Negative thumbnail	54	3.9444	1.32347	1.752

Neutral Group - Neutral thumbnail	51	2.6038	1.53597	2.359
Neutral Group - Negative thumbnail	51	3.1509	1.30673	1.708
Neutral Group - Positive thumbnail	51	2.3774	1.13046	1.278
Positive Group - Neutral thumbnail	55	2.7857	1.2608	1.59
Positive Group - Negative thumbnail	55	3.7321	1.27195	1.618
Positive Group - Positive	55	2.4821	1.37499	1.891

E.2: ANOVA for Likelihood to click on each thumbnail

		Sum of Squares	*df*	Mean Square	*F*	Sig.
Neutral thumbnail	Between Groups	0.829	2	0.414	0.211	*0.810*
	Within Groups	308.946	157	1.968		
	Total	309.775	159			
Negative thumbnail	Between Groups	18.193	2	9.097	5.374	0.006
	Within Groups	265.782	157	1.693		
	Total	283.975	159			
Positive thumbnail	Between Groups	0.358	2	0.179	0.126	*0.882*
	Within Groups	223.135	157	1.421		
	Total	223.494	159			

E.3: Test of Homogeneity of Variances

		Levene Statistic	*df1*	*df2*	Sig.
Negative	Based on Mean	0.052	2	157	0.949

thumbnail	Based on Median	0.136	2	157	0.873
	Based on Median and with adjusted df	0.136	2	149.823	0.873
	Based on trimmed mean	0.122	2	157	0.885

E.4: Post-Hoc - Multiple Comparisons

Dependent Variable	Video groups					95% Confidence Interval	
			Mean Difference (I-J)	Std. Error	Sig.	Lower Bound	Upper Bound
Likelihood to click on the negative thumbnail	Neutral	Negative	-.807*	0.254	0.005	-1.41	-0.21
		Positive	-0.590	0.253	*0.054*	-1.19	0.01
	Negative	Neutral	.807*	0.254	0.005	0.21	1.41
		Positive	0.217	0.249	*0.659*	-0.37	0.81
	Positive	Neutral	0.590	0.253	*0.054*	-0.01	1.19
		Negative	-0.217	0.249	*0.659*	-0.81	0.37

F. ANOVA and Post-Hoc tests for the effect of Video valence (IV) on Similarity (DV)

F.1: Descriptives of Similarity scores

Video Groups	*N*	*M*	*SD*	Variance
Negative	54	2.7963	1.3086	1.712
Neutral	51	2.9623	1.32958	1.768
Positive	55	1.9464	0.94233	0.888

F.2: ANOVA of Similarity

	Sum of Squares	*df*	Mean Square	*F*	Sig.
Between Groups	37.090	2	18.545	13.098	0.000
Within Groups	222.285	157	1.416		
Total	259.375	159			

F.3: Test of Homogeneity of Variances

		Levene Statistic	*df1*	*df2*	Sig.
Video valence	Based on Mean	7.236	2	157	*0.001*
	Based on Median	7.122	2	157	*0.001*
	Based on Median and with adjusted df	7.122	2	151.751	*0.001*
	Based on trimmed mean	6.816	2	157	*0.001*

F.4.: Kruskal-Wallis H

F.4.1: Kruskal-Wallis H - Descriptives

						Percentiles		
	N	*M*	*SD*	Minimum	Maximum	25th	50th (Median)	75th
Similarity	160	2.56	1.277	1	5	2	2	3

Video valence	160	2.03	0.816	1	3	1	2	3

F.4.2: Kruskal-Wallis test

Kruskal-Wallis H	22.712
df	2
Asymp. Sig.	0.000

F.4.3: Mean ranks

	Video groups	*N*	Mean Rank
Similarity	Neutral	51	96.26
	Negative	54	88.94
	Positive	55	57.59
	Total	160	

F.5: Mann-Whitney U - Descriptives

						Percentiles		
	N	*M*	*SD*	Minimum	Maximum	25th	50th (Median)	75th
Similarity	160	2.56	1.277	1	5	2.00	2.00	3.00
Video valence	160	2.03	816	1	3	1.00	2.00	3.00

F.5.1.1: Neutral group vs. Negative group

Mann-Whitney U	1.249.000
Wilcoxon W	2.734.000

Z	-0.848
Asymp. Sig. (2-tailed)	*0.397*

F.5.1.2: Neutral group vs. Negative group - Mean ranks

Video valence		*N*	Mean Rank	Sum of Ranks
Similarity	Neutral	51	55.51	2831.00
	Negative	54	50.63	2734.00
	Total	105		

F.5.2.1: Neutral group vs. Positive group

Mann-Whitney U	726.500
Wilcoxon W	2.266.500
Z	-4.445
Asymp. Sig. (2-tailed)	0.000

F.5.2.2: Neutral group vs. Positive group - Mean ranks

Video valence		*N*	Mean Rank	Sum of Ranks
Similarity	Neutral	51	66.75	3404.50
	Positive	55	41.21	2266.50
	Total	106		

F.5.3.1: Negative group vs. Positive group

Mann-Whitney U	901.000

Wilcoxon W	2.441.000
Z	-3.689
Asymp. Sig. (2-tailed)	0.000

F.5.3.2: Negative group vs. Positive group - Mean ranks

Video valence		*N*	Mean Rank	Sum of Ranks
Similarity	Negative	54	65.81	3554.00
	Positive	55	44.38	2441.00
	Total	109		

G. Reliability Tests

G.1: Mood Adjectives

G.1.1: Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	*N* of Items
0.536	0.494	13

G.1.2: Item-Total Statistics

Items	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Enthusiastic	35.07	25.700	0.149	0.655	0.529
Depressed	34.13	20.437	0.617	0.789	0.398
Angry	34.16	19.780	0.616	0.825	0.388
Carefree	34.39	33.435	-0.491	0.575	0.660
Overjoyed	34.08	32.271	-0.412	0.748	0.642
Interested	35.05	26.677	0.109	0.338	0.535

Scared	33.84	20.841	0.667	0.761	0.397
Excited	34.06	31.097	-0.320	0.610	0.625
Guilty	33.89	21.773	0.613	0.574	0.420
Nervous	33.96	20.847	0.683	0.855	0.395
Tense	34.06	20.733	0.648	0.855	0.398
Activated	34.43	23.542	0.410	0.361	0.470
Proud	33.66	30.187	-0.271	0.341	0.594

G.2: Similarity + Likelihood to click on thumbnails

G.2.1: Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	*N* of Items
-0.020	-0.030	4

G.2.2: Item-Total Statistics

Items	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Neutral Thumbnail	8.62	4.627	0.016	0.087	-.063[a]
Negative Thumbnail	7.67	4.827	0.010	0.043	-.049[a]
Positive Thumbnail	8.84	5.697	-0.077	0.068	0.087
Similarity	8.72	4.958	0.014	0.064	-.055[a]

H. Manipulation

H.1: Animal Focus

Video groups	*N*	*N* that answered correctly
Neutral video group	51	49 (96.08%)
Negative video group	54	54 (100%)
Positive video group	55	54 (98.18%)
Total	160	157

I. Factor analysis

I. 1: Factor analysis for Scale: Arousal (N = 160)

Item	*Arousal*
Indicate to what extent the emotions below applied to how you felt, after watching the video you just saw:	
Enthusiastic	.63
Depressed	.90
Angry	.92
Carefree	-.71
Overjoyed	-.68
Interested	.72
Scared	.84
Excited	-.70
Guilty	.73
Nervous	.86
Tense	.90
Activated	.81
Proud	-.57
R^2	.70

Eigenvalue	7.12
Cronbach's α	.54

I.2: Rotated Component Matrix

	Components	
Items	1	2
Angry	.920	
Tense	.911	
Nervous	.906	
Depressed	.901	
Scared	.882	
Guilty	.878	
Carefree	-.708	.306
Overjoyed	-.679	.567
Enthusiastic	.629	-.540
Proud	-.489	.347
Interested		.757
Activated	.322	.745
Excited	-.545	.624