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Consumers' Appreciation of Humorous Marketing Communications

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Abstract

Humour is one of the most common appeals in marketing communications. Since the 1970's, over 42% of advertising appeals had a humorous intention. The trend has grown since then, especially with social media and newer forms of advertising. Over 91% of viral advertising, for example, is humorous. Despite advancements of research in the field, there is not yet a clear integration of the cognitive and emotional implications of humorous appeals, mainly because the field suffers from the lack of a general theory of humour. This thesis aims to overcome this gap by integrating cognitive and emotional models. The quantitative investigation based on the diary-study method of research has allowed the observation within and between participants responses. Over a 7 days shortitudinal study, 33 participants recorded a marketing message they found humorous (N=224), and another they did not found humorous, despite recognising the intention (N=226), over a 7-days period. Stimuli collected were quantified according to brands, markets, products categories, and media format using humour. The best fitting model resulting from Structural Equation Modelling (SEM) shows the concurrence of cognition and emotion in the case of successful humour; while its failure is determined by the emotive response, with the cognitive one resulting negative toward humorousness of the message and advertising liking. Regarding unsuccessful humour, this research offers a pioneering investigation, allowing a self-reported reason of the causes of humour failure. The latter analysis has allowed a coding of the reasons for unsuccessful humour, and their relative impact on both humorousness and message liking.

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Chapter 1 - Introduction

In August 2009, animal rights organisation, *People for Ethical Treatment of Animals* (PETA), erected a billboard in Jacksonville, Florida, with the slogan was *Save the whales. Lose the blubber: go vegetarian* (figure 1.1). Despite the message being well connected to the risks of unhealthy diets, and to the organization's objective of saving the whales, complaints about the body-shaming content forced PETA™ to take down the billboard and apologise (Goldstein, 2009).

Figure 1-1 - PETA's billboard invites viewers to adopt a vegetarian diet to save the whales and loose body fat. The ad was considered offensive for fat shaming and against the image of women. It was also reported as non-humorous by two participants (stimuli 7, and 96 of current research).

Creativity and divergent thinking are the main components of the elaboration of humorous content (Kellner and Benedek, 2017). The case reported in figure 1-1 clearly shows the elements of such creativity: the cartoony style, the use of the language, the script, as well as the double entendre between the whales and the overweigh woman. The appreciation of the humour and the message embedded in it are all but effective for the general market. The reasons for humour failure are not yet clear to science. Neither are those for humour success. Despite that, back in the 1970s 42% of the advertising relied on humorous appeals (Markiewicz, 1974; Kelly and Solomon, 1975). The trend has grown since then, especially with social media and newer forms of advertising. Reichstein and Brusch (2019) estimates that over 91% of viral advertising is humorous. Social media are a pivotal source for innovation of, and knowledge acquisition about, the product/brand (Nguyen *et al.*, 2015). They have also contributed to an increase of humorous marketing messages creation, since individuals are more likely to share content with an emotional appeal (including humour) (Yang and Wang, 2015). The creativity at the root of humour has become an index of creativity in social media sharing (Ashley and Tuten, 2015). While this process has been ascertained for successful humour, the study of unsuccessful humour has been left aside. We do not know what the consequence of failed humour is, neither what the expenditure in marketing communication creation is wasted each year due to failed humorous appeals. A greater insight into what determines the success, and the failure of humour could lead to

better implementation of humorous content, increased creativity and divergent thinking, as well as clearer communications of corporate identity.

1.1 - The context behind the increase of humorous appeals

The 1980s saw the decline of industrial-era advertising (mainly showing and explaining the product and its features). Messages took into account the role of consumers as sense-makers of the advertisement (Goldman and Papron, 1994), denoting a preference for congruity as attention gatherer (Ha and Hoch, 1989). The switch to humorous incongruity is further supported by sociocultural and technological developments. Consumption was no longer passively accepted (Firat and Venkatesh, 1995). The customer became the *sense maker* of marketing communications, especially with those new technologies that, since the 1990s, implemented the word-of-mouth with the *word-of-mouse* (Gelb and Sundaram, 2002; Xia and Bechwati, 2010). Enhanced software and apps now allowed consumers to modify contents or produce new ones to express approval or contrariety to the original message (Travis, 2001; Vanden Bergh *et al.*, 2011). They can interact with advertising in a fluid way by mixing it with other forms of communication. Advertisements targeting contemporary consumers must then appeal to their mental schemata, their knowledge, without neglecting the context in which the message is perceived. This explains why typologies of cultural forms more or less related to humour such as *irony, pastiche, playfulness and ephemerality* have become central to the advertising message (O'Donohoe, 2006). Furthermore, humorous contents are also a powerful defence against attacks from competitors aiming to tarnish the brand (Petty, 2009; Jean, 2011; Strick *et al.*, 2012; Boshoff, 2016).

Humour is an effective tool to avoid the problem of media saturation, without promising a superior performance, or a necessary differentiation. In other words, humour moves the competition beyond the mere offer of the product/service to a communicational level (Kavanagh and O'Sullivan, 2007). In branding humour can become a personality trait. One of the highest ways consumers and brands interrelate is at indexical level, meaning that the story of the consumer is factually (biographically) correlated to the brand (Schembri, Merrilees and Kristiansen, 2010). For this reason, brands embellish their own storytelling with humour (Megehee and Woodside, 2010) able to capture the imagination of consumers who become sharers of the brand's story on social media, along with their own indexical interrelation with it. Brand personality, in fact, goes beyond the psychological connection with the consumer and assumes socio-cultural components the consumer identifies with (Lee, 2013). The phenomenon is so intense that brand personality can be measured with general human personality

traits (Eisend and Stokburger-Sauer, 2013). This personification of the brand happens in the mind of consumers through imagination (Huang and Mitchell, 2014). Thus, the connection of the brand storytelling to real time facts becomes a moment in which the storytelling of both consumers and brands converges. In this scenario, humour as a creative element is a useful tool to constantly generate content appealing to the consumers (Santos, Gonçalves and Teles, 2023). Humour and drama in advertising help consumers in developing those warm feelings toward the brand (Júnior *et al.*, 2023) necessary to consider it a part of their own story.

Along with customers' direct interaction in the communication process, the media proliferation of marketing communication, and the increase of competition at a global scale, have also contributed in the shift toward humorous appeals (Sternthal and Craig, 1973; Madden and Weinberger, 1982). In more recent times, elements such as ecological concerns and wellbeing rethinking are fuelling anti-consumption philosophies and behaviours (Tucker and Melewar, 2005). This reduces consumption for some material goods, increasing interest toward experiential products (Maseeh *et al.*, 2022). In this optic, it is predictable that humour will play an even more pivotal role in enhancing products and brands with meaning, because it becomes a powerful tool to criticise consumerism and promote more ethical consuming behaviours. In this sense the ad reported in picture 1-1 is an early attempt to profess some of these ideologies even though, in the specific case, the humour does not achieve its goal.

1.2 - The role of humour in advertising and marketing communication

Social sciences have only paid attention to humour in recent times (Mulkay, 1988; Paton, 1988). Similarly, business studies have developed an attention to its application in advertising and branding in the second half of the 20th century (Núñez-Barriopedro, Klusek and Tobar-Pesántez, 2019). Sternthal and Craig (1973) elaborate one of the first reviews of literature on humour. They found inconsistencies and contradictions in the field that led the scholars to call for research. The trend has changed in the last few decades, since the decay of cultural biases on the topic (Zhang, 1996; Eisend, 2011; Crawford and Gregory, 2015). Today, the persuasive power of humour as an emotional appeal has been confirmed and widely accepted among scholars and practitioners. Hornik, Ofir and Rachamim (2016) classify advertising appeals as either emotional (sex, fear, and humour), rational (two-sided, comparative, and gain-framed), or metaphors. Humour is the most effective appeal after sex, when presented on its own. However, appeals often comes coupled. In this sense, sex and humorous appeals are the most effective (Hornik, Ofir and Rachamim, 2016). In line with the current change in

morals pushed by organised movements such as feminism, consumers are more likely to reject sex-based appeals, usually promoting the objectification of women (Stern, 1993). This creates the opportunity for humour to become the most effective communication appeal.

The progress research has made in identifying the nature of humour on one hand, and its benefits to business communication on the other, however, have not yet reached a saturation point. Its nature is still unclear at a philosophical level. Research is still missing a complete definition of humour (Olin, 2016). This limits its comprehension as a communication appeal, especially considering that approaches studying its production tend to exclude those about its perception and vice versa (Bell, 2007). Nevertheless, this philosophical call for research is even more actual in advertising and branding (Eisend, 2011; Crawford and Gregory, 2015), as well as other branches of business studies like retailing (Johnson, Keith; Ball, 2000), and organisational behaviour (Mesmer-Magnus, Glew and Viswesvaran, 2012), along with others.

1.3 - Criticism of humorous appeals

Very little has been written about the failure of humour, and even less about the failure of humorous advertising (Bell and Attardo, 2010). Dore (2018) offers a brief insight into unsuccessful humorous advertisements. They classify cases as linguistic or visual, according to the nature of their humorous content. Although it makes a considerable contribution by offering important examples, the research is limited to humour considered offensive by its audience. The criterion of sample selection is based on recorded complaints about the advertisements. Another contribution comes from cross-cultural studies. Gulas and Weinberger (2010) focus on the concept of *boundaries* (national, subcultural, political, ethnic, religious, demographic, etc.) that limit the success of advertising among different groups. Melewar, Bassett and Simes (2006) report the case of Peugeot using humour in a national campaign in France, while the advertising for the German market used a rational appeal. This shows that humour is limited by cultural elements, along with the knowledge of the product/brand advertised. However, so far there is very little literature investigating the risks of ineffective humorous campaigns. Linguistic studies are among the first ones to analyse the problem. Bell and Attardo (2010) identify seven levels causing a possible failure of understanding the humorous message (language processing, word, pragmatic, recognition of the humorous frame, incongruity of the joke, cultural appreciation capability, cultural repertoire to support the joke). The study, however, is focused only on linguistic humour (e.g., puns). Another limitation is the comprehension of humour only via semantic theories, therefore neglecting the affective and emotional angle. It identifies the coexistence of both

individual and cultural causes of humour appreciation. Bitterly, Brooks and Schweitzer (2017) analyse the problem through the lens of the Benign Violation Theory (BVT – further discussed in Chapter 1) and identify as causes of the failure of humorous messages their perception as malevolent or too benign, not interesting, or offensive toward the target of the humour, or its audience. They introduce the concept of interestingness, or relevance. However, Roberts (2016) argues that the BVT is *proscriptive* rather than *prescriptive* – therefore, limited to explaining the phenomenon but unable to predict it. They contextualise the problem of humour failure in the domain of morals and ethics. The latter position risks to limit the failure of humour, as already seen with Dore, to its offensiveness. Zuo (2020) analyses the problem using the advancement cognitivism has achieved in humour studies. They apply Relevance Theory, which considers both the receiver's cognitive and emotive background. The humorous message is elaborated by the interlocutor via understanding the *information* (speaker's informative intention), *implicated premises* (understanding of the structure of the joke, identified as *incongruity*) and *implicated conclusions* (that is, a synthesis of the correct information and premises with the understanding of the context). Despite a more precise definition of the cases when humour failure (and false perception) can happen, Zuo's analysis is also limited to the sphere of linguistic humour.

The use of humour in advertising is a growing trend, and even the well-known advertising executive David Ogilvy, facing the above-mentioned change in consumption culture, commented that humour was becoming a good tool for selling in the 1980s (Beard, 2005). However, the reasons for the success and failure of humour are still unknown. Without such knowledge, science struggles to determine threats and benefits of humorous appeals. One aim of the current thesis's is to identify different reasons for humour failure, and to quantify their impact on message likings.

1.4 - Objectives of the study and research questions

The first aim of the current research is to collect real market examples of humorous marketing messages. Examples should be collected by several individuals, to reduce biases, and to spot individual differences in humour appreciation. The classification, the coding, and the related descriptive statistic of these examples should focus on determining the following questions, along with multilevel statistical analysis:

What determines the success (or unsuccess) of humour?

Is there any case of humour that is successful for certain individuals but not for others?

Is there any case of multiple appeals associated to humorous marketing messages?

Is humour used to advertise high involvement product/brands?

Are there any gender, age, or educational level differences in humour appreciation?

Does relatedness of the humorous message affect the success of humour?

Despite classifying humour as an emotional appeal, Hornik, Ofir and Rachamim (2016, 2017) recognise that humour appreciation simultaneously interests several parts of the brain. This suggests that humour appreciation is not just an emotional process, but also cognitive, just like the metaphor appeal identified by the scholars. This research intends to answer this question by qualitative investigations of the material uploaded by the participants.

What makes a metaphor humorous?

What role do metaphors play in the appreciation of humorous marketing messages?

Is there evidence that different individuals find the same metaphor humorous for the different reasons?

Are metaphors related to the success/failure of the message?

What linguistic and mental processes do metaphors represent in humour appreciation?

Another aim of the current research is related to identify the role of emotions and cognitions in the appreciation of humorous marketing messages. These questions should be answered through statistical analysis (structural equation modelling) of the variables contemplated by the research:

What are the cognitive processes determining humour appreciations?

What are the emotional processes determining humour appreciation?

What are the social-cognitive processes determining humour appreciation?

Is there any interaction between emotion, cognition, and social cognition during the appreciation of humour?

What role does the individual sense of humour play in determining the appreciation of humour?

What are the within and between individual differences in humour appreciation?

What role do moods play in the humour appreciation?

Are the reasons for the appreciation of humour predictable, and thus suitable for strategic planning?

Considering that disparaging humour plays a key role as consists one of the main theories of humour:

What are the reasons for the appreciation of disparaging humour?

What are the processes of appreciation of disparagement?

The answer to these questions could lead to a broader definition of humour, and to suggest a way to link the literature already existing on the topic.

1.5 - Scope and relevance of current research

The current thesis aims to answer the above questions by focusing on the following points and observations. The role of metaphors in advertising, as in linguistic studies of humour, linking humour to creativity. However, there is not knowledge on why some figures of speech are humorous and some others are not. The role of emotions and cognition in determining the appreciation of humour have not yet been researched together. This problem is embedded in the general theories of humour that have opposite results. While the cognitive stream of theories focuses on cognitive incongruity, the emotional appreciation passes through the congruity of the content of the message to the mental schemata (i.e., values, morals, beliefs, knowledge, etc.) of individuals. A general theory of humour, or a proper definition of it, must necessarily merge these two seemingly incompatible faces of the same phenomenon.

To achieve these results, this thesis advocates the use of a diary study method associated to both qualitative and quantitative methodologies. It also allows observation of the phenomenon between different individuals, and within the same individual, because it allows repeated observation from the same participant.

1.6 - Structure of the Thesis

To answer the above questions, this research will start by reviewing the literature available on the topic. Given the dualism of the matter, chapter 2 will start reviewing the literature about the theories of humour studies. Although research has not yet come to a general theory of humour, the

identification of the main theories and their developments in time, and according to a multidisciplinary approach, will identify the instruments currently used in humour research and business studies of humour. The review of the literature shall continue analysing how social sciences have approached humour and shall focus on what are the limitations of the use of classical theories of humour in social sciences first, and in business studies after. This analysis will contribute to have a more specific view of the matter, and to spot the instruments necessary for current investigation. The review of the literature will thus identify the theoretical framework for the current research. It will describe the Elaboration Likelihood model as a paradigm of analysis of the perception of communicative content. Furthermore, it will introduce models of analysis of mental states that include emotions and cognition (Mendler's Incongruity-Arousal-Safety), which will be at the root of the investigation of current research. The chapter will continue with the description of the general model, the definition of the instruments of research useful to the investigation, and the proposal of the hypotheses of research. Chapter 3 shall describe the methodology suitable for the investigation. The epistemology of post-positivism will be adopted, and the diary study method, used in the thesis will be described and advocated. Chapter 4 will report the analysis of the data collected. Chapter 5 will describe the finding, critically linking them to the relevant literature.

1.7 - Conclusions

While the use of humour as a marketing communication appeal grows, research still struggles to identify threats and benefits of such use. Humour production remains limited to a creativity dimension that often fails to detect why humour fails. The point is that what we do find humorous is not always such for others. Humour studies needs a holistic approach. The current research aims to quantify both cases of humorous marketing messages and, in second instance, to describe the mental processes, cognitive and emotional, at the root of humour appreciation, because this is the only way to build a morel capable to identify the reasons for humour success. This step is pivotal to the generation process of humour and from a practitioner point of view, it is the only way to avoid the economic and image damages of unsuccessful and inappropriate humorous messages. The brand tarnishment of PETA caused by the campaign reported in picture 1-1, for example, is still strong, even after 14 years from the publication of the billboard.

To better understand why humour studies still lack a general theory or proper definition of humour, the next chapter will briefly synthesise the main contribute philosophy, linguistic, and psychology, along with other disciplines, have achieved on the matter of humour. After describing the main

theories of humour, the chapter will end with looking at the analysis of neurology of humour, where brain-imaging technologies have determined which sections of the brain are activated during perception of humour.

Chapter 2 - Literature review

This chapter analyses the relevant literature in humour studies, before describing the theoretical framework useful to the current research. The first section offers an overlook on the classical theories of humour. If focuses on the three main theories of humour and their development. This investigation helps on one side to identify tools important for analysing humour. The following section describes the application of these tools in social sciences, and business studies. A main contribution comes from psychology, that further points out the limitations of the classical theories of humour by suggesting new tools of analysis.

Business studies have applied the classical theories of humour with alternate fortune. The general trend is that cognitive theories only allow cognitive inferences, and same happens for emotional ones. Beside the identification of some moderators of humour appreciation, relevant research has not yet suggested a unified theory that connects emotions and cognition, nor has determined the reasons for success and failure of humorous advertising.

Starting from the definition of humour as a mental state (Berlyne, 1960, 1969), the current research uses as a theoretical framework the neurology of humour, cognitivism analysis of mental states and other aesthetic experiences (Mandler, 1982), the Elaboration Likelihood of Incongruity (Lee and Schumann, 2004), and Construal Level Theory (Trope and Liberman, 2010), that will lead to the description of the research model of current analysis.

2.1 - Relevant literature about the classical theories of humour

Across the millennia, conceptions of humour and laughter have been contradictive in western Europe. On one side humour was considered an expression of the lower classes, and of low intelligence (Bremmer and Roodwnburg, 1997; Forni, 2016). On the other hand, already in classical ages there were educated forms of humour, such as Greek comedy, and ancient Rome's satire. This opened to a cultural debate on the nature of humour. Some of the main theories of humour, as it will be seen in this chapter, were already formulated in ancient times. Christianity shows a lesser consideration of humour. Consequently, philosophy paid little attention to the topic in Middle Ages. Only in the late 18th century this trend changed and from the following century social sciences began to apply the scientific approach to the discipline seen in previous chapter. The three main theories that describe the phenomenon, known as superiority, relief, and incongruity-resolution, were developed from such

philosophers as Plato, Aristoteles, Hippocrates, Kant, Hobbes, Spencer, and Freud (the list is not extensive). For a more detailed analysis see Attardo (2005), Perks (2012), and Olin (2016).

This section will refer to the three main theories of humour as Disparagement, Incongruity-Resolution (I-R), and Arousal-Safety (A-S). These definitions have not been consistent over time. The concept of disparagement humour, for example, derives from the theory of superiority humour formulated by Plato. In this case, superiority humour theory has been applied to a specific typology of humour, rather than to every example of it. A-S theory is Berlyne's reinterpretation of physiology's Stress-Release theory, passing from psychoanalysis, and psychology. The main weakness of each theory is that they are descriptive theories, only describing the dynamics and mechanisms enacted by humour. Although none of these theories have managed to explain the phenomenon completely, each theory is still actual used by scholars (Attardo, 1994) to describe humour. The Benign Violation Theory (BVT) will be discussed as attempt to give a general theory of humour. The chapter will end by discussing neurology's advancement in understanding humour.

Before analysing the main theories of humour, it is important to trace the differences between humour and laughter. While humour seems to describe a cognitive process, laughter consists in the communicative process of humorous appreciation. As a communicative process, laughter can be faked (Gulas and Weinberger, 2010), and can be instigated also by non-psychic stimuli such as tickling (Polimeni and Reiss, 2006). Humour is here conceived as a stimulus either internalised or externalised through a smile or laughter, or even just a mental arousal.

2.1.1 - Superiority Theory

Superiority Theory is arguably the oldest theory of humour recorded in western cultures. In his dialogue Philebus 48a–50c, Plato (1925) analyses the comedy. He deduces that humour is generated by the acknowledgement that our own condition is better when compared to the misfortunes of others. Therefore, humour is generated by the sentiment of superiority. The theory has been widely used to explain certain archetypes of humourism (the clown, the drunkard, the miserable etc.) and tends to contextualise humour as a negative phenomenon used to condemn diversity (Anderson, 2015). From this, research shifted in the specular definition of *disparagement* humour to underline the aggressivity of such mechanism.

An early scientific attempt to prove the theory comes from evolutionist physiology. Andrew (1963) links laughter to the grin that primitive mammals show when engaging in fights. However, he seems to have neglected the lesson of physiologist Duchenne, who had already identified the bending of the

eyes as an authentic distinctive trait of humour and laughter, rather than the exposure of the teeth (Ekman, Davidson and Friesen, 1990). Humour is often considered a prerogative of human kind[1], and has been observed in primates (Gamble, 2001) in relation to activities such as play and challenge of the authority of the dominant male. There is not, however, any correlation to the grin in primates' expression of humour.

Over time, superiority theory has evolved in several ways. Morreall (1983) gives a more extensive analysis of the concept distinguishing three feelings of superiority:

- Sense of *ridicule*. Humour is caused by feeling superior in physical, intellective, or personal features: in this case, superiority by ridicule can cause positive feelings in the person object of the humour (e.g., compassion).
- Sense of *misfortune.* Humour is caused by the contrast between our own condition, compared to others' misfortune. In this case too, superiority can cause positive feelings in the person that is the object of humour (e.g., empathy).
- Feeling of *power.* This feeling is close to what is described in Hobbes' Leviathan: where humour comes when we are winning. This feeling can also be negative toward adversaries or people in general, according to the situation and the personality of people.

The analysis appears limited to identify different situations in which the feeling of superiority happens. It consists in a nomenclature rather than a taxonomic classification of different subcategories of humorous superiority. Sociology of humour pays attention to the ethics problem, giving the important dichotomy between hostile and non-hostile humour. Hostile humour can lead to pro-social outcomes or social empathy toward the subject or event matter of humour (Keltner *et al.*, 2009). The common misconception that humour should be good or bad is typical of ethics or moral discussions. However, in a scientific approach, concepts such as good and bad should be rejected, while the hostility/non-hostility should be detected in the intention of the sender and receiver's interpretation of humour. Following such nomenclature, Chan et al. (2016) prove that non-hostile jokes stimulate the parts of the brain known as ventromedial pre-frontal cortex (vmPFC), amygdala, midbrain, ventral anterior cingulate cortex, and nucleus accumbens (NAcc). Hostile jokes, on the other hand, stimulate the dorsomedial prefrontal cortex (dmPFC) and midbrain. In synthesis, Non-Hostile-Humour activates the part of the brain responsible for social emotion while Hostile-Humour activates the part responsible for social cognition (Chan *et al.*, 2016). Considering that the newer part of the brain, in an

[1] In *On the parts of animals* Aristoteles says, "The only animal who laughs is the man" (On the Part of animals, 3.10.673a.9).

evolutionary meaning, allows human to appreciate hostile humour, this suggests the idea that hostile attitudes enhance survival. Thus, the evolution of a hostile sense of humour is thus explained as the consequence of the complexity of human social bonding. However, the analysis that Chan et al. have done, does not contribute to define humour as a phenomenon. They often refer to the term of *incongruity* and *arousal* to explain the mechanism of humour and its psychological process (Chan *et al.*, 2016). Therefore, while Superiority Theory does give an important categorisation of a specific function of humour, it needs the other classical theories to explain the dynamics of the phenomenon. The analysis also offers a first clue for rejecting the concept of benign humour that will constitutes is the fundament for one of the most recent theories of humour.

2.1.2 - Incongruity-Resolution theory

Analysing several classics scripts, Perks (2012) finds traces of each of the three theories of humour already in antiquity. However, modern philosophers such as Kant and Hutchinson recall and develop the concept of I-R formalising it in modern philosophy (Olin, 2016). For a long time, incongruity remained an umbrella term, summarising several meanings. Only recently science has tried to define and analyse it. McGhee (1979, p. 10) defined incongruity as:

> something unexpected, out of context, inappropriate, unreasonable, illogical, exaggerated and so forth.

The theory does not specify what a humorous element is incongruous to. This is one of the main weaknesses of this theory that still stands currently. On the other hand, one of the merits of I-R theory is that it gives a clear description of some dynamics that ignite humour. According to Speck (1991), some scholars recognise the need of an Incongruity-Resolution structure for humour to be effective, rather than just the incongruity (non-sense humour). Evidence shows that nonsense humour is mostly appreciated by children up to the 12 years of age: since they have not yet fully developed their comprehension nor have a mature sense of humour (Piaget, 1962; McGhee, 1971b; Shultz, 1974b). As seen before the prefrontal cortex of the brain involved in humour appreciation develops during adolescence: while children can detect brands and their symbolism since the age of 3-5 (McAlister and Cornwell, 2010), from 11-12 years of age, they start to develop a full understanding of the role of advertising (Andronikidis and Lambrianidou, 2010), signing the definitive switch from informative advertising, appealing to younger children, to the persuasive role of the communication (Tarabashkina, Quester and Tarabashkina, 2018).

If the concept of *resolution* is easy understandable, the one of incongruity is quite arbitrary. It has been identified with unexpectedness or surprise, juxtaposition, atypicality and violation (Warren and McGraw, 2015), based on comparison of literature. The biggest limit of such theory remains the fact that I-R fails to explain what humour is. Attardo (1994) shows that much of the research that uses I-R theory ends up justifying the genesis of humour to a local logic of pun or a sort of para-logic of humour. This makes the theory insufficient to explain humour at an ontological level. The *Incongruity* is referred to the situation, the contingent of the humorous phenomenon itself. This theory misses the referent, the object of the incongruity. By the definition of the latter come interesting developments of the theory.

2.1.2.1 - Evolution of Incongruity-Resolution

The I-R theory also tries to describe what generates humour inside of our psyche, disclosing the structure of humoristic messages. Such observations can be found already in Freud (2002) who describes the mechanism of jokes as understanding a meaning different from the initial one (the one expected). In his *The Joke and Its Relation to the Unconscious,* he specifies that the purpose of a joke is the creation of pleasure, but this can also be hostile and aggressive. This further proves the coexistence of each of the three theories already known and used. Freud indirectly suggests the use of the universe of *meaning* as referent of the incongruity. Such a concept is shared by the Script-based Semantic Theory of Humour (SSTH) (Raskin, 1985b, 2008). It applies Incongruity-Resolution to linguistic studies. He identified the object of humorous incongruity with the universe of meaning and significance (semantic). Raskin's model uses the concept of *script* consisting in a schema, or frame. In linguistics it consists of the synonyms we use to define a word. This is possible because people's capabilities of interpreting a word, or a sentence (*semantic competence)* is organised in clusters of related information. When a word or a sentence is compatible with two or more scripts, the overlapping of the two scripts (incongruity juxtaposition) generates humour.

The SSTH evolves from verbal to a multidisciplinary approach with the contribution of Salvatore Attardo (Attardo and Raskin, 1991; Raskin, 2008) reformulated in the General Theory of Verbal Humour (GTVH). It enhances the SSTH by including analysis of other elements of communication. Outside the two or more scripts needed and the Script Opposition already familiar to the SSTH, the GTVH introduces, as presuppositions to humour, concepts such as *Logic Mechanism* (the connection between the two scripts in the joke), the *Situation*, the *Target* (of the joke), the *Narrative Strategy* (intended not only as linguistic structure such as dialogue, narration etc. but also as humour category) and *Language*. The theory importantly identifies humour as a communication phenomenon. Outside

humour studies, the SSTH evolves in the theory of ontological semantics (Nirenburg and Raskin, 2004) that gives a basis to the *disambiguation mechanism*: the process by which we attribute the most appropriate meaning to a word automatically (especially for native speakers) avoiding the natural ambiguity of the verbal sign. The application of ontological semantics to humour ends by investigating the concept of *sophistication* (Raskin and Triezenberg, 2003), intended as the quantity of semantic inferences of a sign. The lesser they are, the more sophisticated the link (and the humour). Furthermore Raskin (2008) at page 13 also proves that the more sophisticated the joke, the fewer people will understand it. This is because the highly sophisticated meaning will be culturally accessible to more educated or knowledgeable people – knowledge intended as conceptual framework in which the joke is developed, rather than a general concept of education.

The application of the ontological theory to humour also takes into account the computational and neural model (Raskin, 2002; Hempelmann and Hall, 2003; Hempelmann, Raskin and Triezenberg, 2006). The first elaboration of a computer based sense of humour was attempted by Suslov (Suslov, 1992a, 1992b). He elaborates a computer algorithm based on information processing. Due to speed of elaboration, that in biologic subjects determines survival (Suslov, 1992a), the process can create a malfunction quickly corrected by conscious processes. This computational I-R adds to the theory the important element of *timing*. Not all the *malfunctioning* generates humour, but only those that will need a cognitive discharge (emotional relief) that can lead to muscular relaxation (physiologic relief). Suslov's theory also goes beyond the linguistic dimension of Raskin by referring to images, rather than semantics, so as represented in the machine's computation and, similarly, in the brain's elaboration (Suslov, 1992a). He also explains why well-known jokes will not generate humour. The person (or computer) will know beforehand the presence of the two mutually exclusive images and will avoid the recall of the wrong one. However, this does not explain why repetitions of humorous messages can still be humorous. The timing, intended as the capability of the individual to identify the malfunction, is also related to the sense of humour. The slower the time, the more possible the creation of the malfunction (the subject will laugh at things rather than not find them funny) and vice versa. A process here described like Raskin's sophistication, with the difference that Raskin identifies the phenomenon from the symbolic, or semantic point of view. Suslov's timing reveals the cognitive and emotional action of its interpretation. This leads to the fundamental connection between humour and intelligence, subverting the misconception that humour is linked to stupidity.

The contribution of the recent development of I-R theory is pivotal for two reasons: first one that they identify the object of the incongruity with meaning (semantics or imagining of the machine), and second their explanation of humour often involves the concept of *relief* and *arousal*, typical of the

third theory of humour. In general, I-R explains the logic processing of humour. However, it fails to consider the emotional load that generates the feeling.

2.1.3 - From the Relief to Arousal-Safety theory

The relief theory was firstly formulated by Spencer (1860), who analysed the physiological dynamics of humour. He observed that during laughter, individuals release physiological tension via spasms of the diaphragm muscles. This physiological phenomenon is also communicated by a definite facial expression somehow related to smiling (Lafrance 1983). The physiological release observed by Spencer becomes psychological release in Freud. He considered humour and laughter as a release of psychological tension (Freud, 2002). Freud moved the attention on what generates humour to the mental dimension. By laughing, an individual releases stress generated by the humorous stimulus. More precisely, such stress appears caused by an incongruity. This could bridge at least two of the main theories of humour. In this sense, what generates humour is put in second order. The psychological theories of humour are often interpreted independently from other theories up to Mendler who suggested a common ground for the three main theories of humour.

The concept of relief evolves into the one of *arousal* in social psychology. The term is first introduced by Berlyne (1960) and further investigated by McGhee (1983). It consists of the state of wakefulness, either physiological, psychological, or both, calmed down by the acknowledgment of harmlessness of the arousing stimulus. Suslov's computational model seen above already considered a shift from unconscious to conscious interpretation as a fundamental element needed to generate humour. The success of such process is described by the Arousal-Safety (A-S) model. In relation to humour, the arousal change has an impact on the knowledge (collation), connecting the theory to both meaning and semantic. Relief theory has been useful to explain several anthropological aspects, such as black humour, or humour targeting taboo topics such as sex and death. Olin (2016) points at the problem that not every joke allows the necessary time to build a stress tension to be released through laughter. Arguably, the concept of *arousal* here is an important substitute to the one of stress, and overcomes such problem. Despite the critic, Relief, then Arousal-Safety theory explains the psychic process beyond humour. This leads to a classification of it as a mental phenomenon: Berlyne (1969) classifies humour as both a *mental state* and an aesthetic experience. Defining humour as a mental state establishes a dual nature, both cognitive and emotional, of the phenomenon, and, thus, it leads to associating humour to other aesthetic experiences such as colour perception, beauty, and play.

An interesting theory of humour comes from the association between humour and play. In sociology, Huizinga has identified *play* as the establishment of a predetermined set of rules that will define the action of the player for a given time (2002). There is a strict connection between play and representation of reality. Huizinga uses the concept of rules established by the game. Such rules are generally clear and different from the *social* rules we normally act on. In football, for example, a player cannot normally touch the ball with his own hands (except from the goalkeeper) even though this could be physically possible. Huizinga's rules are close to the symbolic world described by Goffman (1966, 1971, 1990). This *fantastic world* effect of play does not necessarily mean fantastic as never realisable, but rather as not completely real. Only at circa 12 years of age circa children develop the capability of adapting symbols to the fantastic or playful reality of the game (Piaget, 1962). This passage totally morrows the shift from the appreciation of nonsense humour to one based on the structure of incongruity-resolution (Rothbart, 1973; Shultz, 1974a, 1974b). This contradicts the findings of Gruner (1997), who, starting from the link between game and humour, concluded that superiority or disparagement theory is enough to explain any sort of humour. Instead, the association between humour and play suggests a way to keep the three theories together.

The association between humour and play has also generated a discrete amount of literature looking at the relationship in a scatological way. Humour has been considered a specific kind of play rather than formally associate to it through the common nature of mental states. Starting from Huizinga's *Homo Ludens*, McGhee (1971a, 1976, 1983) and Speck (Speck, 1991) interpret play as a suspension of the rules of reality. Fantasy is then a product of play, and so is the acting necessary for humour to be staged. However, while play ends when leaving the fantastic world, humour does not ever take us in such a world. Instead, it always recalls to reality. For Speck humour becomes an act of *playing at playing*: a *meta-play*, and, for this reason, always needing the receiver to switch from a process of reality assimilation to a dimension of play (fantasy assimilation) as observed already in relation to play (Piaget, 1962; McGhee, 1976). The fantastic world is somehow just an illusion broken by a strong remand (could be a relief or a resolution) to the reality of the communication, in relation to the object of the incongruity, this is constituted by the *rules* of the play. However, the concept of *rules* can be functional to a micro-sociological analysis of humour, but not to describe humour as a phenomenon *per se*. Linguistic theories of humour, counterargue the semantic nature of humour, while conceiving humour as strictly limited to social rule, this could exclude important forms of humour. Furthermore, playful, and amusing states, although associated to humour, are not strictly correlated, thus humour seems closer to the concept of funniness which, on the other hand, is not necessarily felt during the amusement and the playfulness (Roberts, 2016). This means that the mental states, based on play-amusement, humour-funniness, although strictly close, are indeed different.

2.1.4 - Other theories of humour

Some scholars address their attention not to humour as a phenomenon, but to domain-specific segments of humour or its narrow sources. This narrower view on humour has generated some interesting theories. A branch of humour studies correlated to the semantic studies sees humour as a figure of speech: a field of investigation common to cognitive linguistics and computational linguistics. Attardo (2005) starts from Chomskian generative linguistics that identifies metaphors as violation of rules (Krikmann, 2009). In this case, the Incongruity is related to the rules of speech. Giora (1995), and Fein and Schwartz (1998) focus on the innate humorous nature of *irony*. It involves the processing of two opposite meanings leading to a third one. Both the implicated and negated messages are processed first while the *salient* meaning is processed later than the negated one. The identification of humour with the figure of speech is strictly linked to the correlation between humour and aesthetic experiences too, such as beauty.

Another interesting field of investigation is comedy. O'Shannon (2012) analyses its dynamics, stressing on the nature of humour as a communication phenomenon. The scholar integrates several of comedy's branches in a general framework based on communication theory. Comedy is generated by the sum of all the situations the receiver is immersed in, each one activating simultaneously on different levels of awareness. This is based on the fluidity of the awareness in a communicative event. The receiver of the comedy will not only identify themselves with the reality of the story, but simultaneously will see their own reality of spectator in a theatre (or elsewhere), their own personality compared with the one of each character in the play. This creates the environment for the comedic information (defined by the author themself as *incongruity*) to produce incongruity with one or more of the co-existing situations. In this way the comedic joke triggers the humour (e.g., superiority, release, linguistic pun etc.). The author thus gives an interesting integration of the main theories of humour.

The relationship between humour and reality is investigated by Marteinson (2006). The scholar considers reality as a mental construct made from the blending of several elements (e.g., factual reality, social reality, self-consciousness, social identity etc.). The humorous element has the capability to create contrast between such realities, or even within one of them (for example a social reality can contradict another social reality). Humour is a way the subject resets the capability of social perception and simultaneously communicates it to the other members of society. This is known as Ontic-Epistemic Theory of Humour (OETC). It links the investigation to the epistemological nature of humour to complete the complex picture of such a phenomenon.

2.1.5 - The benign violation theory

McGraw and Warren (2010) formulate a theory of humour based on the integration of the three others that precede it. They identify the co-existence of the three theories also in non-humorous events such as the example of the love killed:

> Someone unintentionally killing a loved one would be incongruous, assert superiority, and release repressed aggressive tension, but is unlikely to be funny (ibidem, pp 1-2).

This proves that individually, the three theories explain parts of humour but, however, are missing other elements like primordial forms of humour such as tickling, and play-fight found in primates. The two scholars overcome this problem by identifying a specific typology of incongruity (see figure 2-1).

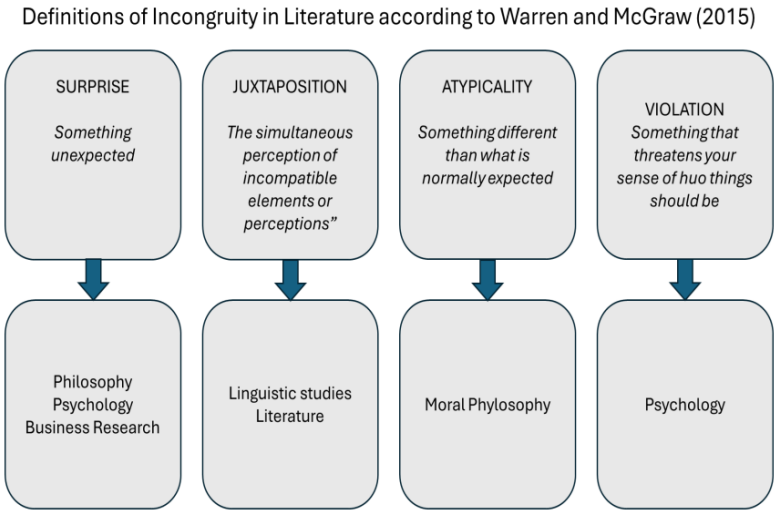

Figure 2-1 - Definitions of Incongruity across the literature as reported in Warren and McGraw (2015). The bottom side connects the definitions with the relevant literature topics as reported by the authors.

The violation is the incongruity that violates the norms (also rules or taboos) that expanded from the physiological state observed in primates into psycho-cultural violations (at this stage they identify the Superiority theory). Humour, though, happens only when the situation is perceived as benign and does not constitute a real threat, hence the release. For example, the funniness of the play fight is not accomplished when the aggressor does not seem to be playing or is not trusted. Together with the rule-breaching and the benignity of the situation, the third condition for humour generation is that an individual sees both the interpretations at the same time. This theory is defined as Benign Violation Theory (BVT) because it implies that the violation is an incongruity intrinsically perceived threatening. While the resolution of the violation is perceived as benign. It shows that human humour expands into a psycho-cultural dimension from a physiologic one. We feel humour when a situation, initially perceived as threatening (threat based on the incongruity of a phenomenon in relation to how we

expect the world should be) ends with a benign, positive and unharmful resolution. With their experiment the scholars also prove that benignity of the variation in a cultural context depends on the involvement of the individual perceiving the humour (the lesser the more humour is perceived) and their psychological distance from the norm violated (Warren and McGraw, 2015). Beside the attempt of holding together the three main theories of humour, the BVT has several weaknesses. It identifies the concept of *rules* as object of the incongruity. Although the authors also refer to them as mental schemata, there is no clear differentiation among the two concepts. Violation is defined as *something that threatens your sense of how things a should be* by Warren and McGraw (2015, p. 409).

2.1.5.1 - Limitations of the BVT

The definition BVT gives of humour cannot explain the humour paradox, so as effectively synthesised by Gulas and Weinberger (2010):

> Humour is a paradox. It is universal and it is individualised. It is found in every culture and history. Yet is specific to time and place. Laughter is social yet humour is personal. While humour is a natural human trait, response to specific humour executions is a learned behaviour (Gulas and Weinberger, 2010, p. 30).

The dynamics determining a violation can be as narrow as the within-individual differences. The analysis of the incongruity reported in figure 2-1, is based on different definitions and assumptions the literature has done around the concept of incongruity, often by the same author, rather than on an identification of features causing such differentiation (Warren and McGraw, 2015). The theory also fails to define why a violation is perceived threatening. The BVT does not open the *black box* of individuals' psyches to uncover what generates the sense of threat and, consequently, what allows the perception of humour, while by identifying the object of the violation with the *rules,* point out the sociological approach to what should be analysed as psychological. Finally, the theory implies a benignity of humour, excluding malignant forms such as dark humour, more correlated to certain personality traits and mood states (Perchtold *et al.*, 2019). On the other hand, a mother smiling (finding humorous) the cute drawing of a sun with a smiley face made by her son/daughter, would not find any violation, but rather an acknowledgment of her child's mental development progress. This means that the violation is intrinsic to the humorous message (i.e., the risk of the child not growing properly) or relevant to parallel thoughts to the humorous message itself.

Some other elements of the BVT are innovative and clarify specific traits of humour. Undoubtedly, the BVT is much closer to a definition of humour because the concept of violation points at an important

element: the inner psyche of individuals perceiving humour. Another achievement of the theory is the explanation of the sense of humour in terms of biological evolution. Evolutionists consider humour a fundamental trait of sexual fitness (Miller, 2011). The evolutionary advantage given by humour is also investigated by Hurley, Dennett and Adams (2011). They alleged that humour evolved as a capability of detecting mistakes in reasoning, or in *belief structures*. In this way, the three researchers shift the evolutionary importance of humour from a sexual selection to a proper advantage in survival. Evolutionism leads to conceive humour as a resource of brain functioning, and wellbeing, that supports intelligence and, consequently, natural selection. The latter is also evident at a linguistic level as we usually define humour on a clever-silly scales (e.g., witticism, zany humour, madcap humour etc.) or, if we do not understand the humour at all, it can be too *silly* or too *difficult*. This is because humour can surprise us a lot, a little, or not at all. The point here is that humour always activates our capacity of problem-solving. To support this latter statement, it is helpful to analyse the advancement from neurology on the matter of humour.

2.1.6 - Conclusions

The analysis of the three main theories of humour has shown that the I-R describes a cognitive process of formulation/perception of humour. It has linked the study of humour to linguistic and communication studies, and computational theories too. The A-S theory, on the other hand, remarks an emotional nature of humour. It is mostly used in physiology, psychoanalysis, and psychology. The superiority theory had a different evolution, and it is mostly useful to explain a specific typology of humour known as disparagement humour. While social sciences have applied different theories to investigate emotional and cognitive implications of humour, there is still a confusion between the sociological and psychological implications of it. This point is especially clear when trying to identify the object of incongruity, often mixed between *rules*, which are linked to sociological approaches (Speck, 1987; Huizinga, 2002; Warren and Mcgraw, 2015), and *mental schemata* (Mandler, 1982), which is a term peculiar to cognitivism. The review of literature continues with the analysis of the developments social sciences and business studies have advanced in the last few decades.

2.2 - Humour in social sciences.

Despite the lack of a proper definition, social sciences have discussed the effects and the implications of humour. The first disciplines to pay attention to such phenomenon were anthropology and ethnology. They found common traits of humorous manifestation across human cultures. Sociology of humour moved its first steps influenced by these sciences, while psychology developed more independently. Following growth of academic interest among social sciences, humour has also become a subject of business studies. While organisational behaviour focuses on the social implications of humour, marketing communications studies see a major interest in the analysis of humour perception, understanding and comprehension (Eisend, 2011), especially in the fields of advertising and branding.

The interest practitioners of marketing communication have paid into the topic will also be part of the analysis. During the 1980s, advertising agencies increased their trust in the effectiveness of humorous appeals. Grey literature shows how humorous advertisings and humorous branding has progressively conquered new markets and expanded to encompass topics previously considered taboo for humour (Dormon, 2016). Already in 1997, humour was used to advertise health-related products of non-life-threatening conditions (Wilke, 1997). Humour seems to meet the entertainment demand of the contemporary consumer because it is versatile and, above all, enhances consumers' memory for the advertisement itself (Hickling, 2002). Agee (2003) reports the case of Sleepmaker™ mattresses advertised in the Australian marketplace. The advertisement showed an elderly lady performing well as a cheerleader at a football ground. Her unbelievable athleticism was enabled by a good night of sleep. This advertisement was successfully remembered but the brand was confused with the Australian market leader Sleepyhead™. This highlights the problem of the competition between the memory of the advertisement's content versus that of the product/brand (Agee, 2003; Lindstrom, 2006). Such point has been the centre of attention for scientific research.

Humour also offers a good opportunity to enrich brand storytelling. Brands often engage in humorous rituals such as April Fool's Day (Kirby, 2013) to boost their image and despite the risks occurring in the adoption of humorous appeals. One of the major threats to the success of these forms of humour is their potential offensiveness (Blum and McClellan, 2006). On the other hand, brands can use humour to oppose market biases about themselves. Thus, the Skoda™ campaign *It's a Skoda. Honest* uses self-depreciating humour to overcome the historic bias about the product quality often encountered in the automotive market (Chalmers, 2006). The interest in humorous advertising was initially carried out by market specialists. Since the re-evaluation of humorous advertising in the 1890s, practitioners believed that such appeals increase attention. Despite this, the opinions about the positive role played by humour on message comprehension and persuasion still stand in academic research. Other scientific

insights, such as the tarnishment of the source credibility (Madden and Weinberger, 1984), were subverted. Business studies research on humorous appeals begins with testing such alleged benefits and threats humour seems to cause.

2.2.1 - Lack of a taxonomy of humour

The use of the descriptive theories seen in the previous chapter is one of the main limitations of humour studies. Although such theories offer a fundamental contribution to the understanding of humour and its classification, they fail to provide a full understanding of the origins, the causes of the independent variable(s) of humour. Despite some attempts to determine a definition and a taxonomy of humour (Speck, 1991; Leonidas, Christina and Yorgos, 2009; McGraw and Warren, 2010), the question remains unanswered. Crawford and Gregory (2015) identify that the problem is relative to the text analysis context. Taxonomies tend to confuse the cultural level of humour, its context, and the content and often are tailored *ad hoc* to suit the purpose of the research. Tsakona (2017) analyses the same problem and gets to similar conclusions. Their chapter suggests a classification of the forms of communication (jokes, comedy, cartoons, sitcoms, satire, stand-up, and memes). Although this does not result in a categorisation of humour, it is an interesting list of the forms of communication that express humour.

2.2.2 - Anthropology of humour.

Among social sciences, anthropology and ethnology were the first disciplines to analyse humour since the 19th century. Apte (1985) makes one of the first attempts to systematise the anthropology of humour. The starting point of such discipline is the comparison of studies, mainly ethnographic, to define a cross-cultural common ground. Such a task seems somehow difficult because the outcomes can appear contradictory (Oring, 2008). This can be seen in the study of joking relationships, the analysis of humour as a cultural trait, ritual humour, and in comparative studies of humour.

In anthropology, rituals represent human activities interacting with what is believed to be supernatural (Apte, 1985). Forms of humour-based rituals, such as carnivals or Halloween, appear in several cultures to allow freedom of behaviour (Apte, 1985; Gilmore, 1995; Oring, 2008). Humorous rituals permit deviation from the rules of the institution (e.g., religion), but they never cross the boundary of the authority itself and never deny its structure. Carnivals, for example, often contain non-carnivalesque moments to recall the superiority of the social rules, only temporarily suspended. Humorous rituals

are rather an occasion to unveil a return to the human dimension, taking distance from the authority, without contesting to it. In *Mistero Buffo,* Dario Fo (2003) describes plays, common in Christian Europe during the Middle Ages, based on the gospels telling of the Cana wedding. In this representation Jesus was often depicted drunk while inviting his mother to taste the wine he made himself out of water. From an anthropologic point of view, a human and fallible Christ was a challenge to the seriousness of behavioural rules imposed by religion, but also a reinforcement of Christian message. This humorous play shows a way out of the austerity of religious rules by exposing Jesus Christ's behaviour contradicting the rule himself (in this case gluttony). It is for this reason that Christ appears more human and therefore closer to the humanity of his religious followers. Besides its recall of the Gospels, the play does not result in blasphemy because the drunk Christ is not shown embarrassing himself. This latter element makes the play tolerable to the authority (the church) because it absolves the important function of making Christ more approachable to the lower classes of the time – especially considering that at the time Mass was in Latin: a language not comprehended by the masses.

Comparative anthropological studies record a more contradictory nature of humour that can either be aggressive or can promote social cohesiveness (Davies, 2011). Joke cycles, for example, even in a hidden way, can target certain fringes of society (Dundes, 1987). Radcliffe-Brown (1940) defines a *joking relationship* as a formalised conversation between two individuals or groups of individuals where one is permitted to make fun of the other (*asymmetric),* or both are culturally allowed to make fun of each-other (*symmetric)*. Despite its disparaging nature, the phenomenon is useful to relieve stress between tribes or within social groups (the example reported by the scholar is between the bridegroom and the mother-in-law as a humorous setting). Such perspective is shared by several studies analysing different contexts related to both micro and macro social levels. Douglas (1968) observes that there is a neat difference between common insults and the jokes in joking relationships. Through the balance of both, joking relationships manage to create an absence of social structure and the possibility to rearrange it. Joking relationships are strictly connected to *verbal duelling* (Abrahams, 1964; Dundes, Leach and Özkök, 1970; Hickman, 1979), and in sociology, to *social control* (Posen, 1974). In this context, jokes have the function of creating a bridge that facilitates fluidity of social relationships (Sykes, 1966).

The structure of a joke can become a cultural pattern. In stand-up comedy jokes are often built on recurrent conceptual frames (bridegroom/mother-in-law, marital life, ethnic differences among groups, etc.). Through this process, humour goes beyond the limitations of pair-to-pair context and aims to create connections among diversity (Handelman and Kapferer, 1972). Thus, humour undergoes a process of ritualisation that facilitates its recognition until it becomes a cultural pattern. It facilitates

groups' interaction, especially in uncertain environments (Pouthier, 2017) and if operated accordingly, also in the workplace (Bitterly, Brooks and Schweitzer, 2016). At a macro level, this ritualisation of jokes is strictly connected to the power humour has of changing the rules and/or confirming them at the same time.

Humour can also be a powerful tool that enhances cultural change. From this point of view, jokes are *anti-rites* that subvert the normal social order from within (Oring, 2008). This interpretation clearly links to the vision of the *Jester* (Fo, 2003) and the *Clown* in anthropology (Zucker, 1954, 1967). Zucker specifies that the Clown's humour production is based on acting in a grotesque way, somehow unexpectedly, while the crowd expects such behaviour. The same way to produce humour is shared by several kinds of humorous figures from antiquity to the medieval fools and jesters until the modern comedians (Palmer, 2003). Along with humour, another main outcome is the normalisation of such behaviours. In a phenomenological approach, the clown plays with meanings. His humour aims to make people aware of the relativeness of life. He uses humour as a looking glass to reflect the arbitrary nature of social rules (Zijderveld, 1982). It is clear how the Jester and the Clown often criticise the shared knowledge and point to the possibility of changing it. This explains the satirical function of social figures such as the Jester who, contrary to the mediatic image as court entertainer, in reality were often subversive individuals who criticised power structures through satire (Fo, 2003).

The link between anthropology and sociology of humour is clearly strong, since the forms of humour anthropology has detected have been confirmed by ethnographic studies in most human cultures, besides cross-cultural differences. The recurrence of such forms on one side, and the nature of humour as a communication tool capable to both create social cohesion and exclusion, even simultaneously, are the fertile ground from which sociology of humour has spread.

2.2.3 - Sociology of humour

Cultural humour is an institutionalisation of humour generated in social interactions. If humour is generated within the specificity of a group, it becomes a communication tool particular to the group itself. Only members of the group that share its culture can generate the understanding necessary to interpret the humour. In this case, humour generates social cohesion (Fine, 1979; Fine and Soucey, 2005). Such mechanism has also been investigated in work environments where humour is considered a communication tool useful to generate cooperation and identification within the team (Mesmer-Magnus, Glew and Viswesvaran, 2012; Lehmann-Willenbrock and Allen, 2014), as a relief from work-related stress (Nezlek and Derks, 2001) and psycho-social load generated by work (Lehman *et al.*,

2001). Humour is also used to create social control and social exclusion. Within the same group, jokes can make fun of transgression (and transgressors) of social order (Mulkay, 1988; Speier, 1998). Speier (1998) observes that rigidly controlled social groups (e.g. soldiers or prisoners) make fun of their superiors while still following their lead. By contrast, in real mutinies, humour ceases to exist. This happens because humour helps to externalise concerns about the situation of subordination without harming it. Thus, humour that reinforces the knowledge shared by the same social group is a social-control tool. Conversely, a member of the group can be excluded by not understanding the joke or even by being its target (Billig, 2001b, 2001a), like in the case of the power figure before the mutiny. In a work environment, such dynamics of humour have been investigated especially as leaders' humour, underlying both its potential risks and benefits (Lee, 2015; Pundt and Herrmann, 2015). Sociology of humour, however, fails to find the causes of humour as an instrument of social cohesion, control, and exclusion. Therefore, it is preferable to take a relativist approach to the functions and impact of humour on the social environment (Robinson and Smith-Lovin, 2001). In synthesis, sociology of humour is very effective at describing the different layers of the humour paradox by linking it to the different social groups (micro, and macro) that generate it.

Symbolic interactionalism attempts to link together different outcomes of social humour. It identifies a dynamic dimension of humour that becomes a tool to create the necessary ambiguity to renegotiate the relationship (Goffman, 1974). A group constructs a set of knowledge and beliefs to give meaning to reality (*frame).* Humour becomes a way of *reframing,* while laughter is a sign of its acceptance. Social interactionalism describes the role of the performer (or generator), and a group of reference that shares the frame (the knowledge) necessary to its understanding and, more importantly, an intentionality to the humorous message that could justify its different uses and outcomes. With symbolic interactionalism, sociology confirms humour as a communication phenomenon. Its contribution allows the recognition of a variety of social functions and contexts where it happens. It is important to underline the conceptual connection between *frame* and *mental schemata* identified as the object of the humorous incongruity.

Despite this fundamental contribution on classifying social uses of humour, sociology has not yet defined how and why these dynamics are activated. There is lack of knowledge of individuals' reception and interpretations of humour, and why different individuals react differently to the same humorous stimulus, even when they share the same culture and belong to the same social context. Somehow, the limitation of sociology of humour lies in the lack of knowledge of the dynamics activating humour appreciation within the human mind: the *black box* opened by psychology.

2.2.4 - Humour personality and humour styles: Psychology of humour.

Unlike sociology, psychology of humour develops independently from anthropology. Evolutionists, physiologists, psychologists and psychiatrists such as Darwin (1872), Spencer (1860, 1875), Duchenne (Ekman, Davidson and Friesen, 1990) and Freud (Freud, 2002) have all contributed to the foundation of the discipline. Humour is identified as a mental state activated by the *arousal* (Berlyne, 1960, 1969) that enhances mental processes and leads to recognition of something as *funny* (McGhee, 1971b, 1976, 1983), accordingly with the mental development (Piaget, 1962). The perception of funniness is conceived as a feeling of exhilaration that can cause responses such as *smiling* or *laughter* (smiling occurs roughly five times more often than laughter) (Ruch, 1993). Such physiological responses can also be detached by humour itself, as they are a social response to communication or a nervous reaction (fake laughter or fake smile). A better understanding of the effect of humour on attention comes from identifying the motivational role humour plays in the process of interpretation. While humour constitutes the reward, the attractor to accomplish such cognitive effort (resolution of the incongruity) depends on other characteristics of the humorous message. This is the relevance of the content the humorous message communicates before the humour itself. Goldstein, Suls and Anthony (1972) suggest the concept of *salience* of certain themes to the receiver that will cause the enhancement of their attention to the message. The salience also gives a better understanding of the relief connected to the relevance of the information the humour is carrying. However, *salience* fails to develop a robust argument to support a humour theory able to identify the independent variable(s) of the phenomenon.

Several self-reporting scales have been built in relation to humour and well-being, however they have been considered inadequate to the measure of humour as a personality trait (Martin, 2001). A more general questionnaire investigated how individuals use humour to enhance the self or their relationship with others, together with a benevolent or malicious intention. The outcome was four different humour styles of personality (Martin *et al.*, 2003):

1. Affiliative humour. This humour is used to enhance relationships and relieve social tension. This also includes the case of self-disparaging humour: by saying funny things about themself, the subject invites to not take themself too seriously.
2. Self-enhancing humour. This humour is used as a coping mechanism where it is possible to laugh at the incongruities of life.
3. Aggressive humour. This humour is generally witticism, sarcasm, disparagement and is used to hurt or alienate others.

4. Self-defeating humour. Humour is used against the self to enhance social empathy. In this way the self-defeating individual aims to defend himself from outside attacks or to better manage them.

The two latter traits are also related to pathologies of the personality such as low self-esteem or neuroticism (e.g., hostility, anger, aggression, etc.). However, applications of the theory have not had consistent results, because in some individuals the adoption of one form of humour over the other is a personal trait (Thorson and Powell, 1993). These results suggest that the humorousness of an individual is depending on their sense of humour.

Starting from the concept of individual sense of humour, Cline, Altsech and Kellaris (2003) argue that the success of a humorous message is dependent on an individual's need for humour. Their need for humour scale (NFH) has been successfully used in advertising studies and related to the need for cognition. Svebak (1974, 2010) develops a sense of humour questionnaires (SHQ) based on the individual differences on openness to ambiguity (meta-message sensitivity), preference for humorous situations, and emotional suggestibility (mirthful expression), with the latter resulting inconsistent for the elaboration of the scale. The Sense of Humour Questionnaire (SHQ), also in its short form (SHQ-6), has been widely used in humour research (Cann and Calhoun, 2001; Martin *et al.*, 2003; Mesmer-Magnus, Glew and Viswesvaran, 2012). The success of Sveback's sense of humour questionnaire is proven by the innumerable fields to which it has been applied (Svebak, 2010). There is strong evidence that sense of humour is linked to lower mortality from cardiovascular diseases and averagely longer lifespan (Romundstad *et al.*, 2016). The scale considers three dimensions (Svebak, 1996, 2010) such as the tendency an individual has in engaging in humorous situations and comic contents (L-items), and the general sensitivity an individual has in engaging with humorous messages (M-items) (Svebak, 1974). Another dimension consists in the social attitude of the sense of humour. The scale gives an important contribution on understanding the differences between individuals. The current research focuses on the different appreciation of humour within same individuals. So far, the sense of humour has been used as a static measurement in self-reported longitudinal studies with quite long legs (10 years circa) by the Swedish researcher. This current research will prove in which measure the sense of humour varies on a daily base.

2.2.5 - Classical humour theories in advertising and branding research

While the contribution of sociology, anthropology, and ethnology have already been linked to humour implication in organisational behaviour studies, marketing research focuses on the role of humour as

attention grabber. Therefore, a psychological view is privileged. As Spielman (2014) observes, research on humour in recent decades has suffered from the lack of a precise identification of which humour mechanism, or theory, enables humour comprehension. Spielman identifies such lack as the reason why research has not yet identified the scope of humour in advertising. The use of one or more of the process theories of humour, in fact, is very heterogeneous. Often academic papers do not refer to any humour theory at all, such as Chattopadhyay and Basu (1990b, 1990a), Cline and Kellaris (1999), Berg and Lippman (2001), Chung and Zhao (2011), Hansen *et al.* (2009), Khan and Khan (2013), Sabri and Michel (2014), and Nikfar, Abdolvand and Heydarzadeh (2016), among others. This strategy allows the identification of moderators on humour appreciation and effectiveness in advertising. However, the approach limits humour to be an independent variable self-reported by survey participants, sometimes selected from those who find the chosen stimulus humorous. This precludes the finding of why and what is considered humorous by individuals. Some other papers, instead, refer specifically to one of the main theories, such as disparagement theory (Denning 2006; Jean 2011), A-S (Jin and Villegas 2007), or a combination thereof (Spielmann 2014). I-R is used by others (Fugate 1998; Ali et al. 2012; Patterson et al. 2013), also in the specific form of Ruskin's SSTH (Ali et al. 2012).

There are some attempts to combine the three theories. Speck's taxonomy (1991) aims to measure the complexity of humour, but does not lead to a synthesis of them altogether. The model appears incomplete because it does not present any solitary case of disparagement humour, which is always combined with at least A-S (Speck 1991). Furthermore, only 25 of the 85 humour typologies identified by the taxonomy are effective. The same outcome is repeated in papers that use the model (Hatzithomas, Boutsouki and Zotos, 2009), and general results on humour complexity are inconsistent (van Kuilenburg, de Jong and van Rompay, 2011). Speck's taxonomy is also referred to by De Pelsmacker and Geuens (1999) but only in relation to humour and warmth of appeals. Vanden Bergh *et al.* (2011) and Brown, Bhadury and Pope (2010) only acknowledge the identification of different typologies of humour depending on each theory of humour common to Speck, without using it in their research.

2.2.5.1 - Between emotions and cognition

Overall, most researchers applying the I-R theory, such as Fugate (1998) and Krishnan and Chakravarti (2003), conceive humour as a cognitive process affecting rationality and consciousness. They usually share negative findings on the effects of humour in advertising (Fugate, 1998). Scholars who conceive humour as an emotional process, such as De Pelsmacker and Geuens (1999), and Stathopoulou *et al.* (2017), prefer the A-S theory lens of investigation. Others use a combination of disparagement and A-

S, such as Newton, Wong and Newton (2016). They usually record positive outcomes of humour on emotions.

A brand aims to establish and maintain an emotional bond with its target (Kotler, Keller and Keller, 2006; Keller, 2013). The role humour plays in enhancing consumer engagement is proven by Stathopoulou *et al.* (2017). Humour also increases emotional appeal, reduces the need for cognition, and reduces resistance to persuasion (Nikfar, Abdolvand and Heydarzadeh, 2016) by reducing counter-argumentation (Eisend, 2011). As seen, the effects of humour on emotions are clear. The problem arises in the relationship between humour and cognition, where literature finds that humour can threaten memory, behaviour, and persuasion by draining cognitive resources from the product/brand to the elaboration of the humorous content itself. The term *vampire effect* was first used by practitioners (Eisend, 2011). It describes the process whereby the elaboration of the creative content of a communication employs too much cognition, reducing cognitive resources paid to the comprehension of other cues of the message (such as the brand name or the product advertised) (Evans, 1988). The vampire effect:

> occurs when an ad, usually a television commercial, is so highly entertaining that it gets in the way of the product message. It siphons the viewer's attention from the product being advertised. (Agee (2003), page not specified).

Eisend's meta-analysis of humour in advertising research (Eisend, 2011) confirms that cognitive resources are drained by the vampire effect. A deeper description of the cognitive dynamics behind the phenomenon comes from the eye-tracking analysis made by Strick et al. (2013). They prove that humour only affects attention, not comprehension nor cognition – at least not directly. This means that a subject exposed to humorous content will pay more attention to the humorous element than a non-humorous one, such as the brand name and the product. The vampire effect is not depending on a negative action of humour on other elements, but simply increasing attention to the humorous element itself. Humour elaboration does not exclude the elaboration of peripheral cues of the message, even if it drains attention from them. Evidence supports that the vampire effect can be used to benefit brands in cases of negative reputation. According to the *distraction hypothesis* (Festinger & Maccoby 1964), the attention paid to the humorous content can allow to deliver a message besides its discrepancy to a previous position held by the consumer. This can lead to a change in the attitude held by the consumer to the brand (Festinger & Maccoby 1964) and even prevent negative brand associations (Strick et al. 2013). In this case the humorous message enhances the emotional memory of the brand and reduces the resistance of a consumer toward a biassed brand.

The problem remains for those brands and products that want to be remembered through their advertising exposure. The most effective way to overcome the vampire effect is known as humour relatedness to the product-brand, often also referred to as *relevance* (Krishnan and Chakravarti, 2003; Khan and Khan, 2013; Stathopoulou *et al.*, 2017). It consists in embedding the brand/product advertised in the humorous element itself. Humour relatedness to the product/brand manages to focus the attention paid to the humour on the core message of the advertisement. Thus, stimulating conscious memory of the product/brand (Fugate, 1998; Krishnan and Chakravarti, 2003; Hansen *et al.*, 2009; Brown, Bhadury and Pope, 2010; Strick *et al.*, 2010; Nikfar, Abdolvand and Heydarzadeh, 2016) neutralises the vampire effect. Counterarguing the vampire effect, humour enhances unconscious memory of the product/brand (Hansen et al. 2009). Therefore, if the conscious memory of the brand/product is reduced during exposure to the message, the brand-product linkage is still favoured, stimulating brand choice at the moment of purchase, as reported in the shopping model of Berg and Lippman (2001).

Neurology of humour confirms the threat of intrusive advertising that reduces attention and concentration (Rejer and Jankowski, 2017). The literature so far analysed on the cognitive implications of humorous advertising counter argues that humour can increase the amount of cognition paid to the message, at the expense of other elements of the communicative process. The demand of cognitive effort is also a benefit, because it does not lower cognition in case the ad interrupts already high cognition tasks (Daugherty *et al.*, 2018; Reichstein and Brusch, 2019).

2.2.5.2 - Humour relatedness to the product/brand.

Krishnan and Chakravarti (2003) define *relatedness* as the "humor that is relevant (i.e., meaningfully linked) to the brand claims" (p. 32). So far literature has considered relatedness of humour to the product/brand advertised as the content of the message. In his taxonomy, Speck (1991) uses text analysis methods to identify three different domains humour can relate to the product/brand within an advertising message:

1. *Intentional relatedness* refers to the importance of the humorous element in the message. If the core of the message is the humour, then the advertisement is humour dominant. In these cases, if the humorous stimulus is removed, the whole meaning of the advertisement ceases to exist. The advertisement can also be message dominant. In these cases, the humorous element is a peripheral cue of the advertisement, and its processing does not affect the one of the advertising messages.

2. *Structural relatedness* consists in humour relatedness to the syntaxis of the message. In message-dominant advertisements the humour is embedded in the message, generally subordinated to the core information (e.g., initial humour, embedded humour, and/or closing humour). In humour-dominant messages, structural-related humour absolves the function of brand/product information.
3. *Semantic relatedness* refers to the relationship between humour and product-related themes. In advertisements with a strong semantic relatedness, humour is thematically related to the message the advertisement is carrying. Low semantic relatedness relegates humour to a peripheral cue.

The three attributes of relatedness are crossed in Speck's (1991) taxonomy with other elements of advertising and theories of humour. They do not exclude each other and can coexist in the same advertisement. For example, a humour-dominant advertisement can have humour intentionally, structurally, and semantically related to the product/brand or, more generally, to the message the advertisers want to communicate (e.g., supremacy over competitors, benefits related to the product/brand etc.). While relatedness can neutralise the vampire effect, there is little research about its impact on the effectiveness of the humour, while there is no research on the impact related humour has on the product/brand in case of failure. In these cases, humour can even elicit negative feelings toward the product/brand. So far, scholars have attributed these failures to the offensive content of the humorous message (Gulas, McKeage and Weinberger, 2010), individual differences on humour appreciation based on differences of humorous personality traits (Martin *et al.*, 2003), while Warren, Carter and McGraw (2019) suggest that humorous advertisements can stimulate negative reactions in case of aggressive content. Most of the literature about ineffective humorous advertisements focuses on strong reactions often measured through consumers' complaints (Dore, 2018). There are no studies that find correlation between relatedness and success (or failure) of humorous advertising. Current research aims to cover the gap.

2.2.5.3 - Humour intensity.

An important moderator of the effectiveness of humour in branding encountered in literature is the humour intensity. The analysis is still affected by the dichotomy of emotion/cognition driven by different adoptions of humour theories. Emotional intensity is analysed by De Pelsmacker and Geuens (1999), who quantify it according to a subject's scale of evaluation, whereby negative effects affect attitude toward the brand (A_{BR}), while positive affects attitude toward the advertisement (A_{AD}). Again, this can be read because of the vampire effect. The problem appears to be false because Mitchell and Olson (1981) suggest that A_{BR} is a function of A_{AD} and advertising liking. The transfer hypothesis

(MacKenzie, Lutz and Belch, 1986) also proves that A_{AD} positively enhances $A_{BR.}$ Therefore, emotional humorous intensity enhances A_{BR} indirectly.

Cognitive intensity has been defined as humour strength and measured as the level of perceived incongruity in Krishnan and Chakravarti (2003). They prove that a medium level of humour facilitates encoding and retrievals of claims against no humour or high-strength humour. High-strength humour content appears to distract the consumer by peripheral cues of the advertisement compromising their memory and confirming the vampire effect. Such research also identifies a U-shape effect of humour effectiveness, with too-high intensity and too-low intensity being not effective on product/brand memory (Krishnan and Chakravarti, 2003). The paper does not offer an objective way to quantify cognitive humour intensity, neither does it account for individual differences on its perception.

The discrepancy between affective and cognitive intensity is overcome by Eisend's *integrative model* (Eisend, 2011). He proposes a way to hold together emotion and cognition. It shows that the vampire effect is a result of path analysis that does not consider emotions. This leads Eisend himself to reject those papers in his meta-study since affection enhances the A_{AD}, the brand cognition remains active at an unconscious level. More importantly, the meta-study points out the advantages of considering humour as simultaneously cognitive and emotional, overcoming the limitations of those papers so far analysed.

2.2.5.4 - Brand familiarity

Brand familiarity is the extent of a brand and its associations stored in a consumer's memory (Chung and Zhao, 2011). A high-level brand familiarity seems to enhance the strength of the link (Hutchinson and Zenor, 1986), reducing the processing of new attributes (Bettman and Park, 1980). Chung and Zhao (2011) identify a moderating effect of brand familiarity on humorous messages. Humorous appeals have a more effective result for unfamiliar brands. This means that the increased attention toward humour is moderated at the source by familiarity. This result seems to find its explanation in humour processes theory, whereby humour seems more prone to modify mental schemata through incongruity (Raskin, 1985b) affecting an emotional mental state (Berlyne, 1969) rather than enhancing or consolidating them. A limit to such finding can be detected in the different predisposition some persons have for engaging in humour. Put simply, as humour can be a personality trait in humans, it could also be a trait of the brand personality. While the above research has been applied to generic brands, it is not known if brands based on humour are recognised as such and create humour expectancy. An example comes from the success of the Comparethemarket.com® meerkats mascots

(Patterson, Khogeer and Hodgson, 2013). There is evidence that humorous campaigns can become trendy and involve consumers' engagement to the point that the catchphrase becomes an ear worm even though the brand, already established on the market, was not previously identified as humorous. The success of the British campaign "*should have gone to Specsavers"* by Specsavers®, for example, which started in 2010 as a parody of the Lynx® advert (Bedford, 2015), has helped the brand penetrate foreign markets as well (Korteniemi, 2013), in spite to the cultural differences embedded in the humour paradox.

The higher effectiveness of humour with novel brands against established ones should be further investigated by using real market examples, and by using more longitudinal studies, which are designed to show the long-term effects of humour use. Besides case studies, there is not yet an effective quantification of humorous brands, or which brands and product markets are likely to use humorous appeals, as research often uses fictitious brands (Eisend, 2011)

2.2.5.5 - Need for cognition (NFC)

The elaboration of the humorous message is affected by another moderator known as Need for Cognition (NFC). This consists of the attitude individuals have in engaging in effortful cognitive operation (Cacioppo and Petty, 1982). In relation to the elaboration of the humorous message, in advertising and branding NFC is affected by the mental involvement a customer has with a product/brand (Nikfar, Abdolvand and Heydarzadeh, 2016). It comprises both the nature of the product and the argument strength with which it is presented in communication (Cline and Kellaris, 1999) and encompasses the sociographic of humour effectiveness. By translating the metaphor of the vampire effect, humour produces more effective results for low-involvement or low-risk products, such products being subject to routine purchase or low cost (Flaherty, Weinberger and Gulas, 2004). A similar effect is analysed on argument strength where weaker arguments enhance the effect of humour on attention toward the central message (Cline and Kellaris, 1999). To sum up, lower NFC products and brands advertised with humorous messages are more effective than those with high NFC. The NFC moderation effect on humour appreciation and advertisement effectiveness is easy to understand. However, as seen in grey literature, in recent years humour is expanding to more markets, even those with a higher NFC, because of the increase of both consumer knowledge and media content proliferation (Wilke, 1997; Dormon, 2016).

The research on NFC is mostly based on laboratory observation using stimuli selected by the researcher. Thus, the analysis of the moderation effect of NFC on humour comprehension and

advertisement effectiveness still misses confirmation from the real marketplace and consumers' point of view. Furthermore, as it has been seen, the fact that humour seems more effective with novel brands countermands the effect of NFC. Again, research does not consider individual and within-individual differences in humour appreciation and need for humour. After all, NFC effects on A_{ad} have already been studied also in relation to individual differences (Haugtvedt, 1992).

NFC is strictly linked to Need For Humour (NFH) (Cline, Altsech and Kellaris, 2003). Similarly, NFH moderates humour appreciation because it increases the motivation to engage in the cognitive elaboration of the humorous incongruity (Cline, Kellaris and Bondra, 2007). This measure is derived by the individual's Need for Levity (NFL). The instrument results in an effective measurement of a moderator of humour appreciation, rather than an independent variable of it. This is more likely to be found in the sense of humour, intended as the predisposition individuals have to engage with humorous content (Ruch *et al.*, 2011).

2.2.5.6 - Is humour the medium? Call for research.

Following the humour paradox, humour is not only different between cultures, and social groups, but also between individuals, and within the individual itself. The context in which humour is presented also plays an important role in the determination of its success. Except for street adverts, such as the billboard reported in figure 1-1, the context of marketing communications consists predominantly in mass-media. The role of the media setting on consumers' involvement in warm appeals (including humour) has been investigated (De Pelsmacker, Geuens and Anckaert, 2002). The research confirms that content-based media also influences consumers' perception for humorous messages (Liu and Smeesters, 2010; Wang and Chou, 2019). While research has focused on humorous appeal in advertising, little has been said about its use in other forms of marketing communication. Humorous advertising can be assisted by other forms of promotion not necessarily identified as advertising *tout court*. Product placement in humorous scenes in films, for example, stimulates positive emotional response by viewers (Jin and Villegas, 2007). Similarly, in viral advertising, emotional appeals such as sex and humour positively affect A_{ad} and viral intention (Petrescu, Korgaonkar and Gironda, 2015). However, Wendt, Griesbaum and Kölle (2016) prove that brand awareness is lower in viral advertising compared to product advertising videos. Again, the context and the purpose of perception of the message seem to strongly influence consumers' comprehension and appreciation of the humorous message. Further research is needed in the topic.

Primarily, a comparative quantification of the different forms of humorous marketing message used is needed. This could also lead to identifying how humour is used: for example, we do not know if the humorous appeal is dependent on different forms of communication, or whether a brand uses different forms of communication relying on the same appeal. This finally leads to the realisation that humour enhances a brand's communicative strategy by becoming a brand personality trait (Júnior *et al.*, 2023).

2.2.5.7 - Humour and brand: Synergy of communication.

While most papers investigate the role of humour in advertising, little has been said in relation to humour and brands. Some papers touch on the topic by analysing media placement (Jin and Villegas, 2007), viral advertising (Brown, 2014; Dinh and Mai, 2016), and a parody of competitors (Jean, 2011). Regarding brands or their elements, humour has been identified as a crucial argument of storytelling (Denning, 2006; Irwin, 2015), jingle (Ali, Srinivas and Bhat, 2012), mascot (Patterson, Khogeer and Hodgson, 2013), service/product enhancement (Mathies, Chiew and Kleinaltenkamp, 2016), naming and local marketing (Brown, 2014), co-branding (Irwin, 2015) and general unreferred brands' material (Strick *et al.*, 2012). The limited number of papers does not allow a thorough analysis. Even so, it can be stated that humour is generally considered a positive brand appeal: the above-mentioned papers investigate the success of integrated (synergy in Ali et al., 2012) humour in brand elements. Translating the vampire effect metaphor, it is possible to propose that humour can enhance attention toward a brand or its elements, can improve differentiation from competitors, and circumvent customers' resistance to marketing communication (Wilke, 1997; Blum and McClellan, 2006). Humour can also improve the brand by *humanising* it (Lindstrom, 2006); after all, a brand is an interface interacting with the customer. This confirms the practitioners' conception that humour can contribute to the uniqueness of the brand by enhancing its equity. A brand can also relate itself or some of its elements to humour, changing it from an advertising appeal to a strategy of communication. Agee (2003) shows that unrelated humorous advertising becomes effective when it is the brand that relates its own elements (billboards, points of sale, etc.) to the same humorous appeal. Similarly, the success of a humorous mascot instigates the change of several other brand elements that will be related to the humorous element (Patterson, Khogeer and Hodgson, 2013). Considering the difficulties, the risks, and the costs of an unsuccessful humour-based message, brand-relatedness could offer an occasion *a-posteriori* less risky than humour relatedness to link the brand to successful humorous content, however, further research is required in the field.

2.2.6 - Conclusions

The debate of social sciences of humour focuses on a dualistic nature of the phenomenon. While humour is an instrument of social cohesion, it also contributes to social exclusion. This result points out that humour is a communicative tool used, often simultaneously, to achieve both. Afterall any attempt to remark on social inclusion, is automatically determining exclusion. Similarly, the analysis of business studies of humour remarks on a dualism, but this time between emotions and cognition. Some elements of crossing between the two can already been found between the similarity of the concept of humorous arousal, advertisement arousal, intended as engagement with the message (Daugherty *et al.*, 2018), and the concept of humorous salience, intended as the relevance of the content for the receiver of the communication (Goldstein, Suls and Anthony, 1972). These parallelism of terminology questions whether the arousal itself is an emotional or a cognitive (or both) phenomenon. Afterall, the resolution in I-R theories does not excludes emotional inferences activated by the cognitive incongruity. Rather, this chapter has associated one or the other theories to cognitive or emotional outcomes of the research. This impasse was clear in Eisend's meta-study, where the needs for an approach including both effects of humorous appeals.

Several moderators have been identified among the cognitive processing of humour: NFH poses the basis for the attitude consumers have toward engagement in humorous content, while NFC discloses that low-involvement products are more likely to be advertised with a successful humorous advertisement (Chung and Zhao, 2003). Brand familiarity seems to reduce humour effectiveness. Thus, humour brings more effective results for novel brands (Berg and Lippman, 2001; Strick *et al.*, 2009, 2010). However, the latter findings are mostly based on analyses using fictitious brands, while those using real-market example do not account for previous exposure to the message that could reduce the effectiveness of humour. This means that the humour analysed is always influenced by the researcher, since they act as a filter through the selection of messages, they found humorous themselves.

Another moderator analysed is humour intensity. While emotional intensity has been quantified by self-reported surveys, cognitive intensity has been investigated by using text analysis. In both cases there are some limitations. Self-reported analysis has not been measured in relation to several quantifications from the same individual. Therefore, if it is easy to predict that the perceived intensity varies according to individual differences, we do not know if this changes for the same individual according to the daily mood or in relation to several exposures to the same stimulus. The recognised role of humour as attention-grabber seen in the chapter, lacks further definition. As most of the papers consider stimuli perceived already humorous, they quantify the cognitive, and effective effort paid to understand the humorous element. Science does not know, so far, whether it is the humour that grabs

attention, or if it is the content of the humorous message, somehow relevant to the target market, that gathers attention toward the humorous element. Thus, humour risks to remain a gamble on creativity, rather than a strategy of communication. The definition of both knowledge and motivation needed for such elaboration should allow the consideration of the gap left by humour studies: the humour relatedness to the target market. By knowing what a specific market segment finds humorous, advertising could use humorous content to talk specifically to those individuals, becoming a more effective marketing tool.

The next section will define the theoretical background of the research. It will start by considering the possible object of the humorous incongruity and its possible measurement, taking into account the sociological and psychological perspectives. This raises the same difficulties research has encountered in identifying a way to quantify motivated cognition. Following the humour paradox, the latter will be privileged. Hughes and Zaki (2015) recognise that motivated cognition shapes the way people think and also select what they are thinking about. Starting from the theory of mental states, the chapter will present a model merging emotion and cognition (A-S, and I-R theories). The model will be seen through the lens of the humour paradox, to identify the levels of interaction between the different mental schemata concurring with the process of interpretation of the humorous content. More widely, the process of decision-making relies on heuristic information processing. The analysis of attitudes formation passes by recognising the coexistence of emotion and cognition in the process like other fields of business communication studies have done (Argyriou and Melewar, 2011). Another framework is Petty and Cacioppo's ELM, especially in its form of Elaboration Likelihood of Incongruity (ELI) expanded on by Lee and Schumann (2004). Such analysis will support the formulation of research hypotheses. Literature investigate so far will be integrated with the description of those theories and the instruments that will be identified as necessary to test the hypotheses of this research.

2.3 - Theoretical Background

The review of the literature so far investigated, has highlighted several gaps in our understanding of humour. The classification of humour as a mental state (Berlyne, 1960, 1969), this research adopts the structure of Incongruity-Arousal-Resolution (I-A-R) suggested by Mendler (1982) to investigate it. The understanding of the terms of incongruity and arousal is pivotal in determining what research has clarified so far on the topic, and the gaps that this research intends to fulfil. Along with Mandler's model, the research shall consider the neurological implications of humour, along with the study of the role of persuasion in marketing communication. The Elaboration Likelihood of Incongruity (ELI) of persuasion, and its developments over the years, highlight dynamics and fundamental elements of

humour as advertising appeal. This model supports the coexistence of emotions and cognition, and includes moods into the investigation, together with the situation the ad is perceived in.

The reading of the relevant literature has also shown that most research uses fictitious stimuli. In papers using real market examples the selection of the stimuli was not entirely free from the influences and the taste of the researchers. Supported by the definition of the humour paradox (Gulas and Weinberger, 2010), this thesis argues for the choice of self-reported stimuli, and analysis, in order to avoid researcher's biases. The final part of the chapter will show the description of the hypotheses of research, which aim is to identify mental processing of humour according to the stimulation of both emotions and cognition. The quantification of the moods should allow the identification of the mental context in which participants choose each stimulus. Other elements of the research are the quantification of self-reported mechanisms (cognitive, emotional, and disparaging) as mediators of the advertisement liking, and advertisement humorousness.

2.3.1 - Humour as a mental state.

By identifying humour as a mental state, Berlyne (1960, 1969) links humour to other aesthetic experiences. A mental state is a mental process where an individual simultaneously experiences thinking and feeling (Goldstein, 2000; Piccinini, 2004). This definition alone proves that humour is necessarily both cognitive and emotional. The main mental states hereby considered are beauty, and colour perception since the similarity between humour and play has already been discussed.

In philosophy the study of beauty has undergone biases like the one of humour (Sircello, 1975, 1989). Only recently the analysis of philosophy of aesthetic was re-evaluated by considering beauty as the reproduction of an experience of quality (recollection, repetition or recreation of images, memories, thoughts, actions, feelings, or states) that is part of previous experiences. In this way Sircello moves the origin of the sense of beauty from metaphysics to knowledge. Scarry (1999) considers beauty as the effect of our own past experiences, and the maturation of a sense of harmony; once in front of an object (also a person) that matches our own idea of perfection of the object category. The categories identified by Scarry are mental, and not metaphysical. Beauty becomes both a cognitive and emotional construct: a process, and an event, where beholder and beheld perceive the equality of contemporaneity on participating in existence. The latter thought links beauty to justice (or, what we consider just). Besemer and O'Quin (1986) identify aesthetics of communication with the study of the structure of the message. It is the way the rules of the code are changed to stimulate semantic chains that are not normally associated with the object (McQuarrie and Mick, 1992). This supports the

connection between mental states and figures of speech, recalling the one of humour and metaphors. It also clarifies the association between mentals states and rules, knowledge, schemas of comprehension, and significance or, as for linguistics studies, semantics (Raskin, 1985a).

In philosophy of mind, colour perception offers an interesting thought experiment known as *Mary's Room* (Jackson, 1982, 1986). It hypothesises that a neurobiologist spent all her life in a black and white room learning about colours perception. She knows everything about colours without ever having seen them. When suddenly a red apple appears on her screen: does she learn new things? The experiment aims to counter argue the physicalists position (everything, including our own thoughts and knowledge are physical). Jackson believes that if Mary learns something new, this proves the existence of *qualia* (individual knowledge based on subjective experience). Although the debate is still open in philosophy, Jackson himself admits that science can offer a solution to the problem (Braddon-Mitchell and Jackson, 1996). It is in cognitive psychology's concept of *mental schema* suggests a solution to the thought experiment, confirming the role of individual knowledge based on experiences and thoughts peculiar to the individual.

2.3.1.1 - Mental schemata as the object of the humorous incongruity

Mental schemata theory gives both the opportunity of defining the object of the incongruity and to bypass the impasse between emotional-arousal, and cognition-incongruity. Mandler (1982) bypasses the dichotomy of cognitive and emotional with the concept of mental schemata. Most of the recent theories of humour so far analysed have somehow identified the object of the incongruity with knowledge. In psychology and neuroscience, knowledge is identified with the concept of mental schema. Piaget (1971) first proposed such concept in psychology in relation to the organisation of knowledge and culture during childhood (Piaget, 1962; McGhee, 1971b). Mandler defines as schema of knowledge: it refers to

> a category of mental structures that organize past experience […], the schema that is developed as a result of prior experiences with a particular kind of events. (Mandler, 1982, p. 16).

They analyse the process of mental states according to the concept of mental schemata. Usually, people tend to ignore or give little cognitive or emotional effort to understanding objects corresponding to their expectations (schemata). However, when an object or a phenomenon does not correspond to our own schema of knowledge (incongruity), it activates arousal, here intended as cognitive effort. This process generates a certain degree of awareness and an emotional charge that,

once the incongruity is resolved, can lead to a mental state (Mandler, 1982). The model proposed by Mandler, can be synthesised in an Incongruity-Arousal-Resolution (I-A-R) and it is useful to describe any process leading to a mental state. However, the model does not expand on the differences between each mental schema or differentiate between mental states.

In psychology mental schemata are *mental structures used to perceive, process, and retrieve information* (Dimaggio, 1997, p. 265). The concept is expanded in cognitive constructivism (Derry, 1996) and beyond psychology itself, as well as sociology and anthropology. It is with *mental schemata* that the concept of culture evolves from an unitarian view, to one of rules and, finally, to an individual's mental construct that only partly absorbs the general culture. This explains why individuals do not necessarily act according to what a social rule dictates (Dimaggio, 1997), but rather, to their own mental processing of it . Cognitive constructivism interprets the schema theory in relation to the process of knowledge acquisition. Its contribution is fundamental to classify mental schemata according to the function covered in the information-processing. Derry (1996) identifies:

1. Prior knowledge schemata: coinciding with Mandler's definition of it.
2. Memory objects: thinking and learning take place through the activation of specific prior knowledge-schemata in response to environmental input. The working memory aim is to make sense of the reality or a phenomenon by activating a certain set of knowledge schemata and re-elaborating it in the meaning: the interpretation of the phenomenon.

Memory objects are further divided:

1. Cognitive fields are *the pattern of memory activation that occurs in response to an event* (Derry, 1996, p. 168). They consist of those memories pertinent to the phenomenon or interpretative situation.
2. Mental modelling is the act of *constructing, testing, and adjusting a mental representation of a complex problem or situation. The goal of a mental modelling is to construct or understand a phenomenon* (Derry, 1996, p. 168). By this, mental models are schemata that exist only in the situation of modelling and depend on the context.

Aesthetic experiences are a form of mental modelling because they are perceived in the immediate of a phenomenon. It is now clear that mental schemata involved in the generation of mental states are depending on the activation of cognitive fields and mental models. The performative nature of recalling cognitive fields explain the paradox of humour: how it can be different across cultures, social groups, individuals, and even within-individual.

2.3.1.2 - Revision of the concept of the incongruity

According to the *Oxford Dictionary*, the word incongruity refers to something strange, that does not suit a particular situation – something unexpected. Its etymology comes from Latin *in* (non) *congruere* (being in harmony, correspond). It was defined as *something unexpected, out of context, inappropriate, unreasonable, illogical, exaggerated and so forth* (McGhee, 1979, p. 10). Picture 2-1 (top part) synthesises the different typologies of incongruity presented in literature (McGraw and Warren, 2010). The Benign Violation Theory (BVT) fails to determine what makes an incongruity a violation, and, for this reason, remains a descriptive, rather than proscriptive, theory of humour (Roberts, 2016). The overlapping nature of the typologies of incongruity identified by the authors has already been described. The neurology of humour, in particular the attribution of the release of dopamine, has established that humour plays a key role in information processing (DeYoung, 2013). This supports linguistic theories of humour where the incongruity lies in the semantic, in the meaning, the humorous element plays with (Raskin, 1985a). The construction of meaning is elaborated through figures of speech (Attardo, 2005; Piata, 2016). The debate remains open on why some figures of speech are humorous and some others are not.

The neurological model can help clarify this impasse. Our brain continuously interprets inputs from senses. This process is generally unconscious (Tamietto and De Gelder, 2010). We are aware of the environment we are in, and each element is processed according to the knowledge we have of it: the chair on which we are sitting, the screen we are watching, everything else that surrounds us. These enormous loads of sensorial inputs (light processed into images, smells, tastes, sounds, tactile stimuli, etc.) are constantly processed according to our own knowledge of the environment itself. Normally, the unconscious processing is enough to make sense of the reality that surrounds us, while we focus on specific tasks such as reading the current paragraph. However, when the unconscious interpretation fails, our interpretative process is ineffective. The working mind would ignore the stimulus if it was not considered important or threatening. The motivation to do otherwise, as seen in DeYoung (2013), comes from the activation of dopamine *value coding* neurons that estimate the value of the unpredicted stimulus. The other dopamine path is activated by *salience coding* neurons that apprise the unpredicted punishment or reward coming from the effortful interpretation. Briefly, the mind evaluates the relevance of the incongruous stimulus according to pertinent mental schemata. This can activate the alert (cognitive arousal) that allows a conscious re-elaboration of the mental schemata into the interpretation that solves the incongruity. If the threat is neutralised in a relatively quick amount of time, humour comes as a reward for such effort. In this way the object of the incongruity becomes the mental schemata of the individual, to comply with Mandeler's I-A-R structure (1982). The passage from unconscious to conscious elaboration is not completely clear to neurology. A study

focusing on image recognition identifies the role of the pulvian activity (the section of the brain connected to sensory nerves), and the amygdala, on activating such a shift in cognition: these parts of the brain are mainly responsible for perception, but, as seen before, humour activates conscient processing of the brain, and the dopamine is released to calm down the cognitive arousal, to fix the new information, and to reward the brain (DeYoung, 2013). This helps to understand why certain figures of speech are humorous (and why some others are not). Thus, the hypotheses deriving from qualitative coding of the stimuli (QC-H) follow:

QC-H1: each stimulus can be coded as a figure of speech.

QC-H2: the same stimulus can recall a different figure of speech for different participant according to the humorous element they identify.

Along with the definition of the humorous incongruity, so far associated with the cognitive dimension of humour, as well as the one of arousal can be further investigated, before proposing the hypotheses of research.

2.3.2 - Neurology of humour

Concepts such as incongruity and arousal are common in neurology, which is also, among natural sciences, one of the closest to social sciences. The study of the biochemical processes activated in the brain experiencing humour can allow us to draw some conclusions on what humour is. Nilsen (2001) reports that while studying the effect of random sentences on the brain, neurologist Dr Shibata realised that more illogical sentences were activating several parts of the brain simultaneously, including those not related to language. The absurdity of the sentences was amusing the brain, rather than activating logic detection. Since the illogical sentences could not be interpreted using linguistical cognitive fields, the subjects were activating an upper level of cognitive fields related to the situation of the experiment. This generated humour. MRI scans of the brain perceiving humour confirm that a large area was activated during the process. Generally, these parts are the frontal and pre-frontal cortex lobes, temporal regions and possibly the cerebellum (Wild *et al.*, 2003). Rejer and Jankowski (2017) analyse the perception of intrusive advertising, such as in social media, and show that the interruption of the cognitive task (for example, reading a text) causes a drop of activity in the prefrontal and frontal cortex. This indicates a drop in concentration and general cognitive activity. As seen in the introduction, most of the social media advertising has a humorous intention. The attention-grabbing capability of humorous advertising could be linked to the fact that humorous appeals are responsible for a lesser drop in cognition. The correlation between higher levels of brain activity and certain

typologies of advertising is evident in other studies too. Using electroencephalography, Daugherty *et al.*, (2018) prove that advertisement with higher levels of recall and arousal lead to higher levels of brain activity. This shows that higher neural activity is associated to message effectiveness.

The activation of multiple sections of the brain described above, supports enough evidence to confirm the classification of humour among mental states (Berlyne, 1960, 1969). Attention is also paid to the concept of arousal. Shibata, Terasawa and Umeda (2014) analyse the brain's implications of humour with functional magnetic resonance imaging (fMRI). They prove that the comprehension of a humorous stimulus activates a release of dopamine in the mesolimbic reward regions. The functions of dopamine in the brain are still not completely clear because of the different situations in which it is produced. DeYoung (2013) theorises a unifying theory of the role of dopamine by analysing its production in information processing. The general role he attributes to dopamine is the stimulation of cognitive exploration. In front of an unpredictable stimulus, the brain evaluates its importance depending on motivation and cognitive evaluation. The scope of dopamine, according to DeYoung, is the reduction of uncertainty. Once classified as relevant by the individual, the non-understanding of the stimulus becomes a threat, intended as a cognitive risk of failed interpretation. Instead, its understanding generates a reward (the dopamine production). To sum up, dopamine enhances our sense of cognitive exploration of something we do not immediately understand by being at the same time a way to fix the new information, and a reward for the brain that needs to reduce its cognition. It is this dynamic that changes the humorous incongruity into a violation: the threat is cognitive, the reward emotional.

2.3.2.1 - The nature of the humorous arousal

The motivation to interpret the message is fundamental to achieve a central process of incongruity (Lee and Schumann, 2004). Personal relevance is the key concept to understand both why individuals perceive the incongruity, and why they are willing to solve it. In simple words, a stimulus is salient when we know that it is important to us. The correlation between humour's perception and feeling good is supported by research (Spielmann, 2014; Kim and Kim, 2018). It justifies the concept of benignity of BVT (McGraw and Warren, 2010), but certainly does not refer to an innate benignity of humour. Unlike sense of play, or beauty, this feeling is not dependent on an intrinsic peculiarity of the message, as a generic counterpart of the humorous violation. The correlation of dopamine release within a successful interpretation problem-solving is perceived as positive, beyond the moral appreciation of the content. This supports our capability of laughing at taboo topics such as dark humour, overcoming the dichotomy benign-malignant. The analysis of the neurology of humour introduces an important element of analysis that consists in the *salience* of the message. Pertinent

literature is focused on the processing of visual stimuli. Pessoa and Adolphs (2010) review literature based on primates and humans brain functions of colliculus and pulvinar activity connected to the amygdala. Such a neurological path was erroneously correlated to unconscious elaboration. Instead, the authors support the multiple-waves model. It assumes that the processing of visual stimuli happens simultaneously in different neurological paths. In particular, the pulvinar nucleus of the thalamus determines the behavioural relevance of a stimulus. It is connected to the amygdala, that directs the processing of affectively significant items to the paths related to the cortex. Beyond visual processing, Pessoa and Adolphs recognise that the amygdala is also connected to the perception of other sensorial stimuli. As an important point interconnecting brain circuits, it affects the hypothalamus and other nuclei regulating facial expression and endocrine response, including the production of dopamine, and the facial Duchenne-display of laughter (Ekman, Davidson and Friesen, 1990).

The neurological model points at the importance of another element of humour consisting of the salience the humorous message has for the receiver. The term salience, in humour studies, defines the content of the humorous message that enhances the attention toward the message itself (Goldstein, Suls and Anthony, 1972). Recently, the concept has been investigated mostly by linguistic studies. In particular, Giora (1997) hypothesises that different layers of salience coexist with a specific word beyond its main (more salient) meaning. A novel meaning can be processed with cognitive effort to differentiate from the more salient one. This happens according to other meanings coexisting with the same word, depending on other elements of the communicative phenomenon such as the context or the actors involved. Giora applies this model to the explanation of irony (Giora, 1995; Giora, Fein and Schwartz, 1998). Thus, the sentence “it is a lovely day” can become ironic if referred to bad weather. Sadly, the study of the humorous salience does not develop much further in humour and marketing communication studies. The function of humour as attention gatherer does not specify if the attention is focused by the humorous element or its salience. Certainly, humour gathers attention because it focuses cognitive effort to the resolution of the incongruity. Despite the association between Arousal-Safety theory to emotional implications of humour, the concept of arousal in advertising and humour studies is denoting either emotions or cognition separately.

In neurology, arousal refers mainly to the process that determines wakefulness of the brain. Even in this meaning, the arousal is a cooperation of several sections of the brain, and of both emotions and cognition (Daniell, 2012). In humour studies, the concept of arousal is equally complex to the point that it constitutes an umbrella term, rather than a specific concept, part of the technical jargon of the discipline. Hameed, Zainab and Shamim (2018) conceive humour as the passage from something

hazardous (e.g. anxiety or uncertainty) to something that becomes safe with the appreciation of humour (referred to as A-S in the paper). This clearly refers to an emotional nature of the arousal. A different view is proposed by Yoon (2018): they describe the arousal of the incongruity-resolution as the surprise given by an unexpected resolution of the incongruity. Their experiment proceeds by analysing the moderating effect of different previously induced arousals (from neutral, seen as inactivity, to astonishment) on the surprise generated by the resolution of the humorous incongruity. Their research aims to maximise the humorousness of ads according to the level of arousal before the exposure to the humorous advertising. This is a different conception of arousal, here consisting in a cognitive state preceding the exposure to the message, and closer to Mandler's, and the neurology's meaning of the term.

This thesis assumes a comprehensive approach to the arousal. The cognitive arousal, intended as the wakefulness of conscient cognition aiming to solve the incongruity (Yoon, 2018), and the emotional arousal, intended as something felt as hazardous or threatening (Hameed, Zainab and Shamim, 2018), do not mutually exclude each other. Rather, the term implies a wakefulness, both cognitive and emotional, of the conscience. The current research also aims to define whether it is the message or its salience which is the attention-grabber. Humorous messages, especially in marketing communication, are complex texts where several cues overlap. In advertising there is a model that discusses the elaboration likelihood of the advertising message considering the complexity of such form of communication.

2.3.3 - Between Elaboration Likelihood of Incongruity (ELI) and Construal Level Theory (CLT)

Petty and Cacioppo's (1986) Elaboration Likelihood Model (ELM) of persuasion identifies two routes of stimuli processing: one central (effortful and based on central cues of the messages) and one peripheral (happening in the background and directed to peripheral cues of the messages). Kitchen *et al.* (2014) criticise the descriptive nature of the ELM, as only useful in explaining *a-posteriori* the routes of persuasion, but not particularly effective in predicting the phenomenon. They also recognise a process of cooperation between peripheral and central cues within the same interpretation, as described by the Heuristic Systematic Model (HSM) (Crano and Prislin, 2006). The cooperation of cognition and emotion, which appears to be separate between central and peripheral routes, is instead contingent on the same process of interpretation (Morris, Woo and Singh, 2005). The relevance of peripheral cues in the process of interpretation is confirmed by Lee and Koo (2016), who prove that high-involvement peripheral cues, such as celebrity endorsement, can dramatically influence the

central route of persuasion itself. Another implementation of the model starts from the identification of motivation, ability, and opportunity to interpret the central cue (Andrews, 1988).

Despite critiques and implementations, Petty and Cacioppo's model has been successfully applied in several fields. In consumer behaviour studies it has been combined with consumers' search theory for website personalisation (Ho and Bodoff, 2014), consumer perception of store and website image (Bezes and Paris, 2015), trust in on-line retailers (Mohr and Walter, 2019), and in visual media marketing (John and De'Villiers, 2020). Recently, the ELM has been successfully combined with Arnould and Thompson's (2005) Consumer Culture Theory to describe the on-line engagement of consumers in price determination (Levy and Gvili, 2020). Studies in viral advertising also confirm the ELM actuality (Kulkarni, Kalro and Sharma, 2020), recalling its contribution to advertising and humour studies in the identification of Need For Cognition (NFC), and need for humour (Jin and Villegas, 2007; Strick *et al.*, 2009; Kim and Kim, 2018). In advertising, the ELM and the schema-incongruity theories are combined by Lee and Schumann (2004) in the Elaboration Likelihood of Incongruity (ELI). The authors recognise a wider range of presuppositions to the interpretation process, such as individual differences and situational variables. These observations are supported by Chen and Lee (2008), who record the influence of personality traits in the elaboration of the central cue of persuasion. The model recognises that individuals must have enough motivation and ability (knowledge and cognitive resources) to process the incongruity. Once these are available, there are three possible paths of incongruity resolution that can lead to positive associations:

1. *Assimilation*. The incongruent information is assimilated into existing schemata. The knowledge processed consciously does not change or alter the knowledge unconsciously recalled. This is the case of low sophistication and low timing humour. The unconscious knowledge is simply re-elaborated to fit the incongruity.

2. *Alternative schema*. Other knowledge schemata are used to accommodate the incongruity. This happens on the base of a certain similarity between the two knowledges recalled. In these cases, the resolution of the incongruity is like figures of speech.

3. *Accommodation*. The conscious knowledge schemata consist in a new schema that differs from the one initially recalled. This process can be too sophisticated or require too much time for processing. In these latter cases the cognitive effort can be too high to generate humour.

Both schema theory and ELI, however, leave the debate open on the individual motivation to elaborate the incongruity. Mandler (1982) recalls that both individual and social factors concur at the base of the

structure of value contributing to the construction and assimilation of schemata. On the other hand, Petty and Cacioppo (1986, p. 150) recognise that

> the greater the personal responsibilities for evaluating an issue, the more people should be willing to exert the issue-relevant argument presented.

Beside which cue grabs attention, its relevance can be identified with its closedness to the singular individual. In Construal Level Theory (Trope and Liberman, 2010) the representation of an object is subject to its psychological distance, and, consequentially, to the level of construal, intended as the level of abstract or concrete thoughts. The relevance of either representation is depending on the relevance to the person's goals. The higher the construal level, the higher the quantity of abstract thought necessary to represent the object. The levels of psychological distance identified by the theory are temporal, spatial, social, and hypothetical. In the last decade literature has expanded its application to various topics (Adler and Sarstedt, 2021). The interrelationship between psychological distance and level of abstraction was confirmed with two meta-studies (Soderberg *et al.*, 2015). This identification of the relevance with the individual's goals could help to overcome Giora's graded salience theory, and merge emotion and cognition in the process of humour appreciation. Since individuals perceive different levels of distance according to their own goals, this could suggest that they accept some forms of humour, even if not benign, such as dark humour, or disparagement, because they perceive them as distant, or the negative element is in accord with their own goal, overcoming the limit of benignity the BVT has imposed on humour appreciation.

2.3.4 - Emotion, cognition, and social cognition.

The integration of emotions and cognition in humour theory is mostly based on psychology of cognitivism. In neurology these terms come from the separation between affective responses, intended as an expression of preference (positive or negative), and cognitive responses, intended as identification, categorisation, and psychophysical judgment (Murphy and Zajonc, 1993). A particular intersection between emotion and cognition is the social cognition: the cognitive process applied to social life. Olsson and Ochsner (2008) locate social-cognition and emotions in the same regions of the brain. They also identify the role of mental states in understanding emotions, learning, and behavioural response. The trichotomy emotion, cognition, and social cognition appears to agree with both cognitivism and neurology. This observation completes the journey toward a definition of humour presented so far. The addiction of social cognition focuses on the role cognition and emotion play in social interactions. The key role of humour, as the other mental states, is to direct attention toward possible threatening stimuli and resolve their incongruity (Olsson and Ochsner, 2008). It is in this

meaning that humour is a benign resolution of a threat (either cognitive, emotional, social-cognitive, and combinations).

To complete this conceptual framework that began with the definition of the humorous paradox, it is also pivotal to consider as variables of humour appreciation the mood state the individual is in, and their perception of the humorous stimulus as either cognitive, emotional, or social-cognitive.

2.4 - Hypotheses and models of research

This research aims to determine why individuals do or do not find a stimulus humorous. Such choice depends on individual taste, along with individual's demographic and sociographic differences. So far most of research has focused on proposing stimuli and quantifying participants' reactions to them. Instead, the current research aims to add to the scientific debate by letting the participants choose what they do or do not find humorous and allowing repeated observations within the same individual. A shortitudinal study (a short longitudinal study), therefore, could suit the purpose because it allows several observations within the same set of participants.

Research has established the correlation between humorous advertising and advertising liking (Chattopadhyay and Basu, 1990a). There are different levels of humour, also connected to different outcomes of the message (from humour tickling the brain, to smile, and laughter). However, there is no evidence that the level of humorousness and the level of advertisement liking attitude are correlated. The current research aims to establish whether the level of humour is correlated to similar level of ad liking:

HA – message's humorousness and message's liking levels are correlated.

Considering the complexity of humorous marketing messages on one hand, and the differences that arise within each individual perceiving those messages, individuals' sense of humour should play a key role in determining advertisement liking, and level of message humorousness. Sense of humour was successfully correlated to individuals' well-being in longitudinal studies (Svebak, Romundstad and Holmen, 2010). Considering the cognitive, emotional, and social cognitive dimensions, this research aims to identify the correlation between sense of humour and humorous advertisement liking. This latter construct consists in both humorousness of the message, and advertisement liking and is depending on the acceptation of hypothesis HA. The determination of which sense of humour (emotional, cognitive, and social-cognitive) effects humorous advertising liking is pivotal to enlighten

the role of emotions and cognition in humour. From a managerial point of view, it could help to identify a more effective form of humorous marketing message. The first model (Figure 2-2) aims to measure the correlation between sense of humour and humorous advertising liking (AD_{liking}).

HB – Sense of humour is correlated to AD_{liking}

HB1 – Cognitive Sense of humour is correlated to AD_{liking}

HB2 – Emotional Sense of humour is correlated to AD_{liking}

HB3 – Social-cognitive Sense of humour is correlated to AD_{liking}

HB4 – Individual differences in sense of humour determine AD_{liking}.

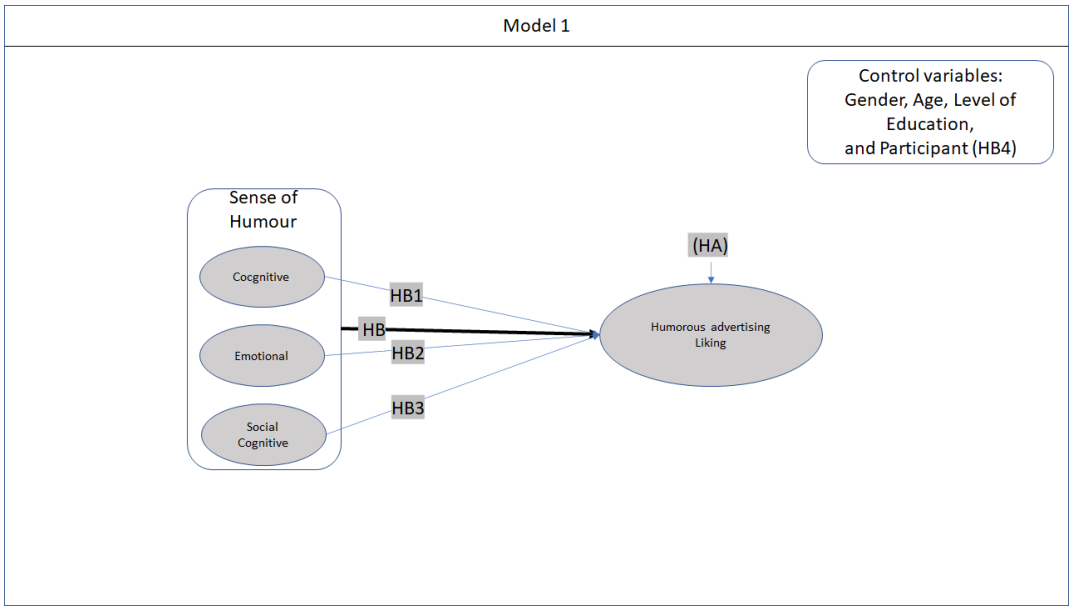

Figure 2-2 - Model one aims to quantify the correlation between sense of humour and its dimension and humorous advertising liking.

The ELI and the CLT suggest that cognitive and emotional perception of humour is different even within the same individual. The neurological model has pointed out that social cognition is involved in the appreciation of disparaging humour (Chan *et al.*, 2016). Along with the reporting of the message, participants should also identify the cognitive, emotional, or disparaging nature of the message. The identification of such mechanisms, acting as mediators of the effect sense of humour has on the advertising liking, allows the understanding of the relationship between emotions, cognitions, and social cognitions in the appreciation of humorous messages. The influences of individuals' sense of humour on preferring one mechanism over another should support the research that supposes aprioristic classification of humour as either cognitive, emotional, or social cognitive.

HC – There is a correlation between sense of humour and the perceived mechanism of humour.

HC1 – There is a correlation between cognitive sense of humour and the perceived cognitive mechanism of humour.

HC2 – There is a correlation between emotional sense of humour and the perceived emotional mechanism of humour.

HC3 – There is a correlation between social-cognitive sense of humour and the perceived disparaging mechanism of humour.

HC4 – There are individual differences in the way sense of humour is correlated to the perceived mechanisms of humour.

Using the concept of mechanisms of humour, Spielman (2014) identifies cognitive, or emotional humour. However, as this thesis argues, the two terms (and social cognition, not included by Spielman's research) do not mutually exclude each other. The measurement of these self-reported mechanisms of humour, and their mediating effect between sense of humour and advertising liking (and perceived humorousness) could help to determine the relationship. The right-hand side of Figure 2-3 reports the HC's hypotheses, while on the left-hand side the HD's ones.

HD – Mechanisms of humour mediate the effect of Sense of humour on AD_{liking}.

HD1 – Cognitive mechanism of humour mediates the effect of cognitive Sense of humour on AD_{liking}.

HD2 – Emotional mechanism of humour mediates the effect of emotional Sense of humour on AD_{liking}.

HD3 –Disparaging mechanism of humour mediates the effect of social-cognitive Sense of humour on AD_{liking}.

HD4 – Individual differences in perceived mechanism of humour moderates the effect of sense of humour on AD_{liking}.

Figure 2-3 below shows model 2:

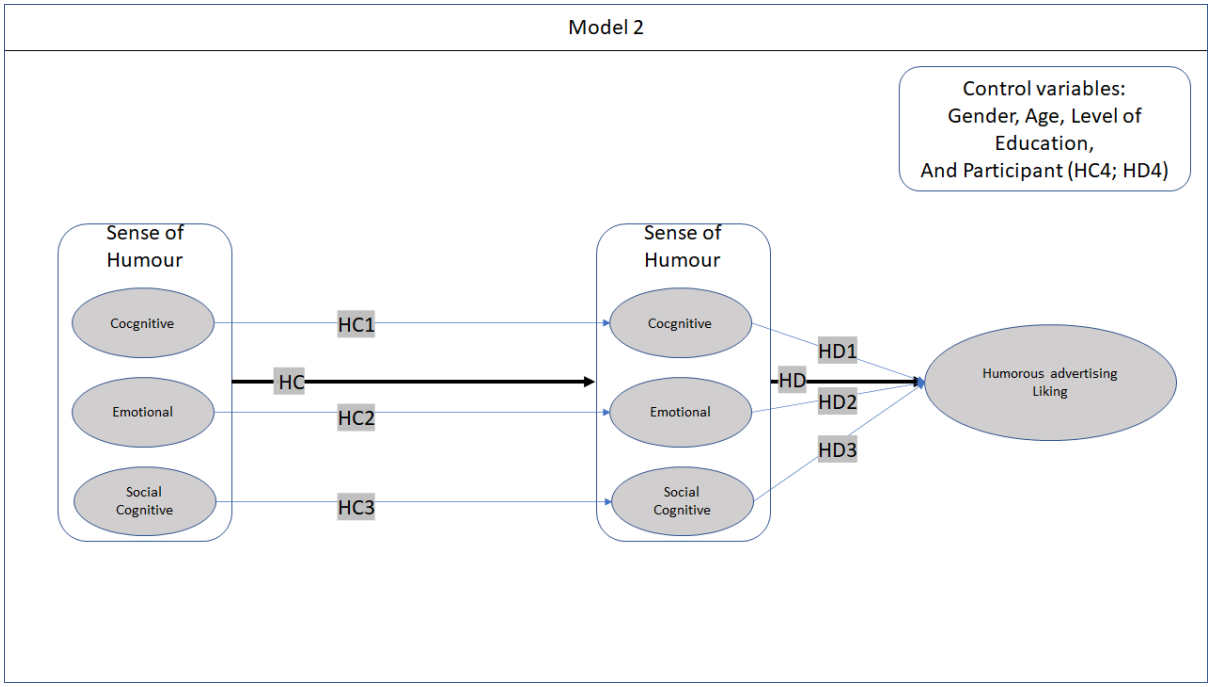

Figure 2-3 - Model 2 shows the mediation perceived mechanisms of humour have on the effect sense of humour has on humorous advertising liking.

The correlation between humour's perception and feeling good is supported by research (Spielmann, 2014; Kim and Kim, 2018). However, there is no evidence that the feeling is depending on the individual's mood. This research will be shaped by an on-line questionnaire. It is impossible to determine the precise environment participants respond in, however, it can be used to determine the self-reported mood state they have. Moods will be considered as moderators of the mediation reported above. Figure 2-4 reports the structure of the moderation between the daily moods and the effect of sense of humour on humorous advertising liking.

HE – Daily mood moderates the effect sense of humour has on $AD_{liking.}$

HE1 – Serious mood moderates the effect cognitive sense of humour has on $AD_{liking.}$

HE2 – Cheerful mood moderates the effect emotional sense of humour has on $AD_{liking.}$

HE3 – Bad mood (grumpiness) moderates the effect social cognitive sense of humour has on $AD_{liking.}$

HE4 – Individual differences affect way the mood moderates the effect sense of humour has on $AD_{liking.}$

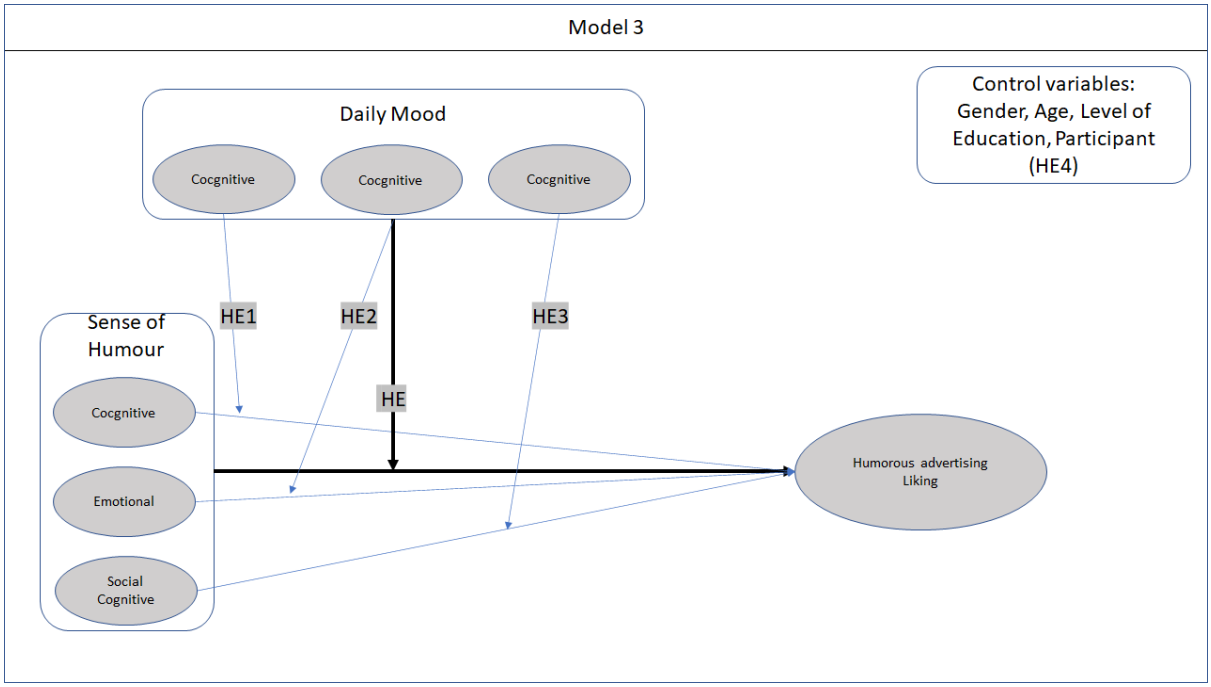

Figure 2-4 - Model 3 shows the moderating effects daily mood has on sense of humour correlation to the advertising liking.

The final model (figure 2-5) puts together all the elements considered in previous model. It is not predicted to completely define what determines the humorous advertising liking. The model considers daily mood shifts as moderators of the mediating effect of the perceived mechanism humour has on the correlation between sense of humour on humorous advertising liking. It will be the full model, but current research aims to identify models nested within it.

HF – Advertising liking is determined by sense of humour, the effect of which is moderated by the daily mood and mediated by the perceived mechanism of humour.

HF1 – Advertising liking is determined by cognitive sense of humour, the effect of which is moderated by the serious daily mood and mediated by the perceived cognitive mechanism of humour.

HF2 – Advertising liking is determined by emotional sense of humour the effect of which is moderated by the cheerful daily mood and mediated by the perceived emotional mechanism of humour.

HF3 – Advertising liking is determined by social-cognitive sense of humour the effect of which is moderated by the bad (grumpy) daily mood and mediated by the perceived disparaging mechanism of humour.

HF4 – There are individual differences on the moderated mediation of the full model.

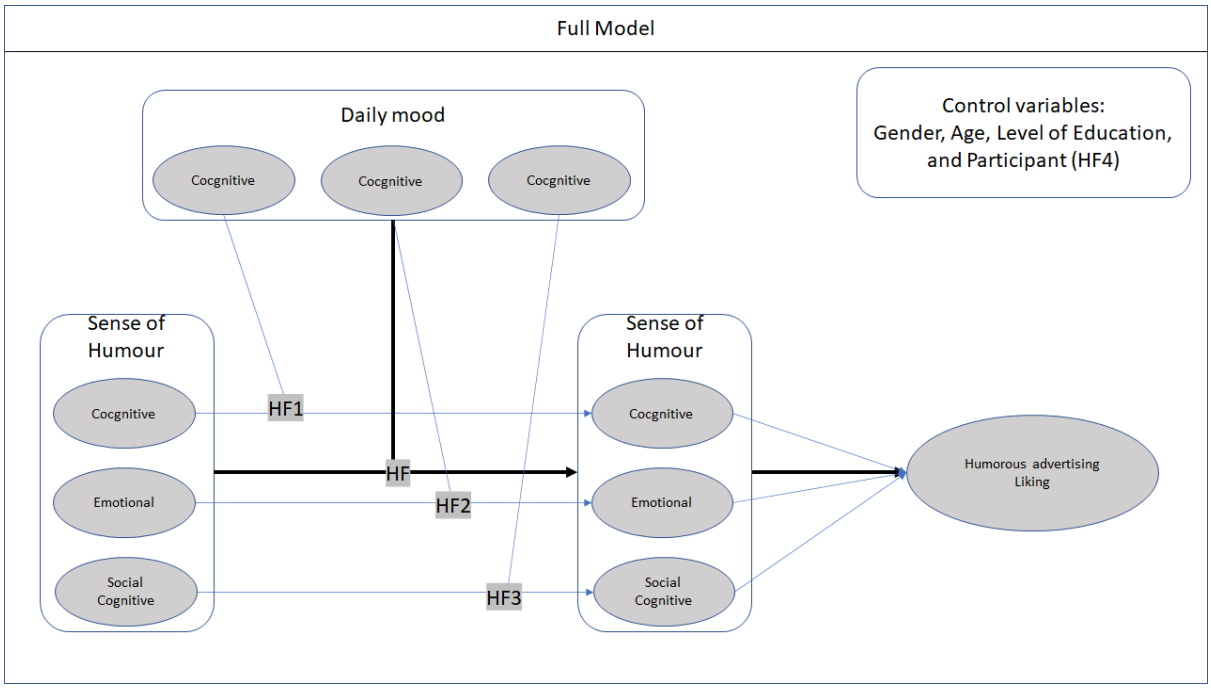

Figure 2-5 - The full model describes the moderated mediation aiming to describe as much as variance of the model to explain more variables of the humour paradox.

The presentation of the full model would not be complete without some pivotal considerations. Firstly, even the full model is not predicted to explain most of the variance. This means that considering the humour paradox, the appreciation of the humorous message depends on other variables not considered by the current study such as crystallised knowledge and intelligence. Another consideration concerns the path linking socio-cognitive sense of humour to disparaging humour and bad mood. This connection is the weakest of the three presented in the model since there is no evidence of connection between sense of humour and the appreciation of disparaging humour (Svebak, 1996, 2010; Romundstad et al., 2016). The path aims to ascertain the correlation between bad mood state and the appreciation of disparaging humour hypothesised by Dworkin and Efran (1967). Therefore, the analysis will also test paths not predicted by the model. Especially the moods which do not correspond to the cognitive, emotional, and social cognitive paradigm. Finally, the model considers control variables. Each one will be identified in the next chapter and used for further multilevel analysis.

The research allows the collection of several examples of humorous marketing communications, both effective and not. The diary-study design can allow other typologies of analysis. Following some points based partly on data collected within the survey, some others that will be extrapolated by the text analysis of the stimuli include:

- The classification of the salience will be represented by asking which element of the message (e.g., the pun, a facial expression, the soundtrack etc.) participants find funny in the message considered humorous and which element they think is meant to be funny in those messages they do not find humorous.

- The identification of typologies of marketing communication (e.g., advertising, promotions, sponsors, product placement, etc) and quantification. Evidences support the use of product placement within humorous contents (Russell and Stern, 2006; Baig, Butt and Khattak, 2019). Much less has been said about the sponsorship of humorous content, especially considering the proliferation of forms of sponsorship in social media videos. These range from open advertisement of the product, to the presence of commercial links attached to the videos and/or product placement, and endorsement (Wu, 2016). Social media also allows the diffusion of consumer-generated content (Castronovo and Huang, 2012) and antibranding (Kucuk, 2015) via new short-forms of communication such as memes. The perspectives are several, but the research will limit to the example reported by participants. The quantification of the different typologies could give an important insight on the entity and the variety of humour as marketing communication appeal.

- The classification and quantification of humour appeals according to product categories. As seen in Chapter 3, humour appeal results are more effective for low need for cognition products. However, most research in the field is based on fictional brands, or real market stimuli presented within the experiment rather than the medium in which they were usually perceived.

- The classification and quantification of humour appeals according to brands. While research has shown that humour appeals are more effective for low-involvement products (Fugate, 1998; Cline and Kellaris, 1999; Janssens and De Pelsmacker, 2005), grey literature has underlined that the use of humorous appeals expands in a wider variety of products beyond consumers' involvement (Wilke, 1997; Blum and McClellan, 2006; Dormon, 2016), especially for the capability humour has in differentiating the brand's image (Hickling, 2002). The diary-study design allows the reporting of a wide variety of examples from the real market.

- What is the rate of change on humour appreciation between self-reported, successful and unsuccessful stimuli? At a within-participant level, the scenario is even more variable. Specifically, the shift from successful to unsuccessful could suggest a decay of interest in the humorous message. The passage of a message from being perceived unsuccessful to successful, on the other hand, could prove that participants have questioned the nature of the incongruity and, consequently, acquired the knowledge necessary to understand it.

- Wherever possible, inferences about brands, brands categories, product categories and communication typologies will all be read in relation to participants' psychographics and sociographies even while considering the small size of the panel considered.

- This study allows the collection of marketing messages which the humorous intention is recognised by the market, but still unsuccessful. The analysis will offer a preliminary investigation on the reasons why humour fails.

- The quantification of communication appeals (sex, fear, two-sided, comparison, gain-frame, and metaphor) coexisting with the humorous message

Given the variety of the stimuli collected it is not excluded that further analyses of the content could be operated.

2.5 - Conclusions

The model of research has been shaped on Mandler's I-A-R structure. The analysis of metaphors in mental states has advanced the hypothesis that humorous figures of speech are linked to the acquisition of knowledge. This is in line with the neurochemistry of humour. It also helps to have a better understanding of the humorous incongruity. The concept of arousal cannot be identified as either cognitive or emotional. Thus, this research has adopted both views. The assumption that the cooperation of both emotions and cognition is supported by the ELI and the CLT theories that investigate the different layers of cues in a communication, and the different approaches individuals have in their understanding.

These considerations have allowed the formulation of different hypotheses of research. The full model (figure 2-5) will be at the base of the following chapters, where the methodology, the descriptive statistics, and the statistical analysis will be presented. It should be noted that the aim of the current research is not to show its functionality in full, but rather, measure the effectiveness of models nested in it that will help to have a better understanding of the dynamics that determine humour appreciation.

The next chapter will show the intended method to test the hypotheses above. Starting from the philosophical implications of quantitative methodology, it will describe the material that will be used to test the hypotheses. Of particular interest is the description of the diary study methodology, especially considering that such methods come from qualitative typologies of investigations, and only

recently applied to quantitative investigations. The chapter will continue by describing the scales adopted to represent the constructs of the hypotheses. Each question will be operationalised in the appendix. Finally, the chapter will conclude with the analytical strategy intended to test the hypotheses, and the description of quantitative and qualitative inferences that will be made according to the messages reported by the participants.

Chapter 3 - Methodology

3.1 - Introduction

This chapter describes the method and the analytical strategy that will be used to test the hypotheses. Starting from the philosophical implications of the quantitative method, it will describe the scales used to quantify the independent, control, and dependent variables considered in the previous chapter. The design is a diary study. Its structure and research implication will be described. Although its use is relatively new in quantitative analysis, this method is useful to identify individuals' scopes of knowledge and, as will be seen, to quantify between and within participant's variations. The chapter will continue with a description of the independent variables, and moderators already encountered in the previous sections, and the related analytical strategies best suiting the research purposes.

Another intention of the current research is the collection and classification of examples from the real market of successful and unsuccessful marketing communications. Potentially, this could give an innovative contribution on the matter of humour as business communication appeal. Among the aims of current research are the identifications of reasons for the success of humour, and the identifications of specimens of the ads (e.g., product/brand, relatedness, typology of campaign. etc.) Furthermore, the comparison between successful and unsuccessful stimuli could help to identify differences and commonalities among the two sets of data. In relation to unsuccessful messages, it could allow the recording of unsuccessful humorous messages considered, not just for their perceived offensiveness. This is in response to the fact that the current literature has recorded unsuccessful humorous messages based on customer complaints generated by the message (Dore, 2018), limiting the investigation to messages considered mostly offensive or outrageous.

The diary-study design has been chosen to cover other perceived gaps in the research, such as recording within-individual variations of humour appreciation. This shortitudinal method (short time-lapse longitudinal design) is best used to observe the effect of daily changes of the emotional context the message is perceived in, but before deepening the discussion about the method, it is relevant to delineate the research philosophy that constitutes the backbone of the current research.

3.2 - Research philosophy.

According to Terre Blanche, Durrheim and Painter (2006) research philosophy defines at least three key main issues:

1) the sum of philosophical assumption and beliefs about the topic under investigation.

2) the typology of relationship or interaction between the researcher and the participants

3) the way people can know or gain knowledge about the phenomena investigated

At first glance, the current research follows the positivistic approach, since its epistemology supports researchers to develop and test hypotheses with a structure of methodological design (Saunders, Lewis and Thornhill, 2012). Previous chapters have also shown a positivistic approach, based on a critical review of the literature aiming to develop a theoretical framework by deduction. Since this research aims to determine some of the independent variables of humour, the approach adopted is based on hypotheses that can be tested and *explain causal relationships* (Saunders, Lewis and Thornhill, 2012, p. 125). The design strategy aims *to describe specific phenomena, to test specific hypotheses and to examine specific relationships* (Malhotra and Birks, 2007, p. 72). Along with the quantification of the variables already discussed with the description of the hypotheses, the qualitative investigation will be based on thematic analysis (Roberts, 2000). This analytical strategy is founded on post-positivist philosophy. Potter (2017) sustains that we are living in a post-positivism era that, although adopting the instruments typical of positivism, it also takes into account the criticism toward the positivistic approach, started by Weber and Simmer, and escalated in anti-positivism, that consider the philosophy as "scientism" or science as ideology (Stockman, 1983).

The adoption of the humour paradox frame already shows that the current research does not share a positivistic view of knowledge. Relativism has undermined the conception of ultimate (or metaphysical) truth that science can achieve (Groff, 2004). Post-positivism follows this concept asserting the possibility of knowledge based not on reaching an ultimate truth, but on warranted knowledge. In substance Putnam (1981) substitutes the metaphysical realism with what they call internal realism. The implications of this view are certainly influenced by social constructionism, which substitutes the ontological knowledge with a the commonly accepted one (Miller, 2007). With the post-positivistic approach the question about the existence of an ultimate truth becomes a problem, since this conception is a matter of faith (hence the ontology of positivism, or, by contrast, its rejection in critical realism (Groff, 2004)).

Parmenides sustains that the being is, and it is all we can talk about. The non-being cannot be conceived, as Plato reports in his dialogue (O'Brien, 2013). In the imaginary meeting between the circa 18-year-old Socrates, and the over 60-year-old Parmenides, Plato forces the older philosopher to answer with just *yes* and *no*. Parmenides cannot defend his thesis, and so Socrates wins. The empirical world, for Parmenides, is nothing but names we commonly accept. In this view, Parmenides is

remarkably close to the critical realism perspective. Our thought can only investigate the being, or, more faithfully to Parmenides, the being *is* the thought (*cogito ergo sum,* Descartes will repeat this two millennia later). According to the older philosopher, we can only think and speak of what exists. We know what we know, we do not know (and cannot know) what we do not know. Socrates adds somehow a twilight zone: what we know we do not know of, identified with the supreme knowledge by Delphi's oracle.

In the 25 centuries that have passed since these two ancient philosophers, philosophy, and more importantly the scientific thought, have systematised what we know into fiction (what we know is not true), faith (what we accept to be true, but not proven), and science (knowledge that is true because it is warranted: mechanistic, provable, and repeatable). Science proves what we know and explores what we know we do not know. We know that we do not know something either from science (from the limitation and further research section of any scientific paper), or from fiction (for example, we know we do not know the mechanisms of teleportation from science fiction novels, and TV series).

The view of this thesis is that science can find a causal relationship capable of expanding human knowledge (intended as a social construct). The achievement of an ultimate truth is not excluded, but it is, with current knowledge (what we know, and what we know we do not know), a matter of faith. The continuous practice of science expands what we know into what we did know that we did not know. The problem is indeed axiological, rather than ontological. Post-positivism believes that research cannot be completely free from human error (Miller, 2007) (such as researcher's bias, improper response to the survey, etc.). Thus science, and the research of truth, are a continuously self-improving exercise. The results of each research expand not only human knowledge, but, at their best, improve or solve the problem they have investigated. To simplify this point, Newton's conception of gravity is way more limited than the one offered by relativity. Newton's theory still helped to have a better understanding of the universe, and although not omni-comprehensive of the phenomenon, it is still partly valid. The approach of current research does not share the positivistic conception that knowledge is based on an *apriorist* objective truth, rather from a human conjecture, that is the epistemic position shared by post-positivism (Lindlof and Taylor, 2011).

The following paragraphs will describe in more detail the design of the survey. It is not based on any connection between the researcher and the participants yet uses a snowball recruitment of participants. This implies that some of the participants will be part of the personal contacts of the researcher. Also, considering the shortitudinal nature of the research, the interaction should be minimal or limited to an email-based exchange, to direct the start and the end of the survey or,

eventually, to overcome problems arising during the execution of the tasks. The second point reported above can help to classify the current research in the post-positivist domain (Potter, 2017).

3.2.1 - Use of statistic and Structural Equation Modelling (SEM)

The last point of the research methodology considered by Terre Blanche, Durrheim and Painter (2006), is inherent in the typology of analysis used by the research. Despite the call for a statistical method capable of measuring the causation (Oppenheim, 1992), at date this is still not possible, if not for some Bayesian methodologies of analysis. The post-positivistic approach allows the use of methods of research according to the scope of the research itself. The current research will adopt the analysis of descriptive statistics, multilevel modelling, and Structural Equation Modelling (SEM). The latter consists of building a model that predicts a set of relationships between variables. It can measure such interactions between latent variables that are not influenced by measurement error (Cliff, 1983). Unsurprisingly, in the beginning SEM was referred to as *causal modelling* (Kline, 2011), however, it is wrong to say that it offers *advantages in providing evidence for causality* (Hair, Babin and Krey, 2017, p. 164). Rather if offers a confirmation of the theory that is based on the background of the model designed. The full model, figure 2-5, shows that the current research has intention to compare three different models (Model B1, B2, andB3), since SEM is a data-driven type of analysis, the use of a sole model could cause that:

> whenever a theory appears to you as the only possible one, take this as a sign that you have neither understood the theory nor the problem which it was intended to solve (Popper, 1972, p. 113).

Therefore, it is preferable to hypothesise the existence of more models nested within the full one and search for the best model fitting the data. This approach can also be read through the lens of the post-positivism philosophy.

Beyond its philosophical implications, SEM is a method of analysis that has been widely applied to marketing research, especially in advertising and communication. Fornell and Larcker (1981) support that SEM's application to business studies is mainly due to its capability to use psychometric and economics indices in the same model. Given the complex nature of business phenomena, SEM also allows the running of several different typologies of statistical analysis on different types of variable simultaneously (Hair, Babin and Krey, 2017; Hair and Sarstedt, 2019), allowing the quantification of the residual error (how much is not explained by the model).

Despite being considered a relatively new statistical tool, among other statistic instruments capable of identifying causality, SEM cannot capture the *subtleties* of the relationship between constructs (Markus, 2010), and can lead to confusion of temporal order with causation. SEM is also largely

dependent on the sample size. On one side, the number of 200 observations is accepted as a minimum requirement (Tomarken and Waller, 2005). Other scholars suggest that the number of participants is depending on the number of items and factors considered, and the levels of mediation and moderations presented in the model (MacCallum, Browne and Sugawara, 1996; Maccallum and Hong, 2010).

The lens of the post-positivist epistemic allows the overcoming of such weaknesses and to focus on the analysis of model fit to verify the hypotheses at least partly, bearing in mind the limitations of current research and the sample sizes restrictions.

3.3 - Necessity for a diary-study design

One of the main purposes of the current research are the collection of real market examples of successful and unsuccessful humorous messages, and the measurement of within and between-individual changes on humour appreciation. The use of an experimental design is not suitable for this purpose since it would include the selection of stimuli object of analysis. These typologies of design, already widely used in humour research, have been criticised in the past (Eisend, 2009) because the selection of stimuli, either from real market or fictitious, limits the study of humour to what the researchers proposing the method find humorous themselves. Considering the humour paradox, current humour research has not yet even established if individual finding the same stimulus humorous do so for the same reason. The psychological approach to the study of humour that current research follows, cannot exclude that different individual have different sense of humour.

A diary-study method best suits these purposes. Such instrument of research facilitates an analysis between and within individual effects even considering the complexity of the full model presented in figure 2-5. Diary studies are shortitudinal instruments able to capture the changes between and within-person on a preselected time base (Bolger, Davis and Rafaeli, 2003). This allows the observation of behaviours in the frame that they happen, such as free time activities when not at work or during weekends (Breevaart *et al.*, 2019), and accounting for the emotional status variations in each individual (Urban-Wojcik *et al.*, 2020) compared to themself and to the rest of the panel of investigation. In addiction to the individual's context of experience, diary study allow the analysis of the genera context, especially considering local and global events that could impact both the production and interpretation of the humorous messages. Since the data collection happened in July 2021, the research was able to observe the release of COVID-19 restrictions in th3e UK, and global sport events such EURO 2020, and Tokio 2020, all condensed in the month of July 2021. This offered the chance to observe more cases of relatedness to events, along to the product/brand that made suitable the use of the diary study design.

One of the first features of a diary design is the timing of observations. Reis and Gable (2000) identify three typologies of timing. The first is based on a specific period (e.g., daily, weekly, etc.). The second is based on the recurrence of the experience analysed by the research such as in Bolger, Davis and Rafaeli (2003). The last consists of the time signalled by the researcher. The format preferred for the current study will be daily, to quantify the recurrence of exposure to humorous marketing messages, with participants invited to fill in the questionnaire at the point of exposure or by reporting the mood at that time in case the immediate record is not possible. This approach is more elastic and minimises the burden caused by the repetition of the task.

Another advantage of the method is the chance for participants to upload pictures (or screenshots), videos, or links of the humorous and non-humorous stimuli. This allows for the collection and direct examination of the material uploaded. Each stimulus will be followed by items quantifying the dependent variables and the mediators. Along with these questions, there will be an open question about why they find the stimulus humorous or not. The latter open question is aimed to allow qualitative investigation of the reasons for the success of the humorous message (the analysis of the stimuli uploaded will be furtherly discussed in this chapter). The tasks, filled in on a daily basis, should last for a week. This allows enough data collection to spot eventual patterns of humour appreciation within the daytime and week time (e.g., participants with a clerical job could be more prone to humour during weekends). A 7-days design allows for overcoming the problem of missing data, although participants not finding humorous message or a non-humorous message for a day will still be required to record their moods. Moods are moderators or independent variables according to the model tested and, therefore, they could be the cause of temporary loss of humour (or less predisposition to it).

3.3.1 - Strengths and weaknesses of diary studies

Initially used in qualitative investigations, diary studies are a versatile research tool for their capability of capturing changes within the same participant on a specific temporal basis. From a statistical point of view, they are longitudinal studies. However, they do not focus on the variance over time, like longitudinal studies do. Rather, they collect variance within the same individual and between individuals in a short time lapse: therefore, their use has been extensive in multilevel analysis, organised as a cross-sectional analysis. A diary study allows the isolation of several layers of influences to identify, within the same individual, the effect of daily changes, either external to the individual, such as the alternance weekdays versus weekend days, or internal to the individual, such as moods, emotions, and reactions to specific events. Reis and Gable (2000) specify how diary study can be

effective for several research purposes. One of the best reasons for their applications is that they allow the comparison of competitive predictors such as moods and cognitive action. Moods, for example, are among conditions that can change in a short period (usually daily or weekly) and can affect processes such as humour appreciation. The authors also recognise the potential of the method in describing within-person processes from individual differences. Another important role of the method is the chance to analyse the phenomenon outside of the boundaries of the laboratory. All the elements thus identified by Reis and Gable particularly suit the purpose of current research.

A wide application of the method has been seen recently in psychology and social psychology quantitative research. The interaction of emotion and cognition is one of the privileged fields of such method. For example, Schwartz *et al.* (2021) used a diary study design to quantify the process of acculturation of college students of Hispanic origins (first and second generation). Similarly, Klimstra *et al.* (2010) applied the method to analyse the contribution of daily dynamics in identity-formation among adolescents, where they abandon the identity of children by developing a behavioural frame made of values, norms and ethics. In sociographic studies, Mahadevan, Gregg and Sedikides (2020) used the method to investigate the effect of status (intended in the paper as being respected and admired) on interpersonal behaviour. Diary studies also offer the chance to study certain phenomena while they happen, outside of the laboratory. Thus, Buecker *et al.* (2020) analyse the effect of COVID-19 lockdown on sense of loneliness among German participants. Some research in business studies using quantitative versions of diary studies have investigated workplace incivility (Vahle-Hinz, Baethge and Van Dick, 2019), workplace bullying (Rodríguez-Muñoz *et al.*, 2020), and entrepreneurs' stress-wellbeing balance (Wach *et al.*, 2020). Examples of quantitative diary studies in marketing include measuring the influence of social network websites on individuals' wellbeing (Wenninger, Krasnova and Buxmann, 2019), and loyalty scheme effectiveness in retailing (Smith *et al.*, 2003) among others.

The adaptation of a diary design to quantitative research purposes is still relatively recent. One of the biggest downsides the method presents is the risk participants can drop the experiment. As already seen, this can depend on the length of time needed to fill in the questionnaire (Reis and Gable, 2000). To overcome this problem, some solutions have been adopted by different papers, in relation to the specifics of the research. Buecker *et al.* (2020), use short versions of the scales, like the 4-items scale to measure loneliness. However, some other research might need several factors resulting in a bigger number of items. An interesting solution to this problem is the use of the full scale for the first and the last days of the diary, while the rest of the daily questionnaires only use one item per scale (Klimstra *et al.*, 2010). Statistically, the missed items are substituted with the individual's standard deviation for the other items. This procedure is useful for factors or multifactors that have many items. The current

research adopts fewer factors represented, each one by shortened scales. Such strategy is in line with the statistical analysis since this allows a minimal degree of variation on a daily basis for each participant, necessary to differentiate the sense of humour quantification for each day. It consists of shortening, as much as possible, the scales themselves by considering only a limited number of items (usually between 2 and 4) for each sub-factor. This solution has been adopted in other research by different authors such as Bäulke, Daumiller and Dresel (2019), Wenninger, Krasnova and Buxmann (2019), and Wach *et al.* (2019). Considering the 4 multifactor predicted by the research, broken down into 10 factors with no more than 3 items each, the execution of the task will remain below the 15 minute limit proposed above to avoid burden (Reis and Gable, 2000). The diary study proposed will be neatly divided in two stages. The profiling questionnaire will collect data about the control variables and the independent variables identified in the previous chapter, together with sense of humour that consists in a moderator. The daily task will measure the mood as a moderator, dependent variables of the humorous mechanisms, and the liking of the marketing messages. A further section will be dedicated to the quantification of the salience that will mostly be based on open questions.

3.4 - Scaling and questionnaire structure

Conducting surveys can generate a well-represented and generalised set of data that can be gathered quickly (Blaxter, Tight and Hughes, 2006). One of the main criticisms to surveys is the appropriateness of the data collected. This is obtained through the use of instruments supported by literature aiming at conceptualise reality as variables (Punch, 2003). Other criticisms are concerning the response of participants that is assumed to be consistent and genuine. The latter problem has already been discussed with the burden avoidance of the daily task.

Internet-mediated research (IMR) enables the researcher to administer a survey online. The advantages of IMR are the practicality of collecting data reducing manual input and consequential increase of mistakes or missing values(Hewson, C., Laurent, 2008). It also avoids the reproduction of interviewer biases and preconceptions in recording the answers (Hewson, C., Laurent, 2008). Inconveniences of internet surveys are its lack of versatility in suiting individual differences, as well as with the length of the survey. Considering that the survey is internet based, this could limit the selection of participants according to their own internet-related skills (e.g., the capability of uploading material, access to connectivity, etc.). It could be possible that participant's age will be skewed younger, with older participants being less internet capable. However, although recording the age, the research aims to use the datum only marginally.

Compared to other study designs, diary studies allow a smaller number of participants, because the repetition of the tasks for each participant still lead to a number of observations that can achieve statistical validity. In general, 200 observations are predicted to allow normal distribution. Considering that each participant should record 7 observations (one week), that can reduce the number of participants required. Intention of the research is to recruit at least 30 participants. This should allow enough stimuli recording. The recruitment will follow mixed recruiting procedures (snowball, and internet based). The minimum number of 30 participants, assuming each participant completes the task for each day, should record 210 successful and 210 unsuccessful humorous messages. Even considering some tasks missed for a day, or participants dropping out of the project before its completion, this should still allow a comfortable number of observations. A better variation of the research could be achieved by a high heterogeneity of participants according to the control variables accounted for.

This research is based on the daily task of recording a marketing message (advertising, sponsoring, product placement, viral advertising, guerrilla marketing, etc.) participants find humorous, and another in which they recognise a humorous intention, but that they do not find funny. The questionnaire is based on 7-days of task that are mostly the same each day. However, the recruitment of the participants will be followed by a preliminary questionnaire that will collect most of the independent variables, not changing daily. The two different questionnaires will be discussed in the following section. They are reported in appendix (2 and 3).

3.4.1 - Recruiting questionnaire

The profiling questionnaire will be taken within the week before the task start. After the legal disclaimer, it will continue by describing the daily task. Participants will be invited to upload a link to both the message they find humorous and the one they do not or, alternatively, a screenshot or a picture of them. This limits the survey to participants with at least a minimum of comprehension of smartphone technologies. The introduction will follow with a definition of humour, making clear its differentiation with laughter, and the definition and range description of marketing communication. The same message can be upload in different days if the appreciation of its humorousness has changed. The questionnaire (appendix 2) will start by asking the email address. It will be used to identify the participant. The contact is also necessary since the upload of the marketing messages could be faulty or difficult to retrieve. In the latter eventuality the email address will be a pivotal contact for the participant and to correct the error. The address is also necessary to deliver the reward

for participating that consists in a restaurant voucher. The questionnaire will also collect the control variables considered by the research (age, gender, level of education, field of education, occupational status, job position).

The recruitment questionnaire also includes the measurement of the sense of humour (Svebak, 1974, 1996, 2010; Romundstad *et al.*, 2016). The scale adopted recognises 3 dimensions of the sense of humour: emotional, cognitive, and social-cognitive (Svebak, 1996).

3.4.2 - Daily task survey and scaling

Appendix 3 reports the questionnaire for the daily survey. The daily task can be divided in three sections. The first collects the daily sense of humour (SHQ) and the mood (STCI). The second records the successful humorous stimulus and records the self-reported mechanism of humour (MEC) and the humorous advertising liking (AL). The third section records the non-successful humorous message and the reason why it is not considered so, along with the related MEC and AL.

The questionnaires open with the 6 items of the sense of humour scale, mixed to the 9 of the STCI (daily moods). Psychology has investigated the impact of some important states of mind on humour. These can be caused by intrinsic conditions (such as feelings, moods, cognition etc.) and/or contextual situation in which humour happens. Ruch, Köhler and van Thriel (1997) elaborated a three degrees scale of attitude to respond to humour: *state of cheerfulness, state of seriousness* and *state of bad mood*. Arguably, each degree of the scale still has a good chance to lead to humorous behaviour. A grumpy person, for instance, could be better disposed to certain forms of humour classified as aggressive or negative (e.g. cynicism and sarcasm) (Dworkin and Efran, 1967).

Rather than an effect of the state of mind of the individual, humour appears linked to an intrinsic personality trait. This shifts the investigation from objective to subjective, together with the analysis of the situation in which humour occurs (Ziv, 1979). Despite the promises, there is to date little research to quantify the effect of mood change on humour appreciation within the same individual. The current research will consider the mood changes within a person as an important moderator of humour appreciation affecting the mechanisms of appreciation and the humorous message liking. The State-Trait Cheerfulness Inventory (STCI) measures emotional-related traits that affect humour appreciation both quantitatively and qualitatively (Casu and Gremigni, 2012). The scale has been used to measure humour-related moods during different periods such as weekly and daily. Following the need to shorten the questionnaire to avoid the participants' burden above discussed, the research will

consider three items for each trait. Specifically, the scale recognises three states: cheerfulness, seriousness and bad mood (Ruch, 1993; Ruch, Köhler and van Thriel, 1997; Ruch *et al.*, 2011). The scale, in the version that measures the states, has been progressively shortened as in the work of Hofmann, Carretero-Dios and Carrell (2018), that reduced the number of items to 20 per state. This research will select some items from the STCI-S 30. Ruch, Köhler and van Thriel (1997) also confirm reliability of the scale that explains over 60% of the variance (Eigenvalue=63%), considering that cheerfulness and bad mood tend to be bipolarised, with seriousness consisting in the third dimension. Each state will be measured with three items on a 7-points Likert scale reported in appendix 4. A confirmatory factor analysis will be undertaken to measure the consistency of the instrument in relation to each of the three factors (states). The analysis will measure the impact general sense of humour has on mood changes, considering the state changes as an effect of sense of humour. The moderating effect of state-trait changes will be considered in a hierarchical model according to within and between individual differences.

The questionnaire continues by recording the message considered humorous and by quantifying the mechanisms of humour it activates. The file upload (a picture, a screenshot, a link or, in absence of them, a short description of the message including the media where it was perceived, and the product/brand advertised) will be followed by two questions: one asking if the participant was exposed to the message spontaneously or if they actively searched for it. The second will be an open question asking which element of it they find funny. The questionnaire will adopt the four-item humorous advertising liking questionnaire from Chattopadhyay and Basu (1990b) to quantify the message liking. The selection of the stimuli already supposes that they find it humorous, but an extra item intended to quantify how humorous the message is. The adaptation of the scale presented by Chattopadhyay and Basu will be minimal. The only change will regard the use of *advertising* switched with a more generic marketing message, in order to include other forms of marketing communication (product placement, viral marketing, sponsors, etc.). The advertising liking scale has been tested for reliability with a Chronbach's α of .91 (Chattopadhyay and Basu, 1990b). This research will compare its results to the one presented in literature.

Following the research questions presented in the previous chapter, the three main theories of humour offer a chance to identify three different ways humour is appreciated: via cognitive mechanism (I-R), affective (A-S) and disparagement mechanisms. Such a view of the classical theories of humour is based on identifying each of the three theories as mechanisms of humour presented by Spielmann (2014). This scaling will be used to quantify the self-reported measurement of these mechanisms. Unlike Spielman's research, there will not be a classification of the message based on the researcher's

inferences. The position of current research is not to consider the way (or path) humour is appreciated as intrinsic to the message. Each mechanism activation depends on individual differences and knowledge beyond the intrinsic nature of the stimulus. Therefore, the model will consider that different mechanisms will be activated according to different knowledge patterns interaction. Humour can be appreciated as a predominantly cognitive, affective, disparaging element, and combinations thereof. The use of humour mechanisms is identified by Spielman with the classic humour theories, excluding disparagement. A unified theory of humour would overcome the dichotomy between I-R, A-S, and disparagement.

This third mechanism has already been anticipated in the neural correlation of hostile jokes. The perception of one of these mechanisms as stronger over the others could suggest an indication of the taste preference of cognitive, affective, or hostile humour, depending on the mood-moderating effect. The selection of the items from Spielmann's research will be based on the exploratory factor analysis presented in table 2 in Spielmann (2014, p. 1899). The I-R already presents 3 items, therefore they will all be selected. The items' wording will be adapted to fit the polar scale presented in the advertising-liking scale. Following a similar approach, disparagement will be measured by three items derived from literature: mocking/non-mocking (Vanden Bergh *et al.*, 2011), laughing-at/laughing-with (Papousek *et al.*, 2017), and teasing/non-teasing (Keltner *et al.*, 2009). A confirmatory factor analysis should verify validity and reliability of the scales. A hierarchical regression will aim to identify individual and group taste based on the preferred or most recurrent mechanisms. Further, the regression will include the dependent variables to measure the effect of each mechanism's factor.

Finally, participants will be requested to upload a file of a marketing message they think has a humorous intention, but that they do not find humorous. These messages will be followed by an open question about which element they think was meant to be funny and will continue with one multiple choice question intended to record why participants did not find the message humorous. Some of the options have been derived from the relevant literature such as *offensive* (Dore, 2018), *difficult to understand* (Bell and Attardo, 2010), or *too simple* (Petty and Cacioppo, 1986). The option *I no longer find it humorous* is strictly inspired by the humour paradox. The final choice *other* allows an open answer window where participants can specify why they do not find the message humorous. The collection of such elements will be integrated in the text analysis that will quantify the salience of the humorous and non-humorous messages. The aim of this latter part of the research is predominantly to collect data about unsuccessful humour. Non-humorous messages will be quantified similarly to the humorous ones for message liking and mechanisms.

3.5 - Analytical strategy

The analyses relative to the scaling has already been reported above. This paragraph describes how the hypotheses will be tested and the data manipulation necessary to do it.

For the correlation between humorousness and advertising liking (hypothesis A) the inclusion of the item relative to the humorousness in the scale will be enough to show (or not) a correlation between advertising liking and humorousness. Eventual collinearity would indicate the highest correlation between humorousness and advertising liking. Further analyses will be made to see the impact of the correlation between humorousness and advertising liking between groups according to the control variables, sense of humour, and mood states predominantly. The assumptions will also check the scales used for reliability. Exploratory and confirmatory factor analyses, and comparison of Cronbach's alpha with relevant literature will ascertain the numerical quality of the data collected.

The stimuli selected by participants, accordingly, will form two sets of data. One consisting of the material uploaded that has been identified as humorous (humorous set of data), and the other that they did not find humorous despite recognising its humorous intention. Stimuli from both sets of data will be coded following relevant research. Brands and products classification, especially according to high and low involvement typology of product, will help to identify whether there are sectors and brands more likely to use successful humorous appeals, following the comparison of the two sets of data. Attention will be paid to the identification of figures of speech following an adaptation from Greenlaw (1996), the humour format adapted from Tsakona (2017), the relatedness to the product/brand or event, the coexistence of other appeals following Hornik, Ofir and Rachamim (2016, 2017). All these classifications will be compared between both sets of data, to spot eventual trends determining the success of humorous marketing messages.

Most of the hypotheses (HB, C, and D 1-3) will be tested by measuring and comparing models nested within the full model (figure 2-5). The model comparison will be made using SEM techniques already discussed above. The main parameters of model fit comparison will be the χ^2, comparative fit index (CFI), Tucker-Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMSR).

SEM techniques will also be used to test each hypothesis 4 (B4, C4, D4, E4, F4). In the specific multilevel modelling enables the quantification of the variance and how much of it is dependent on the individual (within individual analysis). This will determine what weight the individuality has on the humour paradox.

3.6 - Data collection

In the last few decades, the increase of research costs has caused a shift from postal to internet-based data collection fueled by the practicality of these technologies. The advantages of postal collection are a higher response rate, and the possibility for participants to respond within their own time (McDonald and Stewart, 2003). Some research better fit alternative real-life collection procedures. This can depend on the age and the skills of the participants (Sandstrom and Cillessen, 2003). Since diary studies have been applied for quantitative research, the electronic format has become more used (Bolger, Davis and Rafaeli, 2003; Navarro, Arrieta and Ballén, 2007). The current study consisted of the uploading of marketing communication links. The pilot was run in May 2021 and involved two participants. Outcomes were aimed on checking the accessibility of the survey. The pilot included one day for the recruitment questionnaire, and two days of the data collection questionnaire. The daily questionnaire took around 10 minutes for each pilot. This result encouraged the use of the scales predicted by the research. The structural and linguistical corrections resulted in the format reported in the tables of operationalizations (appendix 2 and 3).

Participants settled in Norwich were offered the reward for a local restaurant voucher. Along with the already established snowball recruitment, and to increase diversity of response, participants were also recruited online, in exchange for a £10 Amazon voucher.

3.6.1 - The context

The questionnaires were uploaded on the Qualtrix website and shared via an anonymous link. Two recruitment questionnaires were used: one for the snowball recruitment, and another for the online recruitment. The snowball recruitment questionnaire was run from 28th June to 25th July 2021. The online recruitment questionnaire went live on 12th July and was published on Facebook groups (UEA mature students, and PhD support group). It too was closed on 25th July 2021.

Some events worth noting occurred during the period of the research. On 21st June 2021 the British government cancelled many restrictions previously caused by COVID-19 (Gov.uk, 2021). After months of lockdown and strict rules of social distancing, individuals were going back to a pre-COVID lifestyle. This meant a more relaxed approach to COVID-19. The current research can mark an important line about the fortune of messages related to such event. Two major sporting events took place in July 2021: the Euro 2020 football cup, which was of continental impact, and Tokyo 2020, which attracted global coverage. Both events were rescheduled from the previous year, having been postponed due to restrictions during the early months of the COVID-19 pandemic. Euro 2020 was a mega-event hosted in 12 countries to reduce the spread of COVID (Ludvigsen, 2021), and had a huge impact on social

media. The final game was held on 11th June in London, with Italy defeating England on penalties. The strength point of the current research is that most participants are British with also some Italians (most of them living in the UK). Thus, the sport event was particularly relevant for the poll selected.

The Olympic Games of Tokyo 2020 have been recognised as a global event with a lesser interest in nationalism and a higher interest in communities (Mōri, 2019). Another notable effect of Tokyo 2020 was the increase of interest in the Paralympics (Kolotouchkina *et al.*, 2021) compared with previous editions of the Olympic Games. Both trends were detected by current research.

3.7 - Conclusion

The research started with the intention of finding a specific way to relate humorous messages to the target market. The analysis of the relevant literature has shown a lack of research about the causes of humour appreciation. This is mainly because of causes synthesised by the humour paradox. This chapter has identified the post-positivist epistemology. It has continued with describing the methods that the research will follow. The diary-study design allows an insight into the causes of humour success and failure, not only between individuals, but also, within the same individual. The design proposed allows a quantification of the humorous taste by following Spielmann's theorisation of the coexistence of different mechanisms of humour. The impact of daily moods, furthermore, will be studied to determine shifts of taste, humour appreciation and message liking. The use of the Sense of Humour questionnaire will also be tested by accounting for the correlation between individuals' daily shifts on mood. Each scale used by the research was already tested for reliability, although some of the versions used in the questionnaire (appendices 3, and 4) have been adapted and shortened to fit the purposes of a diary study: therefore, it is not necessary to include them in a pilot testing, rather their interaction in the models presented consists of the research itself. However, there will be a preliminary testing of the questionnaire to check the language and the accessibility of the tasks.

Chapter 4 - Analysis

4.1 - Introduction

The data collected were initially explored with descriptive statistics. Since some inputs were constituted by open questions, follows the coding of such variables. Particular attention was paid to the selection of those stimuli, and scales' items fitting further analysis. The coding's section reports qualitative inferences, especially regarding the role of figures of speech in humour, the brands and products involved in its use, the recurrence of relatedness, the role of humour typologies used, among others. Results from such classification will be integrated with relevant literature. The scales used in the research will be checked for reliability with Exploratory (EFA), and Confirmatory Factor Analysis (CFA). It will follow the analysis of the assumption necessary to assess the quality of the data and to decide the appropriate estimator. The scales so built are then part of Structural Equation Modelling (SEM) analysis and the multilevel analysis. The SEM analysis investigates the relationships between the variables without considering that they are nested within same individuals. The multilevel analysis will further investigate this point.

4.2 - Descriptive statistics

The analysis of the control variables aims to describe the set of observed variables that help to describe and identify the participants. Variables collected were gender, age, level of education, employment status, and type of employment. Following the fashion of diary studies, each participant was coded according to such variables. Each observation strictly shows a stimulus as it is perceived by an individual, with more observations being accountable for the same individuals. This peculiarity of diary studies created the necessity to specify two more facets of these descriptive statistics. Firstly, some stimuli are reported multiple times by different participants. In the second instance, the set of non-humorous data also collected the self-reported reason for their failure.

4.2.1 - Participants

A total of 52 individuals completed the recruitment questionnaires (44 snowball; 9 online) of which one completed both (the snowball recruitment one was deleted since the participant N32F3ENG preferred the version answered in the online questionnaire). Of the 52 individuals only 35 proceeded to complete the daily questionnaire. Two participants dropped the experiment after the first day. Their responses were not considered in the experiment since a diary study necessitates more observations

for each participant. The research counts 33 participants (female=17) who completed more than one daily task. To comply with data protection, participants' identity was converted into a code synthesised in figure 4-1. This way of coding follows the tradition of diary studies, helps to identify generalities of each participant, and reduce confusion with the numbering, that in this research refers to each stimulus uploaded (i.e., the humorous, or non-humorous stimulus).

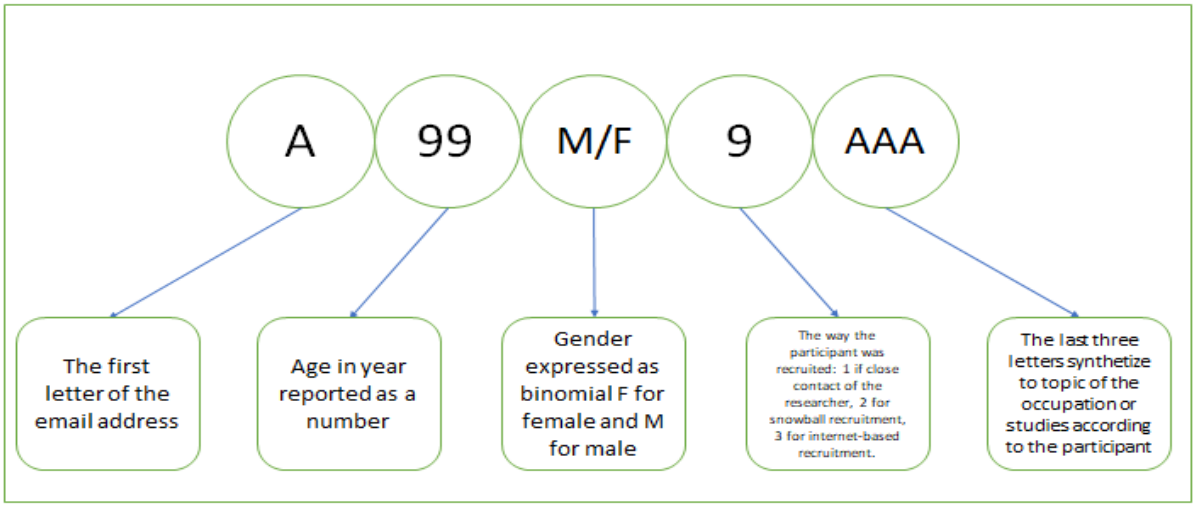

Figure 4-1 - Coding of participants' identity. The first letter is the initial of participant's email address. Follows their age expressed in years. Follows the gender (M/F), the type of recruitment (with 1 being a personal contact of the researcher, 2 a snowball recruitment, and 3 an on-line recruitment). Last three letters synthetise the participants' work or study background.

The daily questionnaires were run for one week, aiming to obtain 7 responses from each participant. The questionnaires were run for three sessions: week 1 from Monday 12th to Sunday 18th July; week 2 from Monday 19th to Sunday 25th July; and week 3 from Monday 26th July to Sunday 1st August 2021. Some participants did not complete the whole week. Only E18F2ALE completed more than 7 days since they thought that the experiment was running for more than a week. Some days are recorded in the same date but with a different time. Usually in such cases it is evident that the participant was completing the task after midnight. Only L30M1OTH did not follow the order in which they received the links, missing some dates and some tasks. Table 4-1 shows the full report on tasks fulfilment. The total number of observations for marketing messages considered humorous was 224, while the total number of stimuli perceived as non-humorous was 226. Some follow-ups contact with the participants was necessary to retrieve those links that were not working. Most of them were successfully rescued.

Table 4-1 – Participants' attendance						
Participant	Week	Notes	Humorous	Notes	Non-Humorous	Notes
A19F3PSY	1		7		7	
A39M1E&T	2		7		7	
C64M2LAN	1		7		7	
C55M3ECO	1	Sunday's stimulus was recorded on Monday the 19th since he could not fill the one for Sunday the 18th	7		7	
D33M1MEC	2		7		7	
E24M3A&F	1		6	one link was broken, and the participant was unable to recall the message	7	
E18F2ALE	1		8	participant continued the survey on the following Monday	8	participants continued the survey on the following Monday
E24FHEA	1		7		7	
E30F1HSC	3		7		7	
F46M1CHE	1		6	the Tuesday's response was deleted because containing personal information	6	the Tuesday's response was deleted because containing personal information
G46M1A&D	1		7		7	
H32M1DRA	3		5	Tuesday did not upload any message. The link for the message of Wednesday was broken and the participant could not recall the ad	6	Tuesday did not upload any link
I35F3LAW	2		7		7	
J27M3GCS	2		7		7	
J17F1PHE	1		7		7	
J29F2ARC	2		7		7	
K34M1NCU	3		7		7	
K20F1GRA	3		7		7	
K28M3MAR	2		7		7	
L30M1OTH	1	A little messed days but he got all the responses in…	7		7	
M17M2PSY	1		7		7	
M43F1LIT	2		7		7	
M46F3PSY	1		7		7	
M30F3PHY	1		4		4	
N32F3ENG	2		7		7	
N39F2LIN	1		7	Sunday's stimulus' link was not working link so was substituted with a different link and format of ad	7	
O30F2ENG	3		7		7	
P58M1BAN	1		7		7	
S36F3ART	2	Started in week one but proceeded in week 2	7		7	
S17M2POL	1		7		7	
S42F3PSY	3		7		6	Wednesday's ink broken, could not recall the ad
S45F1CHE	1		7		7	
V41M1CAT	3		6	Sunday's link is the same of Friday. Could not recall the correct one	7	
Total			224		226	

Table 4-1 - Attendance of participants in the research: the week they took the research, the number of humorous stimuli and the number of non-humorous stimuli they uploaded, with the total at the bottom.

Generally, the research received positive feedback from participants. Usually, the recording of the first observation was the toughest, however, participants found enjoyment in the following tasks once the

burden of the questions became a routine. Only L30M1OTH did not correctly answer the question regarding which element they found humorous in the ad; instead, they wrote a description of the stimulus. C55M3ECO completed the Sunday survey on the following Monday's link since on the Sunday he did not have time to look for a stimulus. Participant F46M1CHE's Tuesday's stimuli (both humorous and non-humorous) were excluded because they contained sensitive information. V41M1CAT uploaded the same link twice (on Friday and Sunday) for the humorous stimulus; however, Sunday's observation has been deleted since the link also contained other stimuli and the participant could not recall which they found funny that day.

4.2.2 - Age and level of education

Age was recoded according to the distribution of the participants as shown in table 4-2. The age range is well distributed with 6 participants being 20 years old or under. The largest group (N=9) describes participants between 21 and 30 years old. Participants of an older age (51 years or more) are the smallest group (N=3).

Table 4-2 - Coding of age variable

	Per participant			Per observations		
Age range	Frequency	Percent	Cumulative Percent	Frequency	Percent	Cumulative Percent
1.00 (20 years of age or less)	6	18.2	18.2	43	19.2	19.2
2.00 (between 21 and 30 yo)	9	27.3	45.5	59	26.3	45.5
3.00 (between 31 and 40 yo)	8	24.2	69.7	54	24.1	69.6
4.00 (between 41 and 50 yo)	7	21.2	90.9	47	21.0	90.6
5.00 (51 yo or more)	3	9.1	100	21	9.4	100.0
Total	33	100		224	100.0	

Table 4-2 - The age of participant, expressed in years, was recoded according to 6 points with 10 years ranges, except the first (up to 20 years) and the last (51 years or more).

The level of education's distribution across the 33 participants is reported in table 4-3.

Table 4-3 - Distribution of the level of education

		Frequency	Percent	Cumulative Percent	Mean age (in years)
1	High school graduate	9	27.27	27.3	31.6
2	Some college	5	15.15	42.4	35.8
3	2-year degree	2	6.06	48.5	19.5
4	4-year degree	6	18.18	66.7	32.61
5	Professional degree	8	24.24	90.9	32.25
6	Doctorate	3	9.09	100.0	54.7
	Total	33	100.0		

Table 4-3 - Distribution of the level of education across the participants. The mean age shows that age and level of education are not correlated.

Overall, the small number of participants (N=33) does not allow critical comparison to national and international levels of education. However, it is noticeable that half of the participants (N=17) has a 4-year degree or more. The age and the level of education seem correlated, with higher age indicating

higher level of education. Only people in possession of a doctoral degree (N=3) have a mean age of 54.7 years. Two of the three participants older than 50 years held a PhD. Participants in possession of a two-year degree (bachelor's degree) are only two and with an average age of 19.5 years.

4.2.3 - Repeated stimuli and theoretical implications

One of the main postulates of the current research is that humour is a mental state. This makes it impossible to classify *a priori* humorous messages according to cognitive or emotional frames, contrary to other research. The full list of the stimuli uploaded simultaneously by different participants is reported in Appendix 5. A total of 48 stimuli were repeated, of which 34 were reported twice. Six stimuli were reported by three different participants, and seven by four participants. Only one stimulus was recorded by seven different participants. The total of repeated cases is 122, consisting in 27.11% of total stimuli (N=450). More importantly, of the 48 repeated stimuli, ten (20.8%) are all in the humorous dataset, while 17 (35.4%) are exclusively non-humorous. Nearly half of the repeated stimuli (43.75%) are either humorous or non-humorous, according to different participants.

Of the 17 stimuli that are exclusively recorded as non-humorous, six were recorded as offensive by all the participants that uploaded them, confirming the higher risk of failure for offensive humour (Dore, 2018). Despite the repetitions, there is an important qualitative element consisting of the fact that there are no cases of repeated stimuli in which different participants identified them to have the same humorous trigger (see appendix 5). This outcome allows the research to consider each stimulus interpreted by the participant as the unit of investigation.

4.2.4 - The reasons why humour fails.

An important quantification this research offers, allegedly the first in the field, is the reasons for humour failure, and the quantification of the advertising liking related to each one. Along with the multiple choice offered by the research (see table of operationalisation in appendix 4), the answer allowed the option of "other" as an open answer. Table 4-4 report the distribution of the answers.

Table 4-4 – Quantification of the reasons for humour failure					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I no longer find it funny	32	14.2	14.2	14.2
	It is difficult to understand/took too long to understand.	6	2.7	2.7	16.8
	It is offensive toward me or others.	44	19.5	19.5	36.3
	It is too simple/too silly	70	31.0	31.0	67.3
	Other (specify)	74	32.7	32.7	100.0
	Total	226	100.0	100.0	

Table 4-4 - Reasons for humour failure as self-reported by participants

The 74 open answers were further coded to detect other reasons for humour failure not included by the model. Some answers were recoded according to the predicted options. For example, case 141 reported in figure 4-2 participant K20F1GRA describes it as "over used/boring/ simple use" and was coded as "too simple/too silly".

Figure 4-2 - McDonald's billboard. image available at the link https://www.globalconsumersolutions.com/wp-content/uploads/2017/02/Humour-in-advertising.jpg accessed in August 2021.

Concepts related to boredom were also associated to the simplicity of the message, unless the participant stated that the message, usually videos, were too long. In the latter cases they were coded as "It is difficult to understand/took too long to understand". The sense of irritation was associated to one of disgust, here intended not just as physical disgust, but also mental. Several responses, although not strictly offensive toward the participant or others, were considered immoral or contrary to their

own ethics. For example, for stimulus 148 reported in figure 4-3 participant M43F1LIT comments that "it somehow hints to violence" and was coded as offensive.

Figure 4-3 - The Durex ad is perceived as inciting to violence. It wasa coded as offensive. Image downloaded at the link https://www.kafe.cz/galerie/25-nejvtipnejsich-reklam-na-tema-bezpecny-sex-35314.html?photo=16, accessed in September 2021.

The messages that were instead identified as something not predicted by current research include biographical reasons, disgust and irritation, detachment from reality, and fear. Table 4-5 synthesises the descriptive statistics for all these cases. It shows the effect of the reasons for humour failure on humorous advertising liking, using as baseline the mean for advertising liking of successful humour (H mean=28.05). Messages stimulating biographical memory, fear, and messages no longer found funny, show a lesser negative impact on advertising liking, while disgust (and annoyance), and offensiveness have the lowest rate of humorous advertising liking. Cognitive reasons for humour failure (simple, or too difficult) have a medium range of non-liking, around 15 points (with 21 being neither agree nor disagree).

TABLE 4-5 - mean comparison grouped for the reason the message was non-humorous								
	N	Advertising liking	Std. deviation	Humorousness	Pleasantness	Likeability	Non-Irritability	Interestingness
Biographical	2	**21.5**	2.5	3	3.5	**4.5**	**5.5**	**5**
Disgust	23	10.18	0.98	1.82	1.91	1.91	2.14	2.11
Fear	2	**21.67**	12	**4.33**	**4.67**	**4**	**4**	**4.67**
I no longer find it funny	33	**18.09**	1.19	3.15	**3.91**	**3.85**	**3.58**	**3.61**
It is difficult to understand/took to long to understand	9	15.3	2	2.9	3.3	3	3.2	2.9
It is offensive toward me or others	59	12.08	1.05	2.3	2.4	2.04	2.04	**3.32**
It is too simple/ too silly	94	15.1	0.54	2.68	**3.51**	3.15	3.05	2.71
Lack of knowledge	3	20.66	1.2	3.5	**4.25**	**4.25**	**4.75**	**3.25**
Unrealistic	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Values for the humorous set of data	**224**	**28.05**	**6.54**	**5.78**	**5.5**	**5.82**	**5.83**	**5.13**

Table 4-5 - Comparison of the mean for advertising liking with the reasons for which participants did not find them humorous.

The table shows that not all failing humour undermines the humorous advertising liking. This result adds to the literature related to the failure of humorous advertising and adds that individuals can still develop positive feelings toward the message, and consequently, toward the product/brand (Strick *et al.*, 2010) even when humour fails. In cases where the humour has faded, humorous messages correlated to biographical events of the target-market, and humour that fails for lack of the knowledge necessary for understanding the message, are all associated to neutral or even positive message liking. By contrast, disgust, irritability, and offensiveness are indeed a real threat, because those reactions are associated to the product/brand, confirming what was already discussed by Dore (2018) among the risks of controversial humour.

The next section will discuss the coding and some descriptive statistics intended to identify other aspects literature has so far hypothesised about humorous marketing messages.

4.3 - Coding

Coding included several variables hereby described along with the theoretical support. The brand/product aimed to determine which markets use humour (Flaherty, Weinberger and Gulas, 2004). Specifically, it aimed to identify high involvement products, to spot whether the use of humour was successful or not. The relatedness to the product/brand or event was coded by linking cognition of the product/brand to the humour, since it neutralises the vampire effect (Eisend, 2009). To measure humour as a meta-appeal, the research used the frame offered by Hornik et al. (2016, 2017) that

counts three emotional appeals (sex and fear, along with humour), three rational (comparative, gain-framed, and two-sided), and one appeal that is both rational and emotional (metaphors). While the meta-study uses the concept of metaphors, the research uses the one of *figures of speech*. Starting from some figures of speech intrinsically humorous such as irony (Giora, Fein and Schwartz, 1998), figures of speech are identified as violations of linguistic rules (Krikmann, 2009). However, research has not yet find out why some figures of speech result in humorousness and some others not (Attardo, 2015). They were coded identifying which specific figure of speech the humour was expressed in, following an adaptation from Greenlaw (1996) reported in table 4-7. The humour genre was coded according to Tsakona (2017) (jokes, comedy, cartoons, sitcoms, satire, stand-up, and memes) but cartoons were substituted with *fantasy,* to include animation products. *Sitcoms* refer to marketing communication campaigns that include more messages built on the same concept (e.g., Specsavers™, Comparethemarket™, Gocompare™, Snickers™, etc.). *Pastiche* was added to the list to include those messages that somehow recall other mass-media cultural product (e.g., films, songs, etc.). Finally, the genre *Ad parody* was considered for those messages that mock the language of advertising.

The results regarding high-involvement products confirms that humour is widely used for low-involvement products (Chung and Zhao, 2003; Flaherty, Weinberger and Gulas, 2004). The number of high-involvement products is similar across the two sets of data. This confirms that using humour for high-involvement products, although rare, does not affect the success of the message. Since the cognitive effort paid to decode the humour, low-involvement products favours an incidental processing of the content (Berger, Wagner and Schwand, 2012). Another finding is that relatedness highly determines the success of the humorous message, since the number of unrelated messages doubles between non-humorous and humorous sets of data. To date there were no studies showing that relating the message to the product/brands enhances the humorousness and the advertising liking, such as reported above.

TABLE 4-6 – Comparison of the frequencies for the coding of each stimulus across the H and NH sets of data					
		Humorous (N=224)		Non-Humorous (n=226)	
CODE	Element(s)	Observations	Percentage	Observations	Percentage
Product type	High involvement	10	4.46%	13	5.75%
Relatedness	Product/Brand	147	65.63%	105	46.47%
	Event	19	8.48%	14	6.19%
	Not Related	**58**	**25.89%**	**107**	**47.34%**
Meta-Appeal	At least one appeal	145	64.70%	136	60.18%
	Sex	45	20.08%	48	21.23%
	Fear	67	17.90%	53	23.45%
	Comparative	27	12.05%	43	19.03%
	Self	67	64.70%	66	29.20%
	Two-sided	46	6.30%	29	12.83%
Humour Type	ad parody	**14**	6.25%	3	1.33%
	AI performance	1	0.45%	0	0
	comedy	75	33.48%	84	37.17%
	dark comedy	58	25.89%	58	25.66%
	fantasy	16	7.14%	7	3.10%
	joke	17	7.59%	24	10.62%
	meme	16	7.14%	17	7.52%
	pastiche	10	4.46%	15	6.64%
	satire	4	1.79%	5	2.21%
	sitcom	13	5.81%	13	5.75%
Figures of speech	antithesis	8	3.57%	11	4.87%
	double entendre	20	8.93%	31	**13.72%**
	ellipsis	4	1.78%	5	2.21%
	epanorthosis	7	3.12%	15	**6.64%**
	hyperbole	47	20.98%	41	18.14%
	irony	30	**13.39%**	16	7.08%
	metaphor	12	**5.36%**	8	3.54%
	metonym	3	1.34%	3	1.33%
	paradox	15	6.71%	23	**10.18%**
	pun	42	18.75%	41	18.14%
	resonance	18	**8.04%**	13	5.75%
	rhetorical question	7	3.12%	3	1.33%
	repetition of sound	11	**4.91%**	16	**7.08%**

Table 4-6 - The table reports descriptive statistics of the coded elements for each set of data. Relatedness, some meta-appeals, and, with lower impact, some figures of speech (all in bold) appear different from the comparison.

Since the research took place during some specific events, it was noticed that some messages were related to them. Figure 4-4 shows a message repeated in both sets of data, related to COVID-19. The unappealing discomfort of wearing braces is reframed considering the pandemic.

*Figure 4-4 - Represent humorous stimulus number 118, and non-humorous 178. image downloaded at the address https://miro.medium.com/max/631/1*YVEHAX5dIJI3p8UMLB_bNA.png, accessed in September 2021*

Since individuals were forced by law to wear masks, wearing braces becomes hidden. Contrary to what literature reports (Neudecker *et al.*, 2014), reframing messages can indeed decay and become obsolete with the framing structure that generated them. The research shows that while participant K20F1GRA found it humorous for the relatedness to the event, the same effect is opposed by participant N39F2LIN, who comments that it is too simple. Of the 14 non-humorous messages correlated to events, 8 were considered too simple, 3 offensives, and only 3 were no longer funny. This disproves that relatedness to the events is likely to wear out, rather, it should not be too predictable.

The final part of the coding aims to identify whether humour is a meta-appeal. Regardless of the dataset, at least two thirds of the messages present the coexistence with humour of other message appeals, not considering the metaphor appeal, that will be discussed in the next section. Often there are multiple appeals coexisting with the humorous message. This result confirms that humour is indeed a meta-appeal. The implications of such quantification are huge for literature. Especially considering that recent research tends to identify other appeals as opposed to the humorous one. For example, the analysis of two-sided messages has received extended attention in the recent years (Eisend, 2013). Often, some appeals are considered antithetic to humour. Some research, for example, while seeing humour as an obsolete appeal, forgets to specify that two-sided adverts can indeed be humorous. Neudecker, for example, says that:

> The ad showed German engineers at their first attempt in a dancing school, stating that "Germans are stiff," only to then confront viewers with the question "But who wants a shaky car?" Thereby, the initially negative attribute "stiffness" is put into a new frame, giving it a positive meaning by evoking associations of engineers working thoroughly without joking about quality. (Neudecker *et al.*, 2014, p. 916)

This outcome is in line with more recent research that detects the versatility of humour as meta-appeal capable of carrying two-sided messages (Eisend, 2022). This aspect of humour so far has kept aside

another appeal identified by Hornik, Ofir and Rachamim (2016, 2017) that is both cognitive and emotional: figures of speech.

4.3.1 - Humour and figures of speech

Advertising studies focus on metaphors because they enhance semantic memory (Herz and Brunk, 2017). The stimuli of current research were classified according to which figure of speech was used to express humour. Only recently has there been a shift from the use of the word metaphors to figures of speech, or rhetorical figures, as Fox, Rinaldo and Amant (2015) do.

The coding of figures of speech was done following the frame proposed by Greenlaw (1996). Since they mainly analyse humorous slogans, figures of speech reported tend to focus more on a linguistic and sound-based humour. The messages collected by the current research, however, were mostly pictures and videos. Thus, some figures of speech were incorporated in a more generic frame. Table 4-7 reports how figures of speech were simplified to fit the data of the current research.

Table 4-7 – Coding of the figures of speech		
Figures' action	Greenlaw's list	Simplification
	Rhyme	Repetition of Sounds (ROS)
	Chime	
	Assonance and Alliteration	
	Anaphora	Repetition of Words (ROW)
	Epistrophe	
	Epanalepsis	
	Anadiplosis	
	Antimetabole	
Phrase structure	Parison	Parison
Reversal semantic	Antithesis	Antithesis
Claim extremity	Hyperbole	Hyperbole
Assertive force	Rhetorical question	Rhetorical question
	Epanorthosis	Epanorthosis
Presence/Absence	Ellipsis	Ellipsis
Centre/Periphery	Metonym	Metonym
Destabilisation	Metaphor	Metaphor
	Pun	Pun
	Antanaclasis	Double entendre
	Syllepsis	
	Resonance	Resonance
Opposition	Paradox	Paradox
	Irony	Irony

Table 4-7 - Coding of the Figures of speech based on Greenlaw (1996).

Every message was coded as a figure of speech, regardless of the success of the humorous appeal. This result confirms the literature that sees humour as a figure of speech (Attardo, 2015; Piata, 2016).

Metaphors in advertising make the product look more innovative, but less socially responsible (Luffarelli, Feiereisen and Zoghaib, 2021). While the presence of figures of speech is incontrovertible for each message, their function was understood by using the self-reported answer of why the message was humorous (the recognised humorous intention for the non-humorous dataset). The analysis and the axial coding are reported in appendix 6. Together with the analysis of repeated stimuli, and the self-reported comparison of the humorous element, this outcome confirms that humorous metaphors are indeed linked to the communication of a new (intended as unthought) meaning. The association between the messages and the figure of speech also points out that humour is not just an emotional appeal, because metaphors are both cognitive and emotional (Hornik, Ofir and Rachamim, 2016). Finally, the connection between humour and metaphors also explains the nature of humour as a meta-appeal. The persuasiveness of figures of speech in advertising is enhanced with the association of other appeals, especially if emotional (Septianto, Pontes and Tjiptono, 2022).

By connecting every stimulus to a figure of speech, this research has supported their correlation, while the axial coding confirms that the scope of humorous figures of speech is the creation of a new (or alternative) meaning. Different figures of speech, however, do not determine humorousness. Multinomial logistic regression of figures of speech on humorousness for humorous dataset (χ^2=62.631, df=72, p=0.777, Parson= 0), and the non-humorous dataset (χ^2=285.776, df=336, p=0.978, Parson= 0), shows that figures of speech do not determine the success of humour. Table 4-8 report the comparison of the incidence of metaphors across the two sets of data.

Table 4-8 - Figures of speech recurrence

	Humorous		Non-humorous	
	Frequency	Percent	Frequency	Percent
antithesis	8	3.6	11	4.9
double entendre	20	8.9	31	13.7
ellipsis	4	1.8	5	2.2
epanorthosis	7	3.1	15	6.6
hyperbole	47	21.0	41	18.1
irony	30	13.4	16	7.1
metaphor	12	5.4	8	3.5
metonym	3	1.3	3	1.3
paradox	15	6.7	23	10.2
pun	42	18.8	41	18.1
resonance	18	8.0	13	5.8
rhetorical question	7	3.1	3	1.3
ROS	11	4.9	16	7.1
Total	224	100.0	226	100.0

Table 4-8 - Comparison across the two sets of data of the figures of speech coded.

The table shows that there are very small variances across the two sets of data. This further confirms that the relationship between figures of speech and humorousness of the message is not dependant on the typology of metaphors utilised. Rather, figures of speech carry a semantic valence identified

with the alternative meaning where understanding is necessary for the success of the humorous message. So far, the coding has referred to the measurement of humorousness seen as a single item. Next sections will describe the scaling based on the self-reported answers to the survey and prepare the data for statistical analysis.

4.4 - Scale reliability.

The research uses a total of 10 scales. Three for the State-Trait-Cheerfulness-Inventory (STCI), three for the sense of humour questionnaire (SH), three for the Mechanisms of humour (MEC), and one for the advertisement liking (AL). The scales for the independent variables (IV) were observed once a day for each participant, therefore, there is a minimal difference between the humorous and non-humorous datasets. Table 4-9 and 4-10 report the descriptive statistic for each set of data. The SH scales have a highly positive kurtosis (e.g., SH_C1 = 5.036, and SH_C2 = 2.826, see table 4-9). The scale was designed to be measured with four grades (Svebak, 2010), while current research measured it with seven grades to avoid burden during the daily task. It is desirable to have a high sense of humour so, as expected, the curve results skewed toward higher scores. Given these considerations, the recoding of the scale into 4 Likert-grades was made by adding up the first four points (Strongly disagree, disagree, somewhat disagree, neither agree nor disagree) into one. The *zoomed-in* scale results in a normal distribution (see table 4-9, and 4-10). An Exploratory Factor Analysis (EFA) of the scale reveals only two valid factors, with cognitive and emotional sense of humour being merged into a general sense of humour. This outcome causes the testing of the effect of a general sense of humour instead of cognitive and emotional senses of humour. However, this does not critically affect the full model presented in figure 2-5. Table 4-40 shows how the general sense of humour modifies the hypotheses. The modification is minimal and sees a switch from cognitive, or emotional sense of humour, to the construct of general sense of humour. However, it opens to the consideration of each of the two independent variables (general and social sense of humour) in their possible correlation to each dependent variable.

Regarding the State-Trait-cheerfulness scale, the three factors stand still. However, the seriousness loses two items and only *my thoughts are profound* (STC_2) remains. Interestingly, being pensive, and having deep thoughts are associated by participants with being in a bad mood. Given the small panel of participants, and the nature of the diary study, the seriousness (SER) factor is identified with having profound thoughts. The EFA shows that there are clearly two factors opposed to each other: cheerfulness, or good mood, against bad mood, and a second factor with only STC_3. Table 4-11 reports the correlation matrix of the EFA for the humorous observations (non-humorous has similar behaviour since they are mostly the same observation).

Table 4-9- Descriptive Statistics for the independent variables (N=223)								Inter-Item Correlation Matrix (humorous)				
	N	Mean	Std. Deviation	Skewness		Kurtosis						
Item	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error					
ST_E1	224	5.2500	1.27057	-1.036	0.163	0.798	0.324	ST_E1	ST_E2			
ST_E2	224	5.0134	1.43461	-0.585	0.163	-0.497	0.324	0.685				
ST_E3	224	5.3705	1.16420	-0.930	0.163	0.953	0.324	0.574	0.554			
ST_C1	224	3.5446	1.65872	0.162	0.163	-0.716	0.324	ST_C1	ST_C2			
ST_C2	224	3.7009	1.61406	-0.189	0.163	-1.083	0.324	0.244				
ST_C3	224	4.0580	1.37277	-0.305	0.163	-0.383	0.324	0.169	0.17			
ST_B1	224	2.4643	1.38168	0.955	0.163	0.123	0.324	ST_B1	ST_B2			
ST_B2	224	2.7857	1.46363	0.611	0.163	-0.621	0.324	0.741				
ST_B3	224	2.6250	1.38942	0.746	0.163	-0.043	0.324	0.733	0.741			
SH_C1	224	5.7634	1.05978	-1.750	0.163	**4.959**	0.324	Recoded in a 4 grades Likert scale				
SH_C2	224	5.6071	1.04908	-1.204	0.163	**2.834**	0.324					
SH_E1	224	4.5938	1.34270	-0.482	0.163	-0.184	0.324					
SH_E2	224	5.6607	0.89896	-0.734	0.163	0.702	0.324					
SH_S1	224	5.4732	1.37537	-1.138	0.163	0.751	0.324					
SH_S2	224	5.5491	1.20436	-0.769	0.163	-0.059	0.324			General Sense of Humour		
SH4_C1	224	2.8393	0.82618	-0.415	0.163	-0.262	0.324	SH4_C1		SH4_C1	SH4_C2	SH4_E1
SH4_C2	224	2.6607	0.89896	-0.323	0.163	-0.613	0.324	0.506		0.506		
SH4_E1	224	1.8750	0.92910	0.556	0.163	-0.969	0.324	SH4_E1		0.318	0.287	
SH4_E2	224	2.6875	0.83135	-0.352	0.163	-0.343	0.324	0.402		0.488	0.548	0.402
SH4_S1	224	2.6473	1.02686	-0.428	0.163	-0.954	0.324	SH4_S1				
SH4_S2	224	2.6384	1.02810	-0.303	0.163	-1.032	0.324	0.537				
Valid N (listwise)	224											

Table 4-9 - For the STCI, the pensive mood is mostly correlated to the bad mood. Only the item for being in deep thoughts remain for the factor. For Sense of humour the table shows the scale as collected from the interview, and the recoding in a 4-items scale.

Table 4-10 - Descriptive Statistics for the independent variables (N=226)										Inter-Item Correlation Matrix				
	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis						
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error					
ST_E1	226	1.00	7.00	5.2434	1.26775	-1.022	0.162	0.780	0.322	ST_E1	ST_E2			
ST_E2	226	1.00	7.00	5.0044	1.43449	-0.573	0.162	-0.516	0.322	0.686				
ST_E3	226	2.00	7.00	5.3717	1.16004	-0.934	0.162	0.978	0.322	0.570	0.547			
ST_C1	226	1.00	7.00	3.5619	1.65413	0.158	0.162	-0.718	0.322	ST_C1	ST_C2			
ST_C2	226	1.00	7.00	3.6991	1.61320	-0.200	0.162	-1.067	0.322	**0.224**				
ST_C3	226	1.00	7.00	4.0708	1.35132	-0.293	0.162	-0.345	0.322	**0.155**	**0.161**			
ST_B1	226	1.00	6.00	2.4735	1.37330	0.949	0.162	0.140	0.322	ST_B1	ST_B2			
ST_B2	226	1.00	7.00	2.8009	1.45761	0.594	0.162	-0.634	0.322	0.740				
ST_B3	226	1.00	7.00	2.6372	1.38283	0.734	0.162	-0.043	0.322	0.732	0.740			
SH_C1	226	1.00	7.00	5.7611	1.06478	-1.716	0.162	**4.766**	0.322	Recoded in a 4 grades likert scale				
SH_C2	226	1.00	7.00	5.6018	1.05020	-1.189	0.162	**2.756**	0.322					
SH_E1	226	1.00	7.00	4.5708	1.34556	-0.461	0.162	-0.210	0.322					
SH_E2	226	3.00	7.00	5.6593	0.89633	-0.730	0.162	0.709	0.322					
SH_S1	226	1.00	7.00	5.4690	1.37321	-1.130	0.162	0.732	0.322					
SH_S2	226	2.00	7.00	5.5265	1.20433	-0.733	0.162	-0.128	0.322					
SH4_C1	226	1.00	4.00	2.8363	0.83518	-0.423	0.162	-0.286	0.322			General Sense of Humour		
SH4_C2	226	1.00	4.00	2.6549	0.90205	-0.325	0.162	-0.623	0.322	SH4_C1		SH4_C1	SH4_C2	SH4_E1
SH4_E1	226	1.00	4.00	1.8584	0.92729	0.590	0.162	-0.929	0.322	0.515		0.515		
SH4_E2	226	1.00	4.00	2.6858	0.82918	-0.348	0.162	-0.340	0.322	SH4_E1		0.314	0.287	
SH4_S1	226	1.00	4.00	2.6416	1.02842	-0.423	0.162	-0.965	0.322	0.399		0.490	0.550	0.399
SH4_S2	226	1.00	4.00	2.6150	1.03174	-0.276	0.162	-1.062	0.322	SH4_S1				
										0.535				

Table 4-10 - Like table 8, table 9 synthesises the descriptive statistic for the independent variables, but for the non-humorous dataset.

		Table 4-11- EFA for the STCI scales							
		ST_E1	ST_E2	ST_E3	ST_C1	ST_C2	ST_C3	ST_B1	ST_B2
Correlation	ST_E2	**.685**	1.000	.554	-.384	-.319	.029	-.626	-.582
	ST_E3	**.574**	**.554**	1.000	-.142	-.159	.052	-.495	-.495
	ST_C1	-.239	-.384	-.142	1.000	.235	.162	.326	.310
	ST_C2	-.185	-.319	-.159	.235	1.000	.179	.336	.300
	ST_C3	**.067**	**.029**	**.052**	**.162**	**.179**	1.000	**.021**	**.012**
	ST_B1	-.583	-.626	-.495	.326	.336	.021	1.000	.746
	ST_B2	-.547	-.582	-.495	.310	.300	.012	**.746**	1.000
	ST_B3	-.564	-.579	-.489	.256	.339	-.023	**.726**	**.735**

Table 4-11 - In bold the items used for each factor. Only STC_3 remains in the SER factor.

The Cronbach α of the scale that includes bad mood, and the two items of the pensive mood is .791. This means that participants recognised the state of being *lost in thoughts* as an outcome of being in a bad mood. However, given the low Pearson's correlation values of such items of the pensive mood with the bad mood scale, they have been excluded. The model shall consider using item ST_C3 as path analysis for the *serious* (rather than pensive) mood.

Similarly, the Sense of humour questionnaire does not support a reliable scale for the emotional sense of humour. Running an EFA for the whole questionnaire, it appears that there is not a separation between cognitive and emotional sense of humour. Table 4-12 reports the correlation matrix from the EFA for the humorous observations. For this reason, the scales for cognitive and emotional sense of humour were merged into the general sense of humour (SH), while social sense of humour (SHS) remains independent.

Table 4-12 - Correlation matrix of the Sense of humour questionnaire for the humorous observations and principal component matrix

	Correlation matrix					Principal component matrix	
	SH4_C1	SH4_C2	SH4_E1	SH4_E2	SH4_S1		
SH4_C1						**.767**	-.102
SH4_C2	**.503**	1.000	.281	.543	.241	**.743**	-.065
SH4_E1	**.318**	**.281**	1.000	.403	.053	**.516**	-.364
SH4_E2	**.488**	**.543**	**.403**	1.000	.073	**.747**	-.302
SH4_S1	.274	.241	.053	.073	1.000	.407	**.762**
SH4_S2	.180	.156	.133	.121	**.523**	.311	**.739**

Table 4-12 - Correlation matrix from the EFA for the sense of humour questionnaire. In bold the two factors outcoming with a general sense of humour (top left) and a social sense of humour (bottom right). On the right the principal component matrix.

The analysis of the dependent variables (DV) can account for double observations, since both the humorous and non-humorous data sets are based on the different stimuli updated by the participants. Table 4-13 reports the descriptive statistics for each item and the correlation matrix for each factor considered by the research. Some items from the mechanisms of humour have been excluded from the research because they are poorly correlated to the other item (MEC_C1 and MEC_CD2). The result is in bold in the table.

Table 4-13 - Descriptive Statistics for the dependent variables (N=450)											
	N	Mean	Std. Deviation	Skewness		Kurtosis		Inter-Item Correlation Matrix			
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error				
MEC_E1	452	4.5442	2.24750	-0.343	0.115	-1.336	0.229	MEC_E1	MEC_E2		
MEC_E2	452	3.6438	2.10039	0.222	0.115	-1.202	0.229	0.609			
MEC_E3	452	3.6460	2.24515	0.234	0.115	-1.453	0.229	0.554	0.724		
MEC_C1	452	3.0686	1.96921	0.601	0.115	-0.806	0.229	MEC_C1	MEC_C2		
MEC_C2	452	2.3186	1.75312	1.358	0.115	0.744	0.229	**0.258**			
MEC_C3	452	2.5420	1.91401	1.086	0.115	-0.119	0.229	**0.240**	0.695		
MEC_D1	452	3.9425	2.10716	0.045	0.115	-1.292	0.229	MEC_D1	MEC_D2		
MEC_D2	452	3.2389	2.01116	0.493	0.115	-0.964	0.229	**0.072**			
MEC_D3	452	3.9646	1.98634	0.141	0.115	-1.106	0.229	0.518	**0.154**		
AL_1	452	3.6681	2.08799	0.216	0.115	-1.230	0.229	AL_1	AL_2	AL_3	AL_4
AL_2	452	3.6394	2.24755	0.200	0.115	-1.469	0.229	0.797			
AL_3	452	3.6527	2.30033	0.229	0.115	-1.496	0.229	0.682	0.748		
AL_4	452	3.9181	1.97207	0.120	0.115	-1.172	0.229	0.563	0.656	0.565	
AL_H	452	3.7942	2.24343	0.132	0.115	-1.483	0.229	0.703	0.835	0.712	0.715

Table 4-13 - The factors considered for the DVs are internally correlated. In bold there are items that were poorly correlated and thus excluded from the analysis.

The scales observed have been tested for internal reliability. Table 4-14 reports the Cronbach's α for each scale. According to Taber (2018), except for the pensive mood from the STCI, and the emotional sense of humour, all the scales have a satisfactory (α≥ .6) internal reliability. For the STCI, Cheerfulness and Bad mood are both robust (α≥ .8). The Sense of humour scale has a non-satisfactory value (α= .56), while the cognitive sense of humour has a moderate (α=.670) value. However, the EFA determines two factors (Eigen value 1.365) with a satisfactory test of sphericity (KMO=.646***).

The correlation matrix reported in table 4-14 shows the internal reliability of a general sense of humour scale (both cognitive and emotional) for the humorous data. The general sense of humour scale has a good internal reliability (α= 0.747) as average of both humorous and non-humorous sets of data. The two items for the social sense of humour records both an adequate internal reliability (α=.687 for humorous and .697 for the non-humorous sets of data).

Table 4-14 - Cronbach's α for the research's scales										
		Humorous (N=224)			Non-Humorous (N=226)			Total (N=450)		
Scale	**Factor**	**Std α**	**Modification**	**STD α**	**Std α**	**Modification**	**Std α**	**Std α**	**Modification**	**Std α**
STCI	Cheerfulness mood	**0.821**			**0.819**			N/A		
	Pensive mood	0.416	Factor reduced to one item		0.397	Factor reduced to one item				
	Bad mood	**0.893**			**0.894**					
Sense of Humour	Cognitive SH	0.67	general sense of humour scale	**0.746**	0.68	general sense of humour scale	**0.748**			
	Emotional SH	0.574			0.57					
	Social SH	0.687			0.697					
Mechanisms of humour	Cognitive mechanism	0.768	Item MEC_C1 was excluded	**0.827**	0.512	Item MEC_C1 was excluded	**0.823**	0.664	Item MEC_C1 was excluded	**0.82**
	Emotional mechanism	**0.717**			0.784			**0.836**		
	Disparaging mechanism	0.381	Item MEC_D2 was excluded	**0.663**	0.628	Item MEC_D2 was excluded	**0.752**	0.497	Item MEC_D2 was excluded	**0.682**
Ad Liking	Advertisement liking	**0.87**			**0.822**			**0.92**		

Table 4-14 - Cronbach's α for each scales according to the humorous, non-humorous, and the total sets of data. In bold the scores of the scale that will be considered by the current research.

Considering the exclusion of some items already discussed, the mechanisms of humour have a robust reliability (α≥ .8), except for the disparaging mechanism that is overall acceptable (α= .682); while it is mediocre for the humorous data set (α= .663), it is excellent for the non-humorous data set (.752). The problem here seems related not to reliability, but rather, to the validity. This means that the self-reported disparaging measurement was less appropriate when applied to humorous messages because the recognition of a disparaging intention has less chance of leading to a humorous outcome.

The dependent variable is measured with the Advertisement liking and has an excellent Cronbach α sitting at .870 for the humorous observations, and .822 for the non-humorous ones. The two sets combined record an astonishing .920, making this the most reliable scale of the whole research. Table 4-15 compares the Cronbach's α with the relevant literature. Most of the alphas are higher from the research that have developed the scales (see table 4-15), except for the advertisement liking to which the humorous item was added. This result is justifiable since the current research accounts for fewer observations than those from the literature considered. Also, as commonly found in diary studies,

these scales used fewer items, which further reduced the internal consistency of the scales. With the only exception of the serious mood, all the scales have a good internal reliability.

Table 4-15 - Comparison of the Cronbach's α for this research and the original research that generated the scale			
Scale	Current research's range	original research	Reference
STCI - Cheerfulness	0.821	0.94	(Ruch, Köhler and Van Thriel, 1997)
STCI - Serious mood	0.419	0.86	
STCI - Bad mood	0.893	0.93	
SH - Cognitive	0.746	0.85	(Svebak, 1996)
SH - Emotional			
SH - Social	0.687		
Mechanism - IR	0.82	0.84	(Spielmann, 2014)
Mechanism - AS	0.836	0.95	
Mechanism - Disparagement	0.682	N/A	N/A
Advertisement liking	0.92	0.91	(Chattopadhyay and Basu, 1990b, 1990a)

Table 4-15 - Comparison of the Cronbach α for the research scales (on the left) and the original research where they were taken from (on the right)

Following the increase of Cronbach's α determined by adding the humorousness measurement to the advertising liking scale, Hypothesis HA can be accepted. This means that humorousness of the ad is strictly correlated to the liking of the message.

4.5 - Assumptions

The section on data collection has already discussed why there is no missing data. The normal distribution of the curves has been ascertained in the previous paragraph. This confirms the accuracy in the data and a satisfying execution of the questionnaire made by the participants (Maas and Hox, 2004). The independence will be further investigated with the outliers, since a diary study can only suppose independence between participants, but not *within* the same participant. Responses from the same participants are necessarily influenced by the response given on the previous day.

Outliers

The following outlier analysis includes comparison of z-scores and Mahalanobis distance. The first pass to spot outliers used z-scores with a ±3 cut-off, since higher scores are applicable only on larger samples (Shiffler, 1988). Table 4-16 shows the outliers detected using this method.

Table 4-16 – Distribution o-scores >±3 across participants					
(Humorous dataset)		Variables			
Case	ID	GM1	MECC1	AL2	ALH
15	C64M2LAN	-3.34			
32	D33M1MEC		-3.17		
133	L30M1OTH		-3.17		-3.01
145	M43F1LIT		-3.17	-3.01	-3.08
146	M43F1LIT		-3.17	-3.01	-3.08
159	M30F3PHY				-3.08
160	M30F3PHY			-3.01	
161	M30F3PHY				-3.08
170	N39F2LIN			-3.01	-3.08
171	N39F2LIN			-3.01	-3.08
213	S45F1CHE			-3.01	
214	S45F1CHE		-3.17	-3.01	
218	S45F1CHE		-3.17	-3.01	
Non-humorous dataset					
15	C64M2LAN	-3.34			
153	M46F3PSY	-3.34			

Table 4-16 - Summary of the Z-numbers higher than ±3 for both sets of data. The background colour refers to the same participant.

The normal distribution (see skewedness and kurtosis in tables 4-9, 4-10, and 4-13) of the scales also makes the result fit for structural equation modelling analysis. To proceed with such statistical methods, data was checked for Mahalanobis distance to detect multivariate outliers, and using the χ^2 at p=0.001 as a cut-off (McLachlan, 1999; Gallego *et al.*, 2013). Table 4-17 reports the cases higher than the cut-off.

Table 4-17- Mahalanobis distance (cut-off at p=0.001 is 52.619)					
Humorous			Non-Humorous		
case	participant	value	case	participant	value
15	C64M2LAN	63.59	15	C64M2LAN	57.37
32	D33M1MEC	66.87	33	D33M1MEC	61.27
36	D33M1MEC	62.05	37	D33M1MEC	62.25
41	E24M3A&F	60.14	52	E24FHEA	67.65
51	E24FHEA	64.88	57	E24FHEA	75.48
54	E24FHEA	71.34	83	H32M1DRA	55.56
56	E24FHEA	75.36	161	M30F3PHY	56.65
159	M30F3PHY	53.68	223	V41M1CAT	65.54
171	N32F2LIN	57.97			
173	N32F2LIN	64.38			

Table 4-17 - The table reports Mahalanobis distance only for those cases that are higher than the cut-off. The coloured background highlights the same participant.

The same analysis was conducted with the single items collapsed into the same scale. Results are reported in table 4-18.

Table 4-18 - Mahalanobis distance (cut-off at p=0.000 is 27.877)					
Humorous			Non-Humorous		
case	participant	vsalue	case	participant	value
none			51	E24FHEA	30.38

Table 4-18 - Only one case for the non-humorous set of data had a Mahalanobis distance higher than the cut off reported in the table.

Despite the method employed, each table reporting outliers shows that the outliers' values are recurrent to certain individuals, but not for the totality of their observations. This confirms that the outliers are neither contextual, nor collective (Singh and Upadhyaya, 2012). Neither of the outliers of the current research are cases of outliers that Osborne & Overbay (2004) report (from data errors, intentional or motivational misreporting, sampling error, standardisation failure, from distributional assumption, nor from legitimate cases sampled from the correct population). This is because some participants are outliers only for some of their own responses, and not for all. This suggest that some answers might have been influenced by the responses they gave in the previous days. Similarly, the independence, as stated before, cannot be measured within the same individual (Maas and Hox, 2004). Thus, current research proceeded without excluding the outliers identified above. Instead, a robust method (Maximum Likelihood) was chosen to estimate the models.

Homogeneity

Sample adequacy, linearity, and sphericity were tested with KMO and Bartlett's test of Sphericity (Kaiser, 1960, 1974; Bartlett, 1992). Data is reported in table 4-19. Every factor is at least mediocre (KMO>0.05) (Kaiser, H. F., & Rice, 1974). Considering the small entity of both the humorous and non-humorous datasets, the outcome is widely acceptable. Table 4-19 also reports Bartlett's test of sphericity that is significant for every scale and excluding sphericity of variance.

This confirms the homogeneity of the data.

Table 4-19 – Analysis of homogeneity				
Scale	KMO	Bartlett's tests od sphericity		
		Approx χ^2	df	sig.
Humorous dataset				
GM	0.70	244.616	3	***
BM	0.75	392.868	3	***
MECE	0.57	193.312	3	***
MECC	0.50	137.303	1	***
MECD	0.50	61.843	1	***
SH	0.75	208.225	6	***
SHS	0.50	73.368	1	***
AL	0.83	576.985	10	***
Non-Humorous dataset				
GM	0.70	245.286	3	***
BM	0.75	394.732	3	***
MECE	0.68	198.678	3	***
MECC	0.50	150.416	1	***
MECD	0.50	100.667	1	***
SH	0.75	212.097	6	***
SHS	0.50	75.493	1	***
AL	0.79	429.955	10	***

Table 4-19 - The table reports the KMO and Bartlett's Sphericity test for the variables considered.

Homoscedasticity

Heteroscedasticity was tested with the Breusch-Pagan test (Breusch, T. S., 1979). Calculations were made using analytical software R, version 4.2.1. Factors were collapsed into the same variable to allow linearity regression. The analysis included the dependent and independent variables, the moderators, the mediators, and the grouping variables (ID, age, gender, and level of education), further used in the multilevel analysis. Both the humorous set of data (BP test= 20.176, df= 12, p=0.064), and the non-humorous ones (BP test= 10.501, df= 12, p=0.572) were homogeneously distributed, therefore, suitable for regression analysis.

Factors multicollinearity

Within-factors, multicollinearity was already disproved by the values reported in table4-9, 4-10, and 4-13 (see the correlation coefficients). A regression was run to identify whether some factors resulted in collinearity with each other. Table 4-20 shows the results of this analysis. There is multicollinearity between advertising liking (AL) and the emotional mechanism (MECE) in the humorous data (std=

1.249, p= 0.106), although non-significant, and in the non-humorous (std.= 1.058, p=0.000). This multicollinearity is only shown during regression, meaning that the factors are not the same. The multicollinearity among regressors can be avoided with orthogonal analyses (Jensen and Ramirez, 2013). Multicollinearity among predictor and dependent variables, as in the case of current research, is not affecting the quality of the result itself, since it is auspicious that predictor and dependent variables have collinearity (Daoud, 2018). However, in the case of multiple regressions, the multicollinearity can affect the quality of the result of the other predictors and/or confounders (Graham, 2003). Thus, models including the emotional mechanism (MECE) and other independent variables or moderators would show correlations weaker than they really are, consisting of type I errors. Rather, the research will estimate these models without including the multicollinearity of MECE and AL and including the emotional mechanism in the discussion.

Another point shown in table 4-20 is the behaviour of cognitive (MECC) and emotional mechanisms in the two different datasets. The regression of MECE and MECC shows how there is an inversion in the correlation between the two mediators across the two datasets. The cognitive mechanism is negatively correlated (std= -0.310) for the non-humorous stimuli, while it is strongly positively correlated (std. = 0.875, p= 0.000) in the humorous set. The theoretical implications of such behaviour will be discussed further in the section concerning the role of emotions and cognition in the success (or unsuccess) of the humorous element of the communication.

Another element worth mentioning, is the behaviour of MECC and AL. The cognitive mechanism is negatively associated to AL for the humorous dataset, however, the result is non-significant. This outcome is in line with the supposition that MECC is a moderator of the sese of humour. It shall be further investigated in the Structural Equation Modelling (SEM) analysis. This is because the same does not happen for the non-humorous dataset. The discrepancy observed between the relationship between MECC with AL, and MECE, further confirms that the interactor collinearity between AL and MECE is independent, meaning that they do not represent the same construct.

The analysis of the assumptions and the reliability analysis shows that the data suit Structural Equation Modelling (SEM) on condition of using ML estimators, and without the interaction between MECE and other dependent variables when regressed on AL. The two main limitations are the existence of outliers, which can be overcome by using ML estimators, and the multicollinearity between MECE and AL. The latter limits the chance of analysing the full model.

Table 4-20 – Inter-factors' correlation matrix					
		Humorous		**Non-Humorous**	
Factor	**Regressing factor**	**Std. all**	**P**	**Std. all**	**P**
AL	MECE	**1.249**	**0.106**	**1.058**	***
	MECD	0.030	0.426	-0.007	0.953
	MECC	**-0.226**	**0.732**	**0.123**	**0.090**
	GM	0.088	0.774	-0.249	0.259
	SER	0.094	0.500	0.008	0.894
	BM	0.135	0.540	-227.000	0.269
	SH	0.712	-0.051	0.097	0.430
	SHS	0.032	0.867	-0.083	0.414
MECE	MECD	0.008	0.792	-0.017	0.944
	MECC	**0.875**	***	**-0.310**	*
	GM	0.218	0.339	0.224	0.573
	SER	-0.110	0.085	-0.041	0.630
	BM	0.053	0.805	0.403	0.242
	SH	-0.053	0.617	0.112	0.538
	SHS	0.058	0.857	0.042	0.782
MECD	MECC	0.079	0.706	0.003	0.961
	GM	0.016	0.981	-0.126	0.506
	SER	-0.042	0.774	0.093	0.117
	BM	0.021	0.972	-0.114	0.477
	SH	0.077	0.805	0.050	0.622
	SHS	-0.015	0.989	-0.055	0.535
MECC	GM	-0.139	0.724	-0.109	0.744
	SER	-0.028	0.747	-0.030	0.686
	BM	-0.154	0.660	0.062	0.930
	SH	0.236	0.144	0.346	0.830
	SHS	-0.186	0.950	-0.003	*
GM	SER	0.024	0.938	0.014	0.819
	BM	-0.758	0.052	-0.809	***
	SH	0.275	**	0.296	***
	SHS	-0.241	0.991	-0.279	-0.003
SER	BM	-0.022	0.901	-0.043	0.639
	SH	0.067	0.451	0.078	0.389
	SHS	-0.135	0.987	-0.152	0.077
BM	SH	-0.307	**	-0.272	0.071
	SHS	-0.248	0.939	-0.272	*
SH	SHS	0.212	0.902	0.270	*

Table 4-20 - Report of the inter-factors' correlation matrix. Only MECE and AL are collinear.

4.6 - Structural equation modelling

The full model synthesised in figure 2-5 cannot be analysed altogether because the number of degrees of freedom would exceed the number of observations. Here follows the analysis of the models nested within the full one. This still allows testing of the hypotheses, and the verification of the efficacy of the I-A-S structure posited by Mandler (1982). A more complex model fitting the data will be built according to the best fit. The analysis below starts with the comparison of direct models (measuring

the direct effect of the independent variables on the dependent variable AL, and following on the moderators MECE, MECC, and MECD). The comparison of moderation models and mediation models shall be based on the efficacy of direct models. Finally, a few composite models based on the findings above will be compared. Following what was established in the assumptions section, every model was calculated with Maximum Likelihood (ML) estimator. Olsson et al. (2000) point out that ML gives a better representation of SEM paths. However, the factor collinearity between MECE and AL causes the R^2 of these models to be above 1, meaning that with maximised likelihood estimation the model records a probability of correlation superior to 100% (reported as NA in related tables). This is an example of Heywood cases where one or more parameters are closer to the value boundary (R^2=1, in this case), also common when using scales with items fewer than 4. For these results only, the value calculated with Generalised Least Squares (GLS) (Dillon, Kumar and Mulani, 1987; Cooperman and Waller, 2022) is given in brackets. Another parameter reporting that needs explaining is the p values. To simplify, the tables report it as significance stars (*≤0.05, **≤0.01, ***≤0.001, while no stars mean non-significance). When the p value is close to being significant (i.e., p was higher than 0.05 but lower than 0.09) the result is indicated in brackets. Finally, since the same model was tested using both sets of data, models from the humorous set of data were reported on a white background, and the non-humorous ones on blue.

The comparison of the models described below comprises three levels. The first level consists of evaluating the standard parameters for the SEM. The evaluation is based on literature (Hu and Bentler, 1999) with CFI ≥ 0.95, TLI ≥ 0.95, RMSEA ≤ 0.06, or with a significant p, meaning that with a larger number of observations it would have reached the threshold of 0.05, and SRMR ≤ 0.08. For smaller models, where the χ^2 p value was not three tailed, the estimated p value (reported as “ep”) was calculated using a web-based calculator (No author, 2018) used as reference to determine whether the model fits the data. The second level of comparison was between similar models across the same set of data. The last level of comparison was between the same model applied to the two different sets of data. The latter typology of model comparison was pivotal in determining what was at the root of the success (and failure) of humour.

4.6.1 - Direct models

Direct models’ comparison considers not only AL as a dependent variable, but, also, the effect of independent variables and moderators on the mediators (mechanisms of humour).

Advertisement liking as dependent variable.

The first set of models' comparison intended to identify the best fitting model of direct effect. Table 4-22 reports the model regressed on the dependent variable (AL). To simplify the comparison across the models, the calculations exclude the use of modification indices (MI). Although these indices could allow better numerical results of the model, they could also compromise their comparison, since some models' result may be greatly improved by such process. Also, the direct models have fewer parameters and modification indices that would be inconsistent at this stage, with the theory (Whittaker, 2012).

Model dir1.1 (χ^2= 50.700, p=0.003, df=26, ep=0.003) is the best fitting model for the humorous set of data, also considering the other parameters (CFI= 0.969, TLI= 0.957, RMSEA= 0.065, SRMR= 0.004). However, sense of humour only explains 3.1% of the variance (R^2= 0.031) of humorous AL. Models dir2.2 (χ^2= 46.989, p=0.000, df=18, ep=0.0002), and dir2.3 (χ^2= 30.593, p=0.004, df=13, 0.004) are a good fit for the same set of data, although in both cases the RMSEA exceeds the value of 1, even with a three-tailed significance. The cognitive mechanism (dir2.2) explains roughly 75% of the variance (R^2= 0.749), while the disparaging mechanism (dir2.3) just a little more than 1% (R^2= 0.013) of the variance of the humorous AL. For the non-humorous data dir2.2 (χ^2= 41.991, p=0.000, df=18, ep= 0.001) is the best fit. However, the standardised regression coefficient is negative (β= -0.135) and non-significant. The same value for the humorous stimuli is positive and three-tailed significant (β= 0.865***), while MECC only explains less than 2% of the variance of the non-humorous AL. Surprisingly, the correlation between MECE and AL (model 2.1) does not indicate a good fit. However, in both cases the regression coefficient exceeds 1 for the humorous set of data (β= 1.028***), and the non-humorous one (β= 1.010***). As seen in the multicollinearity analysis, in these cases the collinearity between the two factors is affecting the other estimated values. This could mean that the two factor are happening at the same time. This result reverses the I-A-R structure suggested by Mandler, since the emotional mechanism comes last, while model dir2.1' effectiveness clearly suggests a positive correlation between the cognitive mechanism and the humorous advertisement liking.

In both sets of data, the emotional mechanism (MECE) is correlated to the dependent variable (AL). The regression explains nearly all the variance (R^2 =0.97 with GLS estimation for the non-humorous data). This differs for the cognitive mechanism: for the humorous data set, increasing MECC by one-unit results in an increase in AL of 0.865 units with a three-tailed significance. Conversely, although non-significant, increasing MECC by one unit decreases the non-humorous AL by 0.135. This is similar for the disparagement mechanism (MECD) which only explains a small fraction of the data (R^2= 0.013 for the humorous set of data, and 0.00 for the non-humorous). Thus, while the emotional mechanism is completely bonded to the success (or failure) of the humorous stimulus, the cognitive and disparagement mechanisms affect the success of humour by being positively correlated to the

humorousness and vice versa. In relation to the non-humorous set of data, the research requested participants to upload humorous marketing messages that they did not find funny, despite recognising their humorous intention. This result suggests that the cognitive mechanism is linked to the humorous intention embedded within the message, while the emotional one resides within the individual. It follows that a humorous intention in a message we do not find humorous tends to reduce the advertisement liking.

Hypotheses HB, HB1, and HB2 are all accepted. However, HB1 and HB2 (see table 4-40) are fused in the same hypothesis since the sense of humour does not reveal a split between cognitive and emotional. The higher R^2 of the models correlating the dependent variables MECC, and MECD, suggests that the sense of humour might be mediated by certain mechanisms of humour. Overall, the models predicting the mechanisms have a discrete fit, so do the moods. Good mood (GM) in model dir3.1 has an excellent fit, however, its fit is not as good as the one of SH observed in model dir2.1 (χ^2 is smaller, despite the fewer degrees of freedom, the RMSEA is larger).

Direct models with the emotional mechanism (MECE) as the independent variable

In the second set of models, MECE is the independent variable. Table 4-23 reports the results of the analysis. Unlike the models regressed on AL, MECE has a better fit with the social sense of humour (SHS) for the humorous data set with model dir4.3 (χ^2= 4.746, df=4, p=0.314, ep=0.314). However, the model explains little of the dependent variable, with R^2 being 0.029 for the humorous data set, and 0.00 for the non-humorous one. Regression coefficient is positive for the humorous data, and negative for the other. Overall, the moods (dir4.4-dir4.7) have a good fit to the data when each is regressed on MECE independently from the others, with the models tested on the non-humorous data set fitting better than the humorous one. Each model, however, has a low level of R^2, meaning that none of them has a great impact on the variable. This result demonstrates that the emotional mechanism tends to be more influenced by the mood of the day. Model dir4.5 for the humorous dataset (χ^2= 25.766, df=8, p=0.001, ep=0.001) shows that good mood has a positive impact on the humorous set of data (β= 0.226*); the non-humorous version (χ^2= 8.587, df=8, p=0.378, ep=0.379) has a negative impact on MECE (β= -0.50). Conversely, bad mood for the humorous dataset (χ^2= 22.894, df=8, p=0.004, ep=0.230) has a nearly significant negative impact on MECE (β= -0.186, p=0.072), while model 4.6 for the non-humorous dataset (χ^2=10.553, df=8, p=0.228, ep=0.230) has a positive impact on MECE (β= -0.030). The regression pensive dimension (SER), which was constituted by one item measuring how participants had deep thoughts, is significant in both sets of data. However, the number of parameters is very small, compared to the number of degrees of freedom. By looking at other fit measures, only

the non-humorous model seems to have a very good fit, with a negative correlation coefficient (β= -0.030), although non-significant. Hypothesis HC2 is rejected since the general sense of humour model only has a discreet fit for the non-humorous dataset.

Overall, the cognitive mechanism seems to be influenced by the moods, while only the social sense of humour appears to have a discreet correlation in the direct model, although the latter results could be influenced by the fewer degrees of freedom of model dir4.3.

Direct models with the cognitive mechanism (MECC) as the dependent variable

The results of the direct model regressed on MECC are reported in table 4-24. The best fitting model is dir5.2 for the humorous data set (χ^2= 13.847, p=0.086, df=8, ep=0.086), and the non-humorous dir5.2 (χ^2= 22.497, p=0.004, df=8, ep=0.004), confirming that general sense of humour is correlated to the cognitive mechanism. The standardised regression coefficient is positive and significant for both sets of data (β= 0.265* for the humorous, β= 0.297*). While for AL and MECE the sign of the regression of equivalent models was negative for the non-humorous data set, in this case the general sense of humour positively affects all 450 stimuli. Interestingly, only good/bad mood affects MECC. However, dir5.5 is significant only for the non-humorous data set (χ^2= 2.073, p=0.722, df=4, ep=0.722), with a β= 0.126 but non-significant. For the humorous data set, instead, bad mood (BM) is significant in dir5.6 (χ^2= 4.773, p=0.316, df=4, ep=), but the β= -0.099 is non-significant. Despite the size of the effect being small and only just significant, the result confirms that generally good mood has a positive effect on the cognitive mechanism (and bad mood a negative one), regardless of the set of data analysed. This result differs from what was observed in the previous two sets of models. The comparison of the direct models on MECC confirms a correlation between sense of humour and the cognitive mechanism, while a little influence of the mood has been described. The analysis also partly accepts hypotheses HC and HC1, considering that the general sense of humour has substituted the cognitive one (see table 4-40).

Direct models with the disparaging mechanism (MECD) as the dependent variable

Table 4-25 reports the models where the independent variables were regressed on the disparaging mechanism (MECD). For the humorous set of data, model dir6.2 (χ^2=9.138, p=0.331, df=4, ep= 0.338) represents the best fit. It explains less than 3% of the variance, with a positive regression coefficient on MECD (β= 0.065, non-significant). Model 6.5 also has an acceptable fit (χ^2= 4.738, p=0.315, df=4, ep=0.315). It explains less than 2% of the variance, and the regression coefficient (β= 0.072) is positive, but non-significant. This means that the disparaging mechanism is positively correlated to the sense

of humour and good mood. For the non-humorous set of data, only model dir6.6 (χ^2= 15.682, p=0.003, df=4, ep=0.003) is a good fit. It explains nearly 4% of the variance, while the regression coefficient (β= -0.030, non-significant) indicates a negative relationship between MECD and bad mood for the non-humorous messages. Hypothesis HC3 is not accepted because MECD results are affected by the general sense of humour, but not the social sense of humour as predicted in chapter 5. However, model dir7.3 is indeed significant for the non-humorous dataset, but the correlation coefficient (β= 0.000) is null or incredibly small.

The direct models investigated so far show that sense of humour has a strong correlation with the dependent variable (AL), and the cognitive (MECC), and disparaging (MECD) mechanisms, especially for the successful humorous stimuli. There is a smaller effect of mood, except for the emotional mechanism.

4.6.2 - Mediation models

The analysis proceeded to test the mediation effect of the independent variables on AL through the mediators (the mechanisms of humour). Table 4-26 reports the results for the models nested within the full model. The table shows that there is no model properly fitting the non-humorous dataset. For the successful humorous messages the model med3 is best fit, with each fit index being a perfect fit. Both the indirect (std.= 0.170*) and the total (std.= 0.179, p=0.055) effect are significant. The model also improves the model dir2.3, although less parsimoniously, meaning that general sense of humour is mediated by MECD. Model med2 also suggests a very good fit, considering the small amount of observation, with only TLI being below the cut-off of 0.95 (TLI= 0.94). The RMSEA is acceptable (<0.80) and has one level of significance (RMSEA= 0.073*), meaning that with a larger sample, it would have met the criteria of perfect fit (i.e., RMSEA≤ 0.06) (Hu and Bentler, 1999)). The model also improves model dir2.2 (not all indices), considering the increase of variance explained by it (dir2.2R^2= 0.749; med2R^2= 0.753). Both the direct and indirect effect are small and non-significant. The effect of the general sense of humour on AL through the disparaging mechanism is still relevant since the cases of humorous intentional disparagement are few. For the humorous dataset, hypothesis HD is partly accepted. HD1 is accepted, but the general sense of humour substitutes the cognitive sense of humour. This means that the cognitive mechanism mediates the effect of general sense of humour on humorous AL. The same does not happen for the non-humorous dataset.

4.6.3 - Moderation models

The full model predicted that shifts in the daily mood affected the action of the sense of humour on AL and mood. Table 4-27 reports the results for the moderation of SHs scales on AL, moderated by mood (mod4-7; mod10-12). None of the models measuring the moderation on general sense of humour results in a good fit (mods 4-7). The social sense of humour models results in a decent fit (mod10-12) for the humorous dataset only, in relation to the model dir1.2, meaning that the daily mood is likely to affect the social sense of humour's effect on advertisement liking. Moderation models explain very little of the variance of AL (the highest R^2 for model mod10 is 0.052). The table also shows the effects on AL of the mechanisms moderated by general sense of humour (mod1-3). The moderation of SH on MECC and MECD (mod1 and mod3) are a good fit; however, if compared to similar models measuring the mediation rather than the moderation (med2, and med3, table 4-26), in both cases the fit is poorer and less parsimonious, confirming the mediating effect for MECC and MECD predicted by the original model. Regarding the models measuring the moderation of the social sense of humour on the effect mechanisms have on AL (mod7-9), they all represent a good fit for the humorous dataset only. Compared to the mediation models, they do represent a significant improvement (most of the models med4-6 were non-converging). However, the models improve only few parameters (while others are worst) when compared to the models measuring the direct effect of the mechanisms on the dependent variable (models dir2.1, 2.2, and 2.3 in table 4-21). Neither do they improve by any means the R^2 of such models. Hypothesis HE is partly verified for the humorous dataset, while only HE3 is verified, considering how each mood, not only bad mood, moderates the effect social sense of humour has on advertisement liking. However, the results could not be considered to build a more complex model since they do not contribute to enhance the variance's explanation in the dependent variable.

Although not considered in the formulation of the hypotheses, the moods are predicted to moderate the effect of sense of humour scale on each mechanism. Table 4-28 shows that none of the models for general sense of humour represents a good fit. Neither does model mod18, numerically a good fit, improve model dir5.7 (table 4-24). Table 4-28 shows the moderation models for social sense of humour. The fitting models (mod22, 23, 24, 28, and 30 for the non-humorous ones, and mod 22, and 24 for the humorous dataset, even though 22 is a poor fit), confirm a modest, but significant, effect of mood on social sense of humour, for the non-humorous dataset only. None of the models show any significant improvement when compared to the direct models (models dir4.3, 4.5, 4.6 for MECE; and dir6.3, 6.5, 6.6, 6.7 for MECD in table 4-25). Regarding the related mediation models (med13-15 for MECE, and med19-21 for MECD from table 4-26) there is indeed an improvement of the model.

However, the R^2 does not improve if compared to both direct and mediation models that are related. Therefore, the models are rejected for parsimony.

The comparison of the models for the humorous dataset has shown that cognitive and disparaging mechanisms mediate the effect of the general sense of humour on advertising liking. These interactions are estimated beside the interaction between the emotional mechanism and the dependent variable. There is also a minimal, but significant, moderation action of good/bad mood on these paths. The next section compares models that only use these factors to build a more complex model nested within the full one.

4.6.4 - Broader models

This section compares models built on some of the successful ones so far seen. These models are nested within the general model. They allow at least two mechanisms to mediate the action of the general sense of humour, social sense of humour, and good mood (the latter having been the most significant for the humorous dataset, with respect to its counterpart the bad mood). The best fitting model is TOT8 (table 4-30). Figure 4-5 reports the model's structure with the parameter, while figure 4-6 reports the full model including the residuals. Model TOT8 is a better fit than model TOT13, that uses good mood as an independent variable, although it still indicates an adequate fit. It should be noted that the model excludes MECE, which is collinear to AL. This means that it only describes the cognitive and disparaging path because the emotional mechanism's collinearity with the dependent variable would falsify the correlation matrix, likely to result in Type I errors. Model TOT16 repeats model TOT8 with MECE as the dependent variable. The poor fit of the model confirms the independence of cognitive and emotional mechanisms, but also, the difference between the emotional mechanism and AL since they do not share the same behaviour. Thus, for the sake of completion, the model reported in figures 4-5 and 4-6 should consider that MECE is placed above, or within, the dependent variable. This observation helps to realise that the emotional mechanism comes after the cognitive one. The theoretical implications of such observation will be discussed in the next chapter.

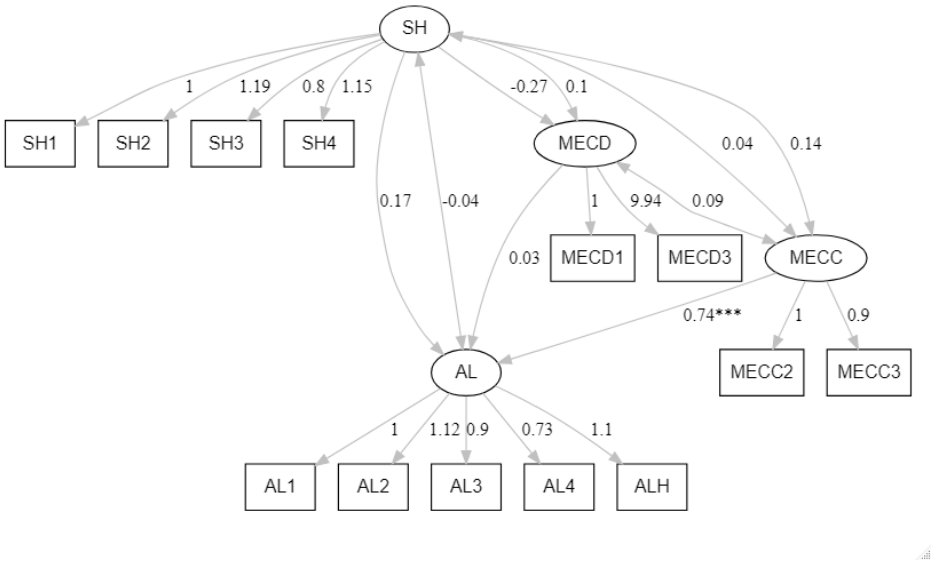

Figure 4-5 - Diagram of the factorial path of model TOT8.

Models TOT14 and TOT 15 are improvements of model TOT8. They add the moods to the same model. Despite having a worst fit than model TOT8, it should be noted that they do improve the R^2 from 0.750 to 0.755 (SH moderated by SER in model TOT14), and 0.766 (SH moderated by GM in model TOT15). This confirms that there is a mild contribution of those moods intended as moderators of the cognitive process shown in the model TOT8, but it cannot be precisely calculated for two main reasons: the number of observations is limited; the research asked participants to upload a message they found humorous, and another they did not find so each day. The effect of mood is not entirely quantifiable by the current research (see the section regarding limitations). Therefore, it can be concluded that moods have a mild moderating effect on the action of sense of humour on the cognitive mechanism, just by simply considering the result of the R^2. However, keeping model TOT8 as the best fit, none of the hypotheses of the HF group can be verified. Model TOT14 partly verifies hypotheses HF, HF1, and HF3, with the serious mood (being lost in thoughts) moderating the effect of the general sense of humour on both cognitive and disparaging mechanisms.

None of the total models for the non-humorous dataset were tested because both cognitive and disparaging mechanisms have a negative effect on the dependent variable. The direct effect models (dir1, dir1.1, and fdir1.2 table 4-22) do not represent a good fit, neither do the moderators have a significant direct effect on AL (models dir3.1, 3.2, 3.3, table 4-22). Overall, models from the non-humorous dataset show poorer fit when compared to the humorous dataset. Only cognitive and disparaging mechanisms have a good fit as effected from general sense of humour. This seems to confirm that the sense of humour identifies the cognitive predisposition in understanding the joke.

Social sense of humour is undoubtedly the independent variable that influence MECE the most (see model dir4.3, table 4-23). Also, direct models measuring the effects of mood on MECE (dir4.5, 4.6, 4.7, same table) are a good fit. Best moderation models where moods moderate the effects SHS on MECE (models mod22-23, 29, table 4-29) are generally a good fit for both datasets, but better for the non-humorous one. This means that the effect of social sense of humour on the emotional mechanism for the unsuccessfully humorous advertisements is indeed negatively moderated by good mood (β= -0.050) and having profound thoughts (SER) (β= -0.030), while bad mood (β= 0.136) has a positive effect. This constitutes an *anomaly* of the emotional mechanism in relation to the theoretical model, since being in a good mood should increase its likelihood for jokes that we do not find funny, while having deep thoughts should increase the cognitive mechanism and, consequently, the advertisement liking and the emotional mechanism. To sum up, the I-A-R describes both the cognitive and emotional attitude in understanding the humorous content (and detecting the humorous intention in unsuccessful humorous messages). However, the anomaly of the emotional mechanism seems to determine a further element, again not strictly emotional (otherwise it should be positively affected by good mood), but both cognitive and emotional, related to the specificity of the content the message carries.

The models reported above have investigated the process of humour appreciation, considering all the observations as independent. The next section will conclude the chapter with the multilevel analysis. It is the core analysis of any diary study and will help to identify how data are nested within each participant.

4.7 - Multilevel modelling

The multilevel modelling aims to identify the contribution of other variables linearly regressed on the dependent variables. The following models were calculated using each dependent variable collapsed into a single variable. Every model only uses individuals' numbering (ID) as intercept. Each participant contributed with at least three messages for each dataset, with most of them completing the full week's recording, meaning that data are naturally nested in the variable ID. For this reason, any model using other variables as intercepts could lead to Type II errors. The variables considered for this research are mostly the same for both sets of data. Gender was coded as a dummy variable. The questionnaire offered other options, but participants resulted as all male or female. Age was grouped as in table 4-2. Research type consists in a dummy variable explaining whether participants found the message accidentally or researched it. Figures of speech (FOS) were coded by the researcher. Only for

the non-humorous dataset, the variable HN quantifies the reason why participants did not find the message humorous.

The results of the multilevel analysis for the humorous dataset are reported in table 4-31, and the non-humorous in table 4-32. For the humorous dataset, the intercept (ID) model is the only valid one, meaning that beside individuals' differences, there are no other variables significantly affecting the advertisement liking. It must be pointed out that since participants could upload the stimuli, this means that the process of finding the message humorous does not change according to gender, level of education, research type, and FOS involved. Rather, the individual differences are the only variable affecting it, and are responsible for 42% of its variance (ICC-0.42). Therefore, hypothesis HB4 is accepted. Regarding the non-humorous dataset, beside the baseline model, models including education and NH are a good fit. The last model (right hand side of table 4-32) includes both these variables. However, the contribution of education is very small (t=2.16, est. = 0.19; std. error= 0.08). Regarding the reason for humour failure, only disgust has a significant negative impact (t= -2.18, est.= -1.86; std. error= 0.85) on the advertisement liking. The humorous advertising failure is then negatively moderated by the level of education, while disgust, and in lesser measure offensiveness, do increase the likelihood of its failure.

The analysis followed measuring the multilevel models with the mechanisms as dependent variables. Table 4-33 reports the results of the multilevel for MECE from the humorous dataset. Along with the intercept, age, educational level, and figures of speech are all significant. However, only age has a significant impact (t=2.14*, est.= 0.30, std. error = 0.14), meaning that there is a tiny significant positive effect of age on MECE.

Table 4-34 synthesises the results for the non-humorous dataset. MECE is affected by the intercept and the reason for which participants did not find the ad humorous. Each reason has a negative impact, but none of the parameters is significant. The results of AL and MECE are indeed very similar, especially considering that the intercept explains around 40% of the variance in both cases. This consistency of results also confirms the consistency of the reasons for humour failure.

Regarding the effects on the cognitive mechanism, the best fitting model for the humorous dataset (see table 4-35) is the intercept, confirming the trend for AL, and MECE for the humorous dataset. Compared to the previous two sets of models, however, ID only explains 26% of the variance of the cognitive mechanism. This means that the cognitive appreciation of humour is less affected by individuality than the measurement of the humorous success (ALH), the advertisement liking, and the

emotional mechanism. This outcome is in line with literature where I-R describes the cognitive mechanism. Also, the successfulness of humour necessarily relies on the understanding of the cognitive mechanism in which the humour is embedded. Finally, this also confirms that I-R comes before the emotional appreciation and the liking of the message, simply because for the humorous dataset the cognitive mechanism is necessarily understood by each participant uploading the message. Here, however, the research intention is to picture the resolution of the incongruity, rather than different individuals' approach to its resolution.

In the non-humorous dataset (table 4-36), as for the other non-humorous models, the intercept and NH are the best fitting model, with none of the NH choices being determinant. However, while for the previous models the reasons were all negative, fear and disgust are positive (but non-significant). Meanwhile "*It is difficult to understand/took too long to understand*" is the only one nearly significant (Est. = -2.41, std. error = 1.30, t= -1.86, p= 0.06).

Finally, table 4-37 shows the models' comparison of the humorous dataset with the disparaging mechanism as a dependent variable. Differently from the other sets of models, for the humorous disparagement, along with the intercept, gender and age also have a significant impact. However, when proved together, only age results are significant. Thus, while gender difference with males appreciating the disparaging humour the most is negligible, the increase of age positively affects the appreciation of disparaging humour. Regarding the non-humorous dataset (table 4-37), intercept and NH have a significant effect on the dependent variable, although none of them is significant, they are all positive, while offensiveness (Est. = -1.34, std. error = 1.23, t= 1.09, p= 0.28) and *It is too simple/silly* (Est. = 1.95, std. error= 1.47, t= 1.329, p= 0.18) have the highest (non-significant) impact. This shows that disparagement is between emotion and cognition since the two elements belong to different groups. The next section will conclude the analysis by focusing on the reasons why humour fails.

Analysis of the humour failure.

NH was significant in every model from the non-humorous dataset. This means that the reasons for humour failure are consistent within the same individual. Table 4-21 shows the descriptive statistics for the reasons why humour fails. In capital letters are the reasons coded from the specification participants gave for the option "other reasons".

Table 4-21 - Mean comparison for each case of NH according to the DVs				
	MECE	MECC	MECD	AL
BIOGRAPHICAL	4.3	6	4	4.3
FEAR	**2.67**	6.17	3.83	4.33
LACK OF KNOWLEDGE	4.17	**3.25**	5.25	4
UNREALISTIC	5	7	4	5
DISGUST	**2.3**	5.52	3.54	2.04
I no longer find it funny	3.51	5.12	4.23	3.62
It is difficult to understand/took too long to understand.	3.73	**3.3**	3.07	3.06
It is offensive toward me or others.	**2.15**	5.43	4.94	2.42
It is too simple/too silly	3.05	5.4	3.77	3.02
Total mean	2.88	5.27	4.14	2.92

Table 4-21 - Descriptive statistics for the NH variable. The table also shows the mean for AL and the mechanisms.

Using the mean of AL as baseline, some reasons for humour failure affect the cognitive mechanism the most (in bold), while others the emotional one. Table 4-39 synthesises the multilevel analysis of the fixed effect for NH regressed on AL, MECE, MECC, and MECD. While the reasons are almost all non-significant, it should be noted that the number of observations for each reason is minimal. A larger panel could allow better results, however, some outcomes are still worth mentioning despite the limited number of observations. Although only *disgust* is significant for NH, using the t value's p as indicator, some reasons are more effective than others for each dependent variable (value in bold in table 4-39). At first glance, advertisement liking, and the emotional mechanism are more negatively affected by *disgust* and *offensiveness*. The cognitive mechanism, on the other hand, is more negatively affected by *difficulty* and excessive *simplicity* of the understanding of the joke, and the lack of knowledge, however, the latter cases affect AL (in bold in the table) more than the emotional mechanism, confirming the nature of humorousness and advertisement liking as both cognitive and emotional. Disparaging mechanism is the only one positively affected by each reason for humour failure, with *offensiveness* and *lack of knowledge* being the reasons to cause the highest increase. This result is in line with the dualism seen in the descriptive statistic section about the disparaging mechanism scale. It has a negative effect on AL for the non-humorous dataset, and vice versa for the other. This means that, despite acknowledging the disparaging intention, and content in successful humour, it is moderated by something else not directly observed in the statistical analysis. Hypotheses for this outcome will be presented within the discussion chapter. *Unrealistic* is positive for each dependent variable, although the number of observations for it is limited. It could be explained that nonsense humour (incongruity without resolution) is still amusing participants for its similarity to childish humour. For this reason, all the others negatively affect the cognitive mechanism, but not AL (for which *fear* is positive, as for MECC), confirming the nature of humorousness and advertisement liking as both cognitive and emotional.

Table 4-22 – Comparison of the direct models regressed on Advertisement liking (AL)

MODEL NAME	DESCRIPTION	χ^2	df	CFI	TLI	RMSEA	SRMR	R^2	Std. regression coefficients
dir1	AL by sense of humour	not converging							
		125.071***	42	0.891	0.858	.094***	0.075	AL=0.014	AL ~ SH=0.088 AL~ SHS= -0.079
dir1.1	AL~SH	50.700**	26	0.969	0.957	0.065	0.04	AL= 0.031	AL ~ SH=0.175 (p=0.057)
		74.706***	26	0.926	0.897	.091**	0.05	AL=0.005	AL ~ SH=0.071
dir1.2	AL~SHS	not converging							
		48.918***	13	0.93	0.886	.111**	0.05	AL=0.003	AL ~ SHS=-0.055
dir2	AL by mechanisms of humour	340.228***	51	0.823	0.77	0.159***	0.214	AL=NA [AL=0.878]	AL ~ MECE=0.981** AL ~MECC=0.289** AL ~MECD=0.055*
		184.274***	51	0.894	0.863	.108***	0.087	AL=NA [AL= 0.971]	AL ~ MECE= 1.013*** AL~ MECC=0.063 AL~ MECD= -0.040
dir2.1	AL~MECE	72.270***	19	0.954	0.933	0.112***	0.04	AL=NA [AL=NA]	AL ~ MECE= 1.028***
		93.613***	19	0.921	0.884	.132***	0.056	`	AL ~MECE=1.010 ***
dir2.2	AL~MECC	46.989***	18	0.964	0.941	.108**	0.032	AL=0.749	AL ~ MECC=0.865***
		41.991***	18	0.95	0.919	.099***	0.045	AL=0.018	AL ~ MECC= -0.135
dir2.3	AL~MECD	30.593**	13	0.973	0.957	0.078	0.028	AL= 0.013	AL ~ MECD = 0.116**
		90.408***	13	0.86	0.783	.162***	0.079	AL=0	AL ~ MECD= -0.018
dir3	AL by moods	268.198***	52	0.848	0.807	0.136***	0.187	AL=0.065	AL ~ GM= 0.247 AL ~ BM=0.020 AL ~ SER= -0.060
		260.640***	52	0.833	0.788	0.133***	0.186	AL=0.029	AL ~GM=0.040 AL~BM=0.166 AL~ SER= -0.019
dir3.1	AL~GM	43.412***	19	0.971	0.957	0.076 (p=0.074)	0.045	AL=0.052	AL ~ GM=0.229*
		62.072***	19	0.0937	0.0908	0.100**	0.062	AL=0.007	AL ~GM= -0.084
dir3.2	AL~BM	49.657***	19	0.969	0.954	0.085*	0.048	AL=0.023	AL ~ BM= -0.153*
		65.838***	19	0.945	0.918	.104***	0.063	AL=0.020	AL ~BM=0.140 (p=0.086)
dir3.3	AL~SER	36.259***	9	0.954	0.923	.116**	0.043	AL=0.002	AL ~ SER= -0.043
		40.218***	9	0.927	0.879	.124***	0.05	AL=0.000	AL ~ SER= -0.019

Table 4-22 - The table allows to compare models between the same set of data (same colour), or between the same model (opposite colours for the samemodel.

Table 4-23 – Models' comparison with the emotional mechanism as the dependent variable									
MODEL	DESCRIPTION	χ^2	df	CFI	TLI	RMSEA	SRMR	R^2	Std. regression coefficients
dir4.1	MECE~SHs	86.927***	25	0.885	0.834	0.105***	0.086	MECE=0.026	MECE ~ SH=0.159 MECE ~ SHS=0.023
		52.773***	25	0.945	0.921	0.07	0.074	MECE=0.001	MECE ~SH=0.005 MECE~ SHS= -0.030
dir4.2	MECE~SH	47.609***	13	0.92	0.872	.109**	0.067	MECE=0.029	MECE ~ SH=0.170 (p=0.091)
		20.313 (p=0.088)	13	0.982	0.971	0.05	0.036	MECE=0.000	MECE ~ SH= -0.005
dir4.3	MECE~SHS	4.746	4	0.997	0.993	0.029	0.029	MECE=0.005	MECE ~SHS=0.072
		1.395	4	1	1.024	0***	0.008	MECE=0.001	MECE ~ SHS= -0.028
dir4.4	MECE~MOODS	213.832***	33	0.824	0.759	0.156***	0.217	MECE=0.067	MECE ~ GM=0.209 MECE ~ BM= -0.038* MECE ~ SER=-0.146 (P=0.059)
		184.026***	33	0.848	0.792	0.142***	0.21	MECE= 0.051	MECE ~GM=0.098 MECE~BM= 0.201 MECE~ SER= -0.032
dir4.5	MECE~GM	25.766***	8	0.962	0.928	0.1*	0.051	MECE=0.051	MECE ~ GM=0.226*
		8.587	8	0.999	0.998	0.018	0.031	MECE=0.003	MECE ~ GM= -0.050
dir4.6	MECE~BM	22.894**	8	0.976	0.954	0.091 (P=0.055)	0.062	MECE=0.033	MECE ~ BM= -0.183 (P=0.072)
		10.553	8	0.996	0.992	0.038	0.032	MECE=0.018	MECE ~ BM= 0.136
dir4.7	MECE~SER	2.871	2	0.996	0.987	0.044	0.026	MECE=0.017	MECE ~ SER= -0.129 (P=0.064)
		0.673	2	1	1.2	0	0.01	MECE= 0.001	MECE~SER= -0.030

Table 4-23 - The models proposed regress independent variables (SH, abd SHS), and moderators (GM, BM, and SER) on the emotional mechanism (MECE). Different datasets models have different background colours.

Table 4-24 – Models' comparison with the cognitive mechanism as the dependent variable									
MODEL	DESCRIPTION	χ^2	df	CFI	TLI	RMSEA	SRMR	R^2	Std. regression coefficients
dir5.1	MECC~SHs	not converging							
		not converging							
dir5.2	MECC~SH	13.847	8	0.983	0.969	0.057	0.035	MECC=0.052	MECC ~ SH= 0.265*
		22.497**	8	0.962	0.929	0.090 (p=0.061)	0.042	MECC=0.088	MECC ~ SH= 0.297*
dir5.3	MECC~SHS	not converging							
		0.041	1	1	1.024	0	0.003	MECC=0.003	MECC ~ SHS= 0.058
dir5.4	MECC~MOODS	185.391***	25	0.829	0.754	.169***	0.231	MECC=0.010	MECC ~ GM= -0.013 MECC ~BM= -0.098 MECC ~SER= -0.008
		not converging							
dir5.5	MECC~GM	14.522**	4	0.973	0.933	0.108*	0.048	MECC=0.016	MECC ~ GM=0.126
		2.073	4	1	1.012	0	0.013	MECC=0.000	MECC ~ GM= 0.011
dir5.6	MECC~BM	4.733	4	0.999	0.997	0.029	0.02	MECC=0.010	MECC ~ BM= -0.099
		not converging							
dir5.7	MECC~SER	0	0	1	1	0	0	MECC=0.00	MECC ~SER= -0.006
		not converging							

Table 4-24 - Models comparison for the cognitive mechanism as dependent variable. in blue the models from the non-humorous dataset

Table 4-25 - Models' comparison with the disparaging mechanism as the dependent variable									
MODEL	DESCRIPTION	χ^2	df	CFI	TLI	RMSEA	SRMR	R^2	Std. regression coefficients
dir6.1	MECD~SHs	not converging							
		not converging							
dir6.2	MECD~SHs	9.138	8	0.996	0.992	0.025	0.027	MECD=0.004	MECD ~ SH=0.065
		22.821**	8	0.954	0.913	0.091 (p=0.057)	0.043	MECD=0.002	MECD ~ SH=0.040
dir6.3	MECD~SHS	not converging							
		0.897	1	1	1.004	0	0.02	MECD=0.000	MECD ~ SHS= 0.000
dir6.4	MECD~MOODS	not converging							
		182.188***	25	0.826	0.749	.167***	0.226	MECD=0.010	MECD ~ GM= -0.033 MECD ~ BM=-0.089* MECD ~ SER=0.243
dir6.5	MECD~GM	4.738	4	0.998	0.994	0.029	0.017	MECD=0.005	MECD ~ GM=0.072
		4.994	4	0.997	0.993	0.033	0.021	MECD=0.000	MECD ~ GM=0.018
dir6.6	MECD~BM	not converging							
		15.682**	4	0.977	0.942	.114*	0.037	MECD= 0.001	MECD ~BM= -0.030
dir6.7	MECD~SER	not converging							
		0 [baseline = 108.624***]	1	1	1	0	0	MECD= 0.008	MECD ~SER=0.092*

Table 4-25 - Comparison of the models with the disparagement mechanism as dependent variable. In blue the non-humorous dataset

Table 4-26 – Mediation models nested in the full model											
MODEL	DESCRIPTION	χ^2	df	CFI	TLI	RMSEA	SRMR	R^2	Std. regression coefficients	Indirect effect	Total effect
med1	AL~MECE~SH	150.761***	51	0.93	0.909	.093***	0.057	AL=NA	MECE~SH=0.204* AL~SH= -0.036 AL~MECE=1.035***	0.211*	0.176*
		156.765***	51	0.911	0.885	0.096***	0.054	AL=NA	MECE~SH=0.011 AL~SH= 0.063 AL~MECE=1.009***	0.011	0.074
med2	AL~MECC~SH	89.342***	41	0.958	0.944	0.073*	0.044	AL=0.753	MECC~SH= 0.197* AL~SH=0.009 AL~MECC= 0.866***	0.170*	0.179 (p=0.055)
		106.842***	41	0.921	0.895	0.084**	0.051	AL=0.032	MECD~SH= 0.301** AL~SH=0.123 AL~MECD= -0.170	-0.051	0.072
med3	AL~MECD~SH	67.411**	41	0.97	0.96	0.54	0.039		MECD~SH= 0.078 AL~SH=0.167 (p=0.06) AL~MECD=0.098*	0.008	0.175 (p=0.086)
		147.758***	41	0.869	0.824	0.107***	0.068	AL=0.006	MECD~SH= 0.023 AL~SH=0.072 AL~MECD= -0.035	-0.001	0.071
med4	AL~MECE~SHS	not converging									
		not converging									
med5	AL~MECC~SHS	not converging									
		58.798***	24	0.948	0.922	0.080*	0.047	al=0.011	MECC~SHS= 0.043 AL~SHS= 0.005 AL~MECC= -0.104	-0.004	0.001
med6	AL~MECD~SHS	not converging									
		not converging									

Table 4-26 - The table reports the comparison of the models with each sense of humour mediated by each mechanism of humour.

Table 4-27 – Moderation models nested within the full model									
MODEL	DESCRIPTION	χ^2	df	CFI	TLI	RMSEA	SRMR	R^2	Std. regression coefficients
mod1	AL~SH*MECC	95.554***	43	0.955	0.942	0.074*	0.074	AL=0.749	AL~SHMECC= 0.865***
		121.458***	43	0.906	0.88	0.090***	0.074	AL=0.018	AL~SHMECC= -0.135
mod2	AL~SH*MECE	156.868***	53	0.927	0.909	0.094***	0.077	AL=NA [AL= NA]	AL~SHMECE= 1.028***
		159.020***	53	0.911	0.889	0.094***	0.056	AL=NA	AL~SHMECE= 1.010***
mod3	AL~SH*MECD	76.608***	43	0.962	0.951	0.059	0.066	AL=0.013	AL~SHMECD= 0.116**
		148.745***	43	0.87	0.833	0.104	0.07	AL=0	AL~SHMECD= -0.018
mod4	AL~SH*GM	148.920***	53	0.914	0.893	0.090***	0.119	AL=0.052	AL~SHGM= 0.229*
		169.141***	53	0.88	0.851	0.098***	0.116	AL= 0.007	AL~SHGM= -0.084
mod5	AL~SH*BM	167.676***	53	0.91	0.888	.098***	0.106	AL=0.023	AL~SHBM= -0.153 (P=0.073)
		181.245***	53	0.887	0.859	0.103***	0.103	AL=0.020	AL~SHBM= 0.140 (p=0.098)
mod6	AL~SH*SER	77.759***	35	0.947	0.0932	0.074*	0.067	AL=0.002	AL~SHSER= -0.045
		86.628***	35	0.919	0.896	0.082**	0.053	AL=0	AL~SHSER= -0.019
mod7	AL~SHS*MECC	64.403***	26	0.962	0.948	0.081*	0.042	AL=0.749	AL~SHSMECC= 0.865***
		71.708***	26	0.932	0.906	0.088**	0.057	AL=0.018	AL~SHSMECC= -0.135
mod8	AL~SHS*MECE	83.349***	34	0.959	0.945	0.82**	0.043	AL=NA	AL~SHSMECE= 1.028***
		117.515***	34	0.919	0.0893	.104***	0.054	AL=NA [AL= 0.979]	AL~SHSMECE= 1.010***
mod9	AL~SHS*MECD	45.611**	26	0.973	0.963	0.058	0.042	AL=0.013	AL~SHSMECD=0.116**
		111.666***	26	0.87	0.82	0.121***	0.07	AL=0	AL~SHSMECD= -0.018
mod10	AL~SHS*GM	73.177***	34	0.958	0.944	0.072 (p=0.057)	0.053	AL=0.052	AL~SHSGM= 0.229*
		97.230***	34	0.919	0.893	0.091***`0.065		AL=0.007	AL~SHSGM= -0.084
mod11	AL~SHS*BM	91.257***	34	0.948	0.931	0.087**	0.082	AL=0.023	AL~SHSBM= -0.153 (P=0.077)
		110.286***	34	0.92	0.894	0.100***	0.089	AL=0.020	AL~SHSBM= 0.140 (p=0.078)
mod12	AL~SHS*SER	45.910***	20	0.961	0.945	0.076 (p=0.067)	0.048	AL=0.002	AL~SHSSER= -0.045
		60.832***	20	0.921	889	0.095**	0.053	AL=0	AL~SHSSER= -0.019

Table 4-27 - Moderation models with AL as dependent variable and SHs as dependent variable. Each mood is individually moderating each sense of humour's scale.

Table 4-28 – Moderation models regressed on the mechanisms of humour (SH as independent variable)									
MODEL	DESCRIPTION	χ^2	df	CFI	TLI	RMSEA	SRMR	R^2	Std. regression coefficients
mod13	MECE~SH*GM	142.978***	34	0.856	0.81	0.120***	0.139	MECE=0.051	MECE~SHGM= 0.226*
		100.805***	34	0.907	0.887	0.093***	0.125	MECE= 0.003	MECE~SHGM= -0.050
mod14	MECE~SH*BM	148.667***	34	0.874	0.833	0.123***	0.125	MECE=0.033	MECE~SHBM= -0.183 (p=0.054)
		108.425***	34	0.915	0.888	0.098***	0.107	MECE=0.018	MECE~SHBM= 0.136
mod15	MECE~SH*SER	58.934***	20	0.911	0.876	0.093**	0.076	MECE=0.017	MECE~SHSER= -0.129 (p=0.073)
		24.078	20	0.99	0.986	0.03	0.036	MECE=0.001	MECE~SHSER= -0.030
mod16	MECC~SH*GM	104.172***	26	0.882	0.837	0.116***	0.146	MECC= 0.016	MECE~SHSER=0.126
		109.521***	26	0.878	0.831	0.119***	0.149	MECC=0	MECC~SHBM= 0.011
mod17	MECC~SH*BM	103.871***	26	0.905	0.868	0.116***	0.126	MECC= 0.010	MECC~SHBM= -0.099
		not converging							
mod18	MECC~SH*SER	25.393*	14	0.968	0.951	0.06	0.07	MECC=0	MECC~SHSER= -0.006
		not converging							
mod`19	MECD~SH*GM	93.509***	26	0.883	0.838	0.108***	0.138	MECD=0.005	MECD~SHGM= 0.072
		103.120***	26	0.877	0.83	0.115***	0.137	MECD=0.005	MECD~SHGM= 0.018
mod20	MECD~SH*BM	not converging							
		111.479	26	0.892	0.85	0.121***	0.119	MECD=0.001	MECD~SHBM=-0.030
mod21	MECD~SH*SER	not converging							
		25.720*	14	0.964	0.946	0.061	0.044	MECD=0.008	MECD~SHSER= 0.092*

Table 4-28 - The models present the moderation of the moods on the effect of general sense of humour regressed on each mood.

Table 4-29 – Moderations models regressed on the mechanisms of humour (SHS as independent variable)									
MODEL	DESCRIPTION	χ^2	df	CFI	TLI	RMSEA	SRMR	R^2	Std. regression coefficients
mod22	MECE~SHS*GM	51.128***	19	0.942	0.914	0.087*	0.06	MECE=0.051	MECE~SHSGM= 0.226 (p=0.059)
		30.457*	19	0.978	0.968	0.052*	0.047	MECE=0.003	MECE~SHSGM= -0.050
mod23	MECE~SHS*BM	60.960***	19	0.941	0.913	0.099**	0.099	MECE=0.033	MECE~SHBM= -0.183 (p=0.068)
		43.011***	19	0.965	0.949	0.075	0.088	MECE=0.018	MECE~SHSBM= 0.136
mod24	MECE~SHS*SER	11.542	9	0.991	0.984	0.036	0.043	MECE=0.017	MECE~SHSSER= -0.129 (p=0.083)
		5.532	9	1	1.022	0	0.031	MECE=0.001	MECE~SHSSER= -0.030
mod25	MECC~SHS*GM	44.502***	13	0.936	0.896	0.104**	0.064	MECC=0.016	MECC~SHSGM= 0.126
		35.247***	13	0.955	0.927	0.087*	0.061	MECC= 0	MECC~SHSGM= 0.011
mod26	MECC~SHS*BM	48.920***	13	0.944	0.91	.111***	0.099	MECC=0.010	MECC~SHSBM= -0.099
		not converging							
mod27	MECC~SHS*SER	13.287*	5	0.962	0.924	0.086	0.05	MECC=0	MECC~SHSSER= -0.006
		not converging							
mod28	MECD~SHS*GM	33.364**	13	0.949	0.918	0.084 (p=0.054)	0.056	MECD= 0.005	MECD~SHSGM= 0.072
		27.046*	13	0.968	0.949	0.069	0.047	MECD=0	MECD~SHSGM= 0.018
mod29	MECD~SHS*BM	not converging							
		49.187***	13	0.94	0.904	0.111***	0.098	MECD= 0.001	MECD~SHSBM= -0.030
mod30	MECD~SHS*SER	not converging							
		5.911	5	0.995	0.99	0.028	0.034	MECD= 0.008	MECD~SHSSER= 0.092*

Table 4-29 - The models present the moderation of the moods on the effect of social sense of humour regressed on each mood.

Table 4-30 – Complex models nested within the full model for the humorous dataset								
MODEL	DESCRIPTION	χ^2	df	CFI	TLI	RMSEA	SRMR	R^2
TOT1	AL~(MECE~GM)+(MECC~SH)	268.673***	106	0.924	0.904	0.083***	0.063	AL=0.747
TOT2	AL~(MECE+MECC)~SH	190.444***	67	0.932	0.907	0.091***	0.056	AL=NA
TOT3	AL~(MECE+MECC)~GM	153.056***	55	0.946	0.924	0.089***	0.055	AL=0.830
TOT4	AL~(MECE+MECC)~GM+SH	271.5531***	110	0.924	0.906	0.081***	0.067	AL=NA
TOT5	AL~(MECE+MECE)~SHGM	314.779***	109	0.904	0.88	0.092***	0.105	AL=0.836
TOT6	AL~(MECC~GM)+(MECE~SH)	279.597***	110	0.921	0.902	0.083***	0.088	AL=NA
TOT7	AL~(MECC~SH)+(MECE~SHGM)	268.702***	109	0.925	0.907	0.081***	0.063	AL=NA
TOT8	AL~(MECC+MECD)~SH	106.301***	56	0.959	0.943	0.063	0.042	AL=0.750
TOT9	AL~(MECE+MECC+MECD)~SH	226.389***	94	0.93	0.911	0.079***	0.054	AL=NA
TOT10	AL~(MECE~SHGM)+(MECC+MECD)~SH	306.239***	135	0.923	0.902	0.075	0.06	AL= 0.879
TOT11	AL~(MECE~GM)+(MECC+MECD)~SH	307.639***	135	0.922	0.902	0.076	0.062	AL= 630
TOT12	AL~(MECC~SH)+(MECD~GM)	218.125***	94	0.92	0.898	0.077**	0.095	AL=0.750
TOT13	AL~(MECC+MECD)~GM	100.553***	45	0.957	0.936	0.074*	0.046	AL=0.741
TOT14	AL~(MECC+MECD)~SH*SER	132.635***	69	0.949	0.933	0.064 (p=0.078)	0.045	AL= 0.755
TOT15	AL~(mecc+mecd)~SH*GM	218.348***	95	0.921	0.9	0.076***	0.096	AL=0.766
TOT16	MECE~(MECC+MECD)~SH	104.046+***	35	0.919	0.873	0.094***	0.059	MECE= 0.685

Table 4-30 - The models are compared only for the humorous dataset. They combine SH, SHS, and GM as dependent variable (the latter as a moderato too), and the three mechanisms of humour.

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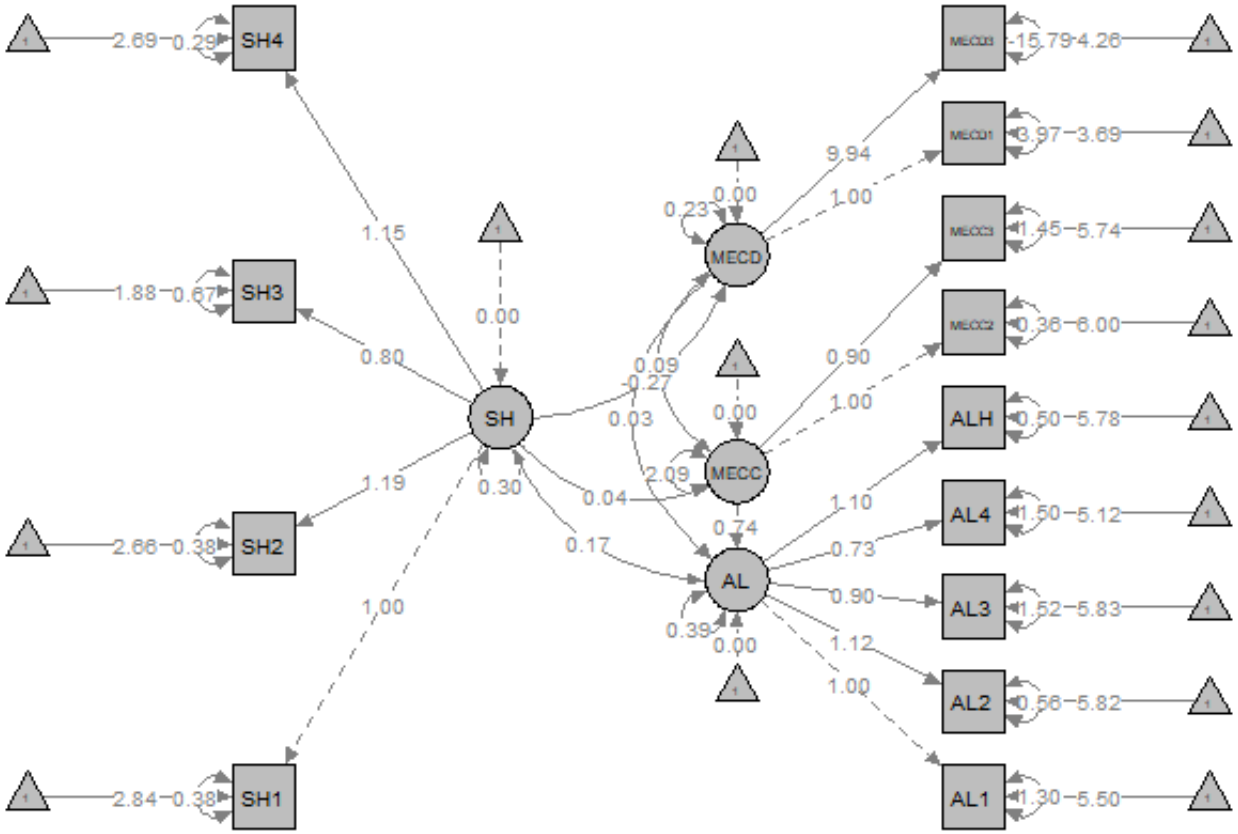

Figure 4-6 - The picture shows model TOT8 including the residuals.

Table 4-31 - Models measuring the effect on Advertisement Liking as the dependent variable for the humorous dataset												
MODEL	ID as intercept		Gender + intercept		Age + intercept		Education + intercept		Type of search + intercept		FOS + intercept	
AIC	710		710.6		711.7		710.4		712.0		728.0	
BIC	720.2		724.3		725.3		724.1		725.6		779.2	
logLik	-352		-351.3		-351.8		-351.2		-352.0		-349.0	
deviance	704		702.6		703.7		702.4		704.0		698.0	
df.resid	221		220		220		220		220		209	
Pseudo R^2 (fixed)	0		0.02		0		0.02		0		0.02	
Pseudo R^2 (total)	0.42		0.42		0.42		0.42		0.42		0.42	
ICC	0.42		0.41		0.42		0.41		0.42		0.41	
FIXED EFFECTS	t value	p	t value	p	t value	p	t value	p	t value	p	t value	p
Intercept (ID)	33.63	***	23.82	***	13.31	***	17.65	***	15.19	***	13.427	***
gender (male)			1.17	0.25								
age					0.54	0.59						
education							-1.25	0.22				
Type of research									0.04	0.97	non-significant	
FOS												
RANDOM EFFECTS	Variance	Std. dev.	Variance	Std. dev.	Variance	Std. dev.	Variance	Std. dev.	Variance	Std. dev.	Variance	Std. dev.
intercept	0.76	0.87	0.72	0.85	0.75	0.86	0.72	0.85	0.76	0.77	0.72	0.85
residual	1.05	1.02	1.04	1.02	1.04	1.02	1.05	1.02	1.04	1.02	1.02	1.01
Correlations			-0.7		-0.91		-0.88		-0.89		N/A	
ANOVA	(Baseline)											
Δ χ^2	χ^2	51.36	1.35		0.29		1.52		0		5.93	
Δ df	df	1	1		1		1		1		12	
P	p	***	0.25		0.59		0.22		0.97		0.92	

Table 4-31 - The multilevel models for the humorous AL. ID represent the intercept (first model) and remains in each of the following models where the variables are predictors of AL. Models are only for the humorous dataset.

Table 4-32 – Multilevel models with AL as the dependent variable the non-humorous dataset																
MODEL	Intercept		Gender + intercept		Age + intercept		Education + int.		Type of research + int.		FOS + intercept		NH + intercept		Education + NH + int.	
AIC	736.0		737.5		737.4		733.4		738.0		749.1		722.7		718.9	
BIC	746.3		751.2		751.1		747.1		751.6		800.4		760.3		760.0	
logLik	-365.0		-364.7		-364.7		-362.7		-365.0		-359.5		-350.3		-347.5	
deviance	730.0		729.5		729.4		725.4		730.0		719.1		700.7		694.9	
df.resid	223		222		222		222		222		211		215		214	
Pseudo R^2 (fixed)	0.00		0.01		0.01		0.06		0.00		0.04		0.10		0.16	
Pseudo R^2 (total)	0.37		0.37		0.36		0.37		0.37		0.42		0.41		0.40	
ICC	0.37		0.36		0.36		0.33		0.37		0.40		0.34		0.29	
FIXED EFFECTS	t value	p	t value	p	t value	p	t value	p	t value	p	t value	p	t value	p	t value	p
Intercept (ID)	18.29	***	13.72	***	6.83	***	7.49	***	7.36	***	8.28	***	4.85	***	3.82	***
gender (male)			-0.73	0.47												
age					0.79	0.43										
education							2.22	*			Only epanorthosis below is significant				2.51	*
Type of research									0.25	0.80						
figures of speech											-2.00	*	Only disgust below		Only disgust below	
NH													-2.18	*	-2.12	*
RANDOM EFFECTS	Variance	Std. dev.	Variance	Std. dev.	Variance	Std. dev.	Variance	Std. dev.	Variance	Std. dev.	Variance	Std. dev.	Variance	Std. dev.	Variance	Std. dev.
intercept	0.68	0.82	0.66	0.81	0.66	0.81	0.57	0.75	0.68	0.83	0.73	0.86	0.54	0.73	0.42	0.65
residual	1.17	1.08	1.17	1.08	1.17	1.08	1.17	1.08	1.17	1.08	1.10	1.05	1.04	1.02	1.04	1.02
ANOVA																
Δ χ^2	χ^2	47.19	0.53		0.62		4.61		0.06		10.96		29.34		35.09	
Δ df	df	1	1		1		1		1		12		8		9	
p	p	***	0.46		0.43		*		0.80		0.53		***		***	

Table 4-32 - The multilevel models for AL. ID represent the intercept (first model) and remains in each of the following models where the variables are predictors of AL. Models are only for the non-humorous dataset.

Table 4-33 - Multilevel analysis with MECE as the dependent variable for the humorous dataset												
MODEL	ID as intercept		Gender + intercept		Age + intercept		Education + intercept		Research type + intercept		FOS + intercept	
AIC	752.6		753.2		750.3		754.2		754.5		751.5	
BIC	762.8		766.8		763.9		767.8		768.2		802.7	
logLik	-373.3		-372.6		-371.1		-373.1		-373.3		-360.8	
deviance	746.6		745.2		742.3		746.2		746.5		721.5	
df.resid	221		220		220		220		220		209	
Pseudo R^2 (fixed)	0.00		0.02		0.06		0.01		0.00		0.07	
Pseudo R^2 (total)	0.43		0.43		0.43		0.43		0.43		0.50	
ICC	0.43		0.42		0.39		0.43		0.43		0.46	
FIXED EFFECTS	t value	p	t value	p	t value	p	t value	p	t value	p	t value	p
Intercept (ID)	28.14	***	19.79	***	10.34	***	14.17	***	13.08	***	12.09	***
gender (male)			1.20	0.24								
age					2.14	*						
education							-0.63	0.53				
Type of research									-0.21	0.83		
figures of speech											Nonsignificant	
NH												
Humour Type												
RANDOM EFFECTS	Variance	Std. dev.	Variance	Std. dev.	Variance	Std. dev.	Variance	Std. dev.	Variance	Std. dev.	Variance	Std. dev.
intercept	0.94	0.97	0.90	0.95	0.80	0.90	0.93	0.97	0.93	0.97	0.96	0.98
residual	1.26	1.12	1.26	1.12	1.26	1.12	1.26	1.12	1.26	1.12	1.10	1.05
ANOVA	(Baseline model)											
Δ χ^2	χ^2	55.85	1.41		1.00		0.40		1.00		25.05	
Δ df	df	1	1		1		1		1		1	
p	p	***	0.23		*		*		0.84		*	

Table 4-33 - The multilevel models for MECE. ID represent the intercept (first model) and remains in each of the following models where the variables are predictors of AL. Models are only for the humorous dataset.

Table 4-34 - Multilevel analysis with MECE as the dependent variable for the non-humorous dataset														
MODEL	intercept		Gender + intercept		Age + intercept		Education + intercept		Type of search + intercept		FOS + intercept		NH + intercept	
AIC	806.1		807.8		808.0		805.6		801.1		816.1		802.8	
BIC	816.4		821.5		821.7		819.3		821.8		867.4		840.5	
logLik	-400.1		-399.9		-400.0		-398.8		-400.0		-393.1		-390.4	
deviance	800.1		799.8		800.0		797.6		800.1		786.1		780.8	
df.resid	223		222		222		222		222		211		215	
Pseudo R^2 (fixed)	0.00		0.00		0.00		0.03		0.00		0.05		0.08	
Pseudo R^2 (total)	0.34		0.34		0.34		0.34		0.34		0.38		0.35	
ICC	0.34		0.34		0.34		0.32		0.34		0.35		0.29	
FIXED EFFECTS	t value	p	t value	p	t value	p	t value	p	t value	p	t value	p	t value	p
Intercept (ID)	16.07	***	11.97	***	6.33	***	0.36	6.62	6.31	***	7.34	***	4.07	***
gender (male)			-0.85	0.57										
age					0.27	0.79								
education							0.10	1.61						
Type of research									0.19	0.85				
figures of speech											None			
NH													None	
RANDOM EFFECTS	Variance	Std. dev.	Variance	Std. dev.	Variance	Std. dev.	Variance	Std. dev.	Variance	Std. dev.	Variance	Std. dev.	Variance	Std. dev.
intercept	0.84	0.91	0.83	0.91	0.83	0.91	0.76	0.87	0.84	0.92	0.83	0.91	0.63	0.79
residual	1.62	0.13	1.62	1.28	1.62	1.27	1.62	1.28	1.62	1.27	1.51	1.23	1.53	1.24
NH														
ANOVA														
Δ χ^2	χ^2	38.84	0.34		0.07		2.50		0.04		14.00		19.28	
Δ df	df	1	1		1		1		1		12		8	
p	p	***	0.56		0.79		0.11		0.85		0.30		*	

Table 4-34 - The multilevel models for MECE. ID represent the intercept (first model) and remains in each of the following models where the variables are predictors of MECE. Models are only for the non-humorous dataset.

Table 4-35 - Multilevel analysis with MECC as the dependent variable for the humorous dataset												
MODEL	ID as intercept		Gender + intercept		Age + intercept		Education + intercept		Type of Research + int.		FOS + intercept	
AIC	810.8		811.9		812.0		812.3		812.7		824.0	
BIC	821.0		825.6		825.6		825.9		826.4		875.2	
logLik	-402.4		-402.0		-402.0		-402.1		-402.4		-397.0	
deviance	804.8		803.9		804.0		804.3		804.7		794.0	
df.resid	221		220		220		220		220		209	
Pseudo R^2 (fixed)	0.00		0.01		0.01		0.01		0.00		0.04	
Pseudo R^2 (total)	0.26		0.27		0.26		0.26		0.26		0.30	
ICC	0.26		0.26		0.26		0.26		0.26		0.28	
FIXED EFFECTS	t value	p	t value	p	t value	p	t value	p	t value	p	t value	p
Intercept (ID)	35.38	***	25.08	***	13.84	***	17.76	***	13.61	***	12.54	***
gender (male)			0.93	0.36								
age					0.89	0.38						
education							-0.70	0.49			Only epanorthosis is significant	
Type of research									-0.28	0.78		
figures of speech											-2.23	*
RANDOM EFFECTS	Variance	Std. dev.	Variance	Std. dev.	Variance	Std. dev.	Variance	Std. dev.	Variance	Std. dev.	Variance	Std. dev.
intercept	0.64	0.80	0.62	0.79	0.62	0.78	0.63	0.79	0.63	0.79		
residual	1.77	1.33	1.77	1.33	1.77	1.33	1.77	1.33	1.78	1.33		
ANOVA												
Δ χ^2	χ^2	23.17	0.87		0.79		0.49		0.07		10.79	
Δ df	df	1	1		1		1		1		12	
p	p	***	0.35		0.37		0.48		0.79		0.55	

Table 4-35 - The multilevel models for MECC. ID represent the intercept (first model) and remains in each of the following models where the variables are predictors of MECC. Models are only for the humorous dataset.

Table 4-36 - Multilevel analysis with MECC as the dependent variable for the non-humorous dataset														
MODEL	ID as intercept		Gender + intercept		Age + intercept		Education + int.		Type of search + int.		FOS + intercept		NH + intercept	
AIC	893.1		894.8		895.1		894.3		894.8		908.0		885.6	
BIC	903.4		908.5		908.8		907.9		908.5		959.3		923.2	
logLik	-443.6		-443.4		-443.6		-443.1		-443.4		-439.0		-431.8	
deviance	8887.1		886.8		887.1		886.3		886.8		878.0		863.6	
df.resid	223		222		222		222		222		221		215	
Pseudo R^2 (fixed)	0.00		0.00		0.00		0.01		0.00		0.04		0.09	
Pseudo R^2 (total)	0.19		0.19		0.19		0.20		0.20		0.22		0.28	
ICC	0.19		0.19		0.19		0.19		0.20		0.19		0.21	
FIXED EFFECTS	t value	p	t value	p	t value	p	t value	p	t value	p	t value	p	t value	p
Intercept (ID)	30.19	***	22.16	***	0.42	12.33	15.25	***	9.79	***	9.77	***	4.72	***
gender (male)			-0.55	0.59										
age					0.14	0.03								
education							-0.92	0.36						
Type of research									0.55	0.58				
figures of speech											Nonsignificant			
NH													Non-Significant	
RANDOM EFFECTS	Variance	Std. dev.	Variance	Std. dev.	Variance	Std. dev.	Variance	Std. dev.	Variance	Std. dev.	Variance	Std. dev.	Variance	Std. dev.
intercept	0.62	0.79	0.61	0.78	0.62	0.79	0.60	0.77	0.62	0.79	0.57	0.75		
residual	2.57	1.60	2.58	1.60	2.57	1.60	2.57	1.60	2.57	1.60	2.48	1.58		
ANOVA														
$\Delta \chi^2$	χ^2	14.56	0.30	0.00	0.84	0.30	9.14	23.50						
Δ df	df	1	1		1		1		1		12		8	
p	p	***	0.58		0.98		0.36		0.58		23.50		**	

Table 4-36 - The multilevel models for MECC. ID represent the intercept (first model) and remains in each of the following models where the variables are predictors of MECC. Models are only for the non-humorous dataset.

Table 4-37 - Multilevel analysis with MECD as the dependent variable for the non-humorous dataset														
MODEL	IS as intercept		Gender + intercept		Age + intercept		Education + intercept		Type of research + int.		FOR + intercept		Gender, age, and intercept	
AIC	877.2		874.2		871.5		876.8		877.3		889.3		870.3	
BIC	887.4		887.9		885.2		890.4		891.0		940.5		887.3	
logLik	-435.6		-433.1		-431.8		-434.4		-434.7		-429.6		-430.1	
deviance	871.2		866.2		863.5		868.8		869.3		859.3		860.3	
df.resid	221		220		220		220		220		209		219	
Pseudo R^2 (fixed)	0.00		0.04		0.06		0.02		0.01		0.05			
Pseudo R^2 (total)	0.15		0.15		0.15		0.16		0.20		0.18			
ICC	0.15		0.12		0.10		0.14		0.19		0.13			
FIXED EFFECTS	t value		p		t value		p		t value		p		t value	
Intercept (ID)	24.84	***	17.73	***	8.87	***	13.77	p	t value	p	t value	p	t value	p
gender (male)			2.30	*				***	6.69	***	6.52	***	8.86	***
age					2.95	**							1.85	0.07
education							-1.58				Nonsignificant (double entendre near significant reported below)		2.59	*
Type of research								0.13						
figures of speech									1.46	0.15				
NH											1.73	0.08		
RANDOM EFFECTS	Variance	Std. dev.	Variance	Std. dev.	Variance	Std. dev.	Variance							
intercept	0.46	0.68	0.34	0.59	0.28	0.53	0.41	Std. dev.	Variance	Std. dev.	Variance	Std. dev.	Variance	
residual	2.54	1.59	2.54	1.59	2.55	1.60	2.54	0.64	0.57	0.76	0.38	0.61	0.21	Std. dev.
								1.59	2.47	1.57	2.44	1.56	2.55	0.46
ANOVA														1.60
Δ χ^2	χ^2	9.71	4.93	7.67	2.41	1.86	11.89							
Δ df	df	1	1	1	1	1	12	10.93						
p	p	***	*		**		0.12		0.17		0.45		2	

Table 4-37 - The multilevel models for MECD. ID represent the intercept (first model) and remains in each of the following models where the variables are predictors of MECD. Models are only for the humorous dataset.

Table 4-38 - Multilevel analysis with MECD as the dependent variable for the non-humorous dataset														
MODEL (Effects on AL)	ID as Intercept		Gender + intercept		Age + intercept		Education + int.		Type of search + intercept		FOS		HN	
AIC	897.7		899.3		899.6		899.7		899.4		908.4		896.2	
BIC	908.0		913.0		913.3		913.4		913.0		953.7		933.8	
logLik	-445.9		-445.6		-445.8		-445.9		-445.7		-463.2		-437.1	
deviance	891.7		891.3		891.6		891.7		891.4		872.4		874.2	
df.resid	223		222		222		222		222		211		215	
Pseudo R^2 (fixed)	0.00		0.00		0.00		0.00		0.00		0.08		0.08	
Pseudo R^2 (total)	0.23		0.23		0.23		0.23		0.23		0.29		0.28	
ICC	0.23		0.23		0.23		0.23		0.23		0.23		0.22	
FIXED EFFECTS	t value	p	t value	p	t value	p	t value	p	t value	p	t value	p	t value	p
Intercept (ID)	22.32	***	16.56	***	9.50	***	10.79	***	7.37	***	8.60	***	2.85	**
gender (male)			-0.67	0.51										
age					-0.38	0.71								
education							-0.03	0.97			Onky metaphor below is significant			
Type of research									0.62	0.54				
figures of speech											-2.30	*		
NH													Nonsignificant	
RANDOM EFFECTS	Variance	Std. dev.	Variance	Std. dev.	Variance	Std. dev.	Variance	Std. dev.	Variance	Std. dev.	Variance	Std. dev.	Variance	
intercept	0.76	0.87	0.75	0.87	0.76	0.87	0.76	0.87	0.75	0.87	0.71	0.84	0.67	Std. dev.
residual	2.58	1.61	2.58	1.61	2.58	1.61	2.58	1.61	2.58	1.61	2.36	1.54	2.40	0.82
														1.55
ANOVA														
Δ χ^2	χ^2	21.36	0.45	0.14	0.00	0.38	19.36	17.51						
Δ df	df	1	1		1		1		1		12		8	
p	p	***	0.50		0.71		0.97		0.54		0.08		*	

Table 4-38 - The multilevel models for MECD. ID represent the intercept (first model) and remains in each of the following models where the variables are predictors of MECD. Models are only for the non-humorous dataset.

Table 4-39 - Comparison of the reasons for humour failure across the different dependent variables with ID as intercept

	AL					**MECE**					**MECC**					**MECD**				
	Est.	S.E.	t val.	d.f.	p	Est.	S.E.	t val.	d.f.	p	Est.	S.E.	t val.	d.f.	p	Est.	S.E.	t val.	d.f.	p
(Intercept)	**4.01**	**0.83**	**4.85**	**223.06**	**0.000**	**4.03**	**0.99**	**4.07**	**224.15**	**0.000**	**5.62**	**1.19**	**4.72**	**225.95**	**0.000**	**3.47**	**1.22**	**2.85**	**225.83**	**0.000**
DISGUST	**-1.86**	**0.86**	**-2.18**	**217.92**	**0.030**	**-1.66**	**1.03**	**-1.61**	**220.54**	**0.110**	0.06	1.24	0.05	225.24	0.960	0.23	1.27	0.18	224.83	0.860
FEAR	0.44	1.03	0.43	213.81	0.670	-0.97	1.24	-0.79	216.09	0.430	0.40	1.50	0.27	222.20	0.790	0.29	1.54	0.19	221.64	0.850
I no longer find it funny	-0.79	0.84	-0.93	217.35	0.350	-0.93	1.01	-0.92	219.95	0.360	-0.52	1.22	-0.43	224.94	0.670	0.91	1.25	0.73	224.49	0.470
It is difficult to understand/took too long to understand.	-0.90	0.89	**-1.00**	217.12	0.320	-0.43	1.07	-0.40	219.69	0.690	**-2.41**	**1.30**	**-1.86**	**224.76**	**0.060**	0.63	1.33	0.47	224.30	0.640
It is offensive toward me or others.	**-1.40**	**0.83**	**-1.69**	**217.03**	**0.090**	**-1.66**	**1.00**	**-1.66**	**219.62**	**0.100**	-0.18	1.20	-0.15	224.76	0.880	1.35	1.23	**1.09**	224.28	0.280
It is too simple/too silly	-0.94	0.83	**-1.13**	217.62	0.260	-0.92	0.99	-0.92	220.23	0.360	-0.29	1.20	-0.24	225.08	0.810	0.26	1.23	0.21	224.64	0.830
LACK OF KNOWLEDGE	-0.12	0.99	-0.12	215.52	0.910	-0.31	1.18	-0.26	217.90	0.790	**-2.23**	**1.43**	**-1.55**	**223.47**	**0.120**	1.95	1.47	**1.33**	222.94	0.190
UNREALISTIC	0.06	1.36	0.04	209.73	0.970	0.44	1.64	0.27	211.43	0.790	0.74	1.99	0.37	218.06	0.710	0.64	2.03	0.32	217.56	0.750

Table 4-39 - The table reports the values for the fixed effects of the multilevel analyses with teach dependent variable considered, and the reason why humour failed (NH) regressed with the intercept (ID) for the non-humorous dataset.

Table 4-40 - In bold the accepted hypotheses of research

Original hypotheses	Hypotheses modified after the EFA
HA – message's humorousness and message's liking are correlated.	
HB – Sense of humour is correlated to Adliking	
HB1 – Cognitive Sense of humour is correlated to AD_{liking}	**General Sense of humour is correlated to Adliking**
HB2 – Emotional Sense of humour is correlated to AD_{liking}	
HB3 – Social-cognitive Sense of humour is correlated to AD_{liking}	
HB4 – Individual differences in sense of humour determine AD_{liking}.	
HC – There is a correlation between sense of humour and the perceived mechanism of humour.	
HC1 – There is a correlation between cognitive sense of humour and the perceived cognitive mechanism of humour.	**HC1 – There is a correlation between general sense of humour and the perceived cognitive mechanism of humour.**
HC2 – There is a correlation between emotional sense of humour and the perceived emotional mechanism of humour.	
HC3 – There is a correlation between social-cognitive sense of humour and the perceived disparaging mechanism of humour.	
HC4 – There are individual differences in the way sense of humour is correlated to the perceived mechanisms of humour.	
HD – Mechanisms of humour mediate the effect of Sense of humour on AD_{liking}.	
HD1 – Cognitive mechanism of humour mediates the effect of cognitive Sense of humour on AD_{liking}.	**HD1 – Cognitive mechanism of humour mediates the effect of General Sense of humour on AD_{liking}.**
HD2 – Emotional mechanism of humour mediates the effect of emotional Sense of humour on AD_{liking}.	
HD3 –Disparaging mechanism of humour mediates the effect of social-cognitive Sense of humour on AD_{liking}.	
HD4 – Individual differences in perceived mechanism of humour moderates the effect of sense of humour on AD_{liking}.	
HE – Daily mood moderates the effect sense of humour has on $AD_{liking.}$	
HE1 – Serious mood moderates the effect cognitive sense of humour has on $AD_{liking.}$	
HE2 – Cheerful mood moderates the effect emotional sense of humour has on $AD_{liking.}$	
HE3 – Bad mood (grumpiness) moderates the effect social cognitive sense of humour has on $AD_{liking.}$	**HE3 – Moods moderates the effect social cognitive sense of humour has on ADliking.**
HE4 – Individual differences affect way the mood moderates the effect sense of humour has on $AD_{liking.}$	
HF – Advertising liking is determined by sense of humour which effect is moderated by the daily mood and mediated by the perceived mechanism of humour.	
HF1 – Advertising liking is determined by cognitive sense of humour which effect is moderated by the serious daily mood and mediated by the perceived cognitive mechanism of humour.	
HF2 – Advertising liking is determined by emotional sense of humour which effect is moderated by the cheerful daily mood and mediated by the perceived emotional mechanism of humour.	
HF3 – Advertising liking is determined by social-cognitive sense of humour which effect is moderated by the bad (grumpy) daily mood and mediated by the perceived disparaging mechanism of humour.	
HF4 – There are individual differences on the moderated mediation of the full model.	

Table 4-40 - Hypotheses of research reviewed after the EFA. In bold the hypotheses accepted.

Chapter 5 - Discussion

5.1 - Synthesis of the finding of the research

Given the mixed methodology of the analysis, it is pivotal to synthesise what the findings of this study are.One of the main objectives of this research is to collect and classify examples of humorous advertising from the real market. The comparison of the datasets has allowed the detection of some important antecedents to the success of humorous advertising. Relatedness to the product/brand increases the likelihood of successful humour. Regarding the typology of product/brand, although most messages use humour to advertise low-involvement products, the nature of the product does not affect the success of humour, neither does the type of humour used. Humour is indeed a meta-appeal, since over 60% of the examples collected present the coexistence of it with other appeals. This excludes figures of speech, which were observed in any case.The analysis of figures of speech, together with the self-reported salience of the humorous element (referred to as humorous intention for unsuccessful humour) has shown that while different figures of speech have no significant impact on the success of humour, they all carried the understanding of an alternative meaning not immediately intuited (see appendix 7). This alternative meaning is added to the one of the metaphors subjectively, meaning that different individual can associate different alternative meaning to the metaphor in order to perceive the humorousness. The metaphorical meaning is not directly involved in determining the success/failure of humour. The mental process of associating an alternative meaning seems to disclose the nature of the success/unsuccess of the humorous messages. It has been observed that different individuals seem to interpret the alternative meaning differently.

The SEM analysis has shown that while the emotional mechanism determines the advertising liking for both sets of data, represented by the collinearity between the two variables, the cognitive mechanism is only positively correlated to the humorous dataset. This result shows a contradictive nature of successful humour: it is incongruous at a cognitive level (similarly observed in the analysis of figures of speech), but congruent to the mental schemata the individual carries. The cognitive effort needed to decode the humorous message, in case of unsuccessful humour, has a negative effect on the message liking. In relation to the role played by the moods, the most interesting finding is the *anomaly* of the emotional mechanism, for which being in a bad mood highs the tolerance for messages which humorousness would normally fail because of incongruity to the mental schemata.

The multilevel analysis has confirmed that the individual differences are the only variable (among those observed) accountable for the success of humorous messages. The multilevel analysis on the

reasons for humour failure, one of the first systematic contributions in the field, has confirmed that there are indeed cognitive and emotional reasons for its failure.

Finally, the research has observed disparaging humour. From SEM analysis, disparaging humour has a behaviour like the cognitive mechanism. Meaning that there is a cognitive effort for its understanding. However, the lack of validity of the scale for the successful humour, suggests that the disparaging intention is somehow lowered when the humour is successful. This finding, first of its genre, needs further discussion.

This section will also discuss the implication of mood on the appreciation of humorous messages.

5.2 - The understanding of an alternative meaning

Figures of speech can initiate mental states such as beauty, play, and humour. Mental states are not mutually exclusive of each other. We can simultaneously perceive beauty, playfulness, and humour. However, the difference between a playful, beautiful, or humorous figure of speech lies in the cognitive mechanisms involved. For example, the repetition of sound of rhymes activates playfulness, because we know the rule of the rhyming words at the end of each verse. Beauty comes from associations we know of, such as a beautiful woman called a beautiful flower. Humorous figures of speech carry on a meaning somehow new, or unthought, enough to activate the cognitive arousal (alert). In this sense, the threat is cognitive. The axial coding (appendix 7) shows that participants identified the humorous salience as either association, contradiction, contrast, or dissociation of two or more alternative meanings: one (or some) obvious, another alternative, with the latter being the cue of the message salient to its humour. While the elaboration likelihood of the incongruity (ELI) (Lee and Schumann, 2004) helps to identify which cue is humorous, the Construal Level theory (CLT) (Trope and Liberman, 2010) shows that the alternative meaning carried by the incongruity is not necessarily new, but can simply belong to a different level of construal that justifies the cognitive effort at the root of the incongruity-resolution. Since the interpretation and the understanding come from pre-existing cognitive fields, the meaning is new because not imminent in the process of interpretation, rather than strictly unknown. In other words, the meaning generated is an alternative meaning not considered before.This interpretation is in line with the neurological model that identifies the dual role of dopamine release that not only generates the sense of pleasure typical of humour appreciation, but also plays a key role in fixing the alternative meaning in the memory (DeYoung, 2013).

The coding of every message in a figure of speech, regardless of the success or failure of the humour, and the fact that neither figure of speech in multinomial logistic regression results linked to the success

(χ^2=62.631, df=72, p=0.777, Parson= 0), or failure (χ^2=285.776, df=336, p=0.978, Parson= 0) of the humour, shows that there is something intrinsically carried within humorous figures of speech. This outcome verifies what was hypothesised in QC-H1, and 2. Lavoie and Main (2019) call flow the enjoyable but effortless state of attention. Microflow is strictly associated with play. While the results of model TOT8 show that humorous appreciation comes with a state of deep flow. This attention is generated by the decoding, or understanding, of the alternative meaning carried out by figures of speech, following the neurochemical model already discussed.

The description of such cognitive efforts justifies the success of research analysing the cognitive aspect of humour, especially intended as antecedents to humour appreciation, such as the Need for Humour (Cline, Altsech and Kellaris, 2003). Cognitive effects of humour on memory (Cline, Altsech and Kellaris, 2003; Cline, Kellaris and Bondra, 2007; Cline, Kellaris and Machleit, 2011), and the vampire effect studies (Eisend, 2011), on the other hand, conclude that humour can be harmful for the marketing message it is embedded in. Rejer and Jankowski (2017) show that advertising disruption during cognitive tasks causes a drop in prefrontal and frontal cortex. Humour, instead, increases the cognition by activating those areas. This explains why the use of humour is increasing across the media proliferation of current times.

The cognitive activity necessary for understanding the humorous message also reduces the resistance to persuasive cues of message narration (Wentzel, Tomczak and Herrmann, 2010). Humour attracts our cognition during other cognitive tasks (for example social media fruition), and acts as a meta-cognitive disfluency that enhances attention toward the message (Sung, Vanman and Hartley, 2022). Thus, it transfers memory to peripheral cues such as the product or brand (Berger, Wagner and Schwand, 2012), contradicting the negative effects of cognitive humour found by previous research. This thesis adds to the current literature on relatedness of humour to the product/brand (Eisend, 2009, 2022), because it shows that related messages are associated to higher success of the humour. The increase of memory for peripheral cues caused by cognitive attention approaches the cognitive effects of humour on memory, matching the outcomes of similar research on the emotional path (Strick *et al.*, 2013). The connection between emotion and cognition denies the existence of humorous content exclusively cognitive, or exclusively emotional.

5.3 - The role of emotion and cognition in humour appreciation

The sense of humour scale was designed by neurologists to preserve the separation between emotion and cognition, along with the social sense of humour (Svebak, 1974, 1996, 2010; Svebak, Romundstad and Holmen, 2010; Romundstad *et al.*, 2016). This current research shows that it does not follows this

structure. The general sense of humour scale resulting from the EFA (table 4-12) includes both the cognitive and emotional dimensions. This confirms the postulation that individuals' sense of humour can be separated between the two only in *a posteriori* analysis. Results from the Structural Equation Modelling (SEM) analysis about the relationship between emotion and cognition further prove this point. The collinearity between the emotional mechanism and humorous advertising liking, and the good fit of model 2.1 (table 4-22), suggest a predominance of the emotional mechanism on determining the success (and failure) of humour. Model TOT8 (table 4-30), on the other hand, points out that the cognitive mechanism is an antecedent to both the emotional mechanism and message liking only for successful humour. The general sense of humour is better correlated to the cognitive mechanism, becoming mainly an attitude to understanding the humorous stimulus. Evidence to support this point is the relationship between humorous messages and figures of speech (Attardo, 2005, 2015; Krikmann, 2009; Piata, 2016; Kim and Kim, 2018) already seen.

Table 4-20 shows that while for unsuccessful humour the correlation between cognitive and emotional factors is negative (β= -0.310*), it is highly positive and nearly collinear in the humorous dataset (β= 0.875***). The synergy of emotion and cognition is the only way that can determine the success of humorous messages. Other research in the field of psychology and neurology tend to see the dichotomy just as a theoretical construct, rather than a biological trait. There are no areas of the brain exclusively processing emotion or cognition (Pessoa, 2008; Pessoa and Adolphs, 2010), but rather, some areas more or less involved in processing cognitive tasks (e.g. prefrontal cortex), or emotions (e.g. amygdala). This result rejects previous research where the classifications are based on researcher taste. From the humorous dataset, stimulus number 202, uploaded by participant S17M2POL could represent one of the most alleged cognitive stimuli (see figure 5-1).

Figure 5-1 - Meme by Starecat.com available at the link https://starecat.com/content/wp-content/uploads/vans-logo-nope-ans-to-power-of-a-half-drake-maths-mathematics.jpg accessed the 1st February 2023.

The meme uses predominantly mathematic language where the logo of fashion brand Vans™, which resembles a square root sign (top right in the picture), is simplified in a fractional exponent. The mathematical joke (*pun*, as the participant identifies it) could lead to the idea of the humour being exclusively cognitive. However, the use of *Drakeposting* (i.e. meme built with the rapper Drake as in the left-hand side of the picture) denotes emotional inferences from the facial expression and the body language of the rapper (Afifah and Sari, 2019). Understanding the mathematical pun could itself be subject to emotional processing. For example, the participant could have reminisced about their struggle to learn the mathematics of square roots (or other emotions connected to it). This case supports the finding that there is not a neat division between emotion and cognition in humour appreciation. This result also subverts the idea that the arousal consists of an emotional process of humour appreciation.

In neurology, arousal refers mainly to the process that determines wakefulness of the brain. It is a cooperation of several sections of the brain, of both emotions and cognition (Daniell, 2012). In humour studies, the concept of arousal is equally complex, to the point that it constitutes an umbrella-term, rather than a specific concept, part of the technical jargon of the discipline. Arousal-Safety (A-S) was originally associated with the emotional processing of humour. More recent studies have advanced different views on the concept. Hameed et al. (2018) conceive humour as the passage from something hazardous (e.g. anxiety or uncertainty) to something that becomes safe via the appreciation of humour (referred to as A-S in the paper). A different view of the arousal is proposed by Yoon (2018). They describe the arousal of the incongruity-resolution as the *surprise* given by an unexpected resolution of the incongruity. Their experiment proceeds by analysing the moderating effect of previously induced different arousals (from neutral, seen as inactivity, to astonishment) on the surprise generated by the resolution of the incongruity. The research aims to maximise the humorousness of ads according to the level of arousal before the exposure to the humorous advertising. In current research, participants were mostly capable of recognising the humorous intention of those stimuli that failed to be funny. This intention was detected despite the reasons for humour failure that could be classified as predominantly cognitive or emotional. Research on consumer behaviour overcomes the impasse considering the arousal as a level of stimulation, including both emotions and cognition (Sun, Tai and Tsai, 2010). Afterall, neurological stimulation of emotional arousal are consistent within the same individual, but not across different individuals (Sourina and Liu, 2011).

Coming from a Berlyne's view on the matter, the study of hedonic experiences (advertising is indeed a form of art) conceives arousal as both cognitive and emotional (measures as cheerfulness, and surprise), and proves that together with dominance (the persuasive intention in advertising), it leads to the feeling of pleasure of hedonic consumption (Miniero, Rurale and Addis, 2014). The study of humour intensity determined an inverted U-shape effect on memory of peripheral cues (Krishnan and Chakravarti, 2003). More generally, in psychology of aesthetics a similar shape was identified between complexity and liking, due to the interaction between cognitive effort and arousal (intended as level of interest).

Starting from this relationship, Althuizen (2021) identifies the pivotal role of interest overcoming the cognitive effort with little evidence of the inverted U-shape. This impasse can only be solved by accepting the dual nature of the arousal. Tables 4-4, 4-21, and 4-39 identify cognitive and emotional reasons for humour failure. The dualism between simplicity and complexity, support that the cognitive effort necessary to solve the humorous incongruity cannot be too low. The higher complexity, and the lack of knowledge necessary to solve the incongruity seem to complete the other end of the U-shaped cognitive effort. However, the results of SEM analysis show that in case of higher cognitive effort the humorousness increases for the humorous stimuli (β= 0.865***, model dir2.2, table 4-22, humorous dataset), and vice-versa (β= -0.135, model dir 2.2., table 4-22). This result adds to relevant literature by confirming that there is a U-shape in humour appreciation according to the cognitive effort, however, this U-shape ceases to exist for the emotional appreciation. Table 4-22 reports the related results for the emotional mechanism. Model dir2.1 for both humorous dataset (β= 1.028***), and the non-humorous one (β=1.010***), shows that the increase of emotional appreciation is constantly correlated to the humorous advertising liking. The arousal, intended as cognitive predisposition to the hermeneutic effort, is affected by the chances of solving the incongruence, and its communication of an alternative meaning. It is not related to the cognitive unexpectedness, since participants reported whether they proactively searched for the stimulus, or if they encountered the message accidentally. This dummy variable "type of research" in the multilevel analysis (tables 4-31 to 6-38) does not have a significant impact on the humorousness or the advertisement liking for both datasets. Rather, the emotional arousal is mainly focused on the congruence of the stimulus to the memory, the beliefs, and thoughts already part of the individuals' mental schemata. The emotional arousal acts then as a filter. Furthermore, the results of the effect of general sense of humour on both emotional mechanism (model dir4.2, table 4-23), and cognitive one (model 5.2, table 4-24), although better fitting the cognitive mechanism, confirms that sense of humour predisposes individuals to activate both. Emotional arousal is activated by the feelings of awe and affections (Nikolinakou and King, 2018). This explains the collinearity between emotional mechanism and humorous advertising liking since the

positive feelings of humour appreciation are congruent to sense of awe, and positive affection. The emotional mechanism is aroused by the congruence of the humorous element's content to the individual's mental schemata. In specific, it is the alternative meaning carried by the humorous intention to be congruent, rather than other cues of the communication, identified in the research with the reason of humorousness (and humorous intention for the non-humorous dataset) self-reported by participants.

The adoption of the dualistic cognitive/emotional frame allows the appreciation of humour from an holistic point of view. Model tot8 shows the efficacy of the I-R structure for the cognitive mechanism, supported by the analysis of figures of speech (alternative meaning), and by its correlation to the humorous advertising liking. The cognitive process of humour understanding comes before the emotional one, otherwise participants would not have recognised the humorous intention of the messages where humour had failed. The emotional arousal can only be explained, in the case of successful humour, with the congruity of the humorous cue of the message to the mental schemata of the participant. This latter aspect can be investigated by better analysing the behaviour of the emotional mechanism in the research.

The emotional mechanism was not defined in the model TOT8, because of its collinearity with the humorous advertising liking across both sets of data. The models applied to the emotional mechanism have identified an anomalous behaviour of the mechanism compared to what the general model had predicted. The correlation between the emotional mechanism and social sense of humour (model dir4.3, table 4-23), and the relationship between moods with it (models dir4.5, 4.6, 4.7, same table) confirm this anomaly, especially including moderation of mood on the effect social sense of humour has on the emotional mechanism (models mod22-23, 29, table 4-29). This points out that the correlation between social sense of humour and the emotional mechanism is moderated by being in a bad mood. In other words, we want other people to cheer us up when in a bad mood, or a negative emotional state. As already pointed out, this constitutes in an anomaly since being in a good mood should always increase the likelihood of humour appreciation. What really happens is that humour fails for emotional reasons.

5.4 - The role of daily moods in humour appreciation

Model TOT8 cannot include the effect of mood. However, models dir5.5 (table 4-24), and dir6.5 (table 4-25) confirm the positive correlation of good mood for both the cognitive and disparaging mechanism. Practically, being in a good mood predisposes individuals to accept the cognitive challenge of the humorous message, regardless of its success. This is because being in a bad mood has shown

correlation with being lost in thoughts (table 4-11). Conversely, when in a good mood participants show more cognitive engagement toward the message. A similar pattern between cognition and good mood was observed in consumer behaviour studies, where good mood affects relational cognitive style, favouring positive brand evaluation (Sar, Duff and Anghelcev, 2011). The analysis of the effect of mood on the emotional mechanism, on the other hand, helps to identify what exactly the emotional mechanism consists of.

Being in a good mood enhances the emotional mechanism for successful humour only. This anomaly of the emotional mechanism consists of a fundamental clue to uncover the role of emotions in the appreciation of humour. Models dir4.5, and dir4.6, table 4-23, show that when humour is successful, good mood is positively correlated to the emotional mechanism (and conversely for bad mood). However, when humour fails, being in a bad mood enhances the emotional appreciation. This result is in line with concept of congruence to the mental schemata, that in humour literature is expressed with the concept of safety. Santos, Gonçalves and Teles (2023) confirm that the self-congruity of the marketing communications' content support personal engagement in the message. Chien-Huang and Hung-Chou (2012) add that individuals in a sad mental state tend to incorporate wider variety-seeking among product choice.

The results of current research allow extending this effect to the content variety of the humorous message. When the humour targets a *safe* topic, good mood enhances the success of the ad. When in a bad mood participants develop a higher tolerance for *unsafe* topics, meaning that participants were more prone to find humorous messages that carried out *unsafe* content (incongruent to their mental schemata). This outcome is at the root of forms of humour such as dark humour (in English culture) used as a coping mechanism (Papousek *et al.*, 2017; Dueñas, Kirkness and Finn, 2020), and *Comico-Drammatico* (Italian humour that mixes comedy and tragedy together), where humour is settled within typical non-humorous contexts such as tragedy. In general, this uncovers the success of simple forms of humour, intended as less cognitively challenging, such as silly humour, or screwball comedy. The effects of mood on the success (or failure) of the humorous marketing communication is limited in this research because participants were uploading both non-humorous and humorous elements within the same day (and the same mood).

The *anomaly* of the emotional mechanism finally confirms the dualistic nature of the arousal. Being in a good mood enhances the cognitive arousal. While being in a bad mood, increases the tolerance for content that is off-limits, because bad mood increases the emotional mechanism even when referring to topics perceived as emotionally negative (e.g., offensiveness, sense of disgust). Other research has defined the emotional effects of humour as a sense of familiarity, warmth, cuteness, and/or

friendliness (Speck, 1987). Similarly, the emotional mechanism captures the goodness (or badness) of the humorous intention perceived by the participants. Figure 5-2 reports item 35 for the humorous dataset. Participant D33M1MEC describes its humorous element as “Is funny as the nikon catxh[sic] the person Behind the curtain”.[2]

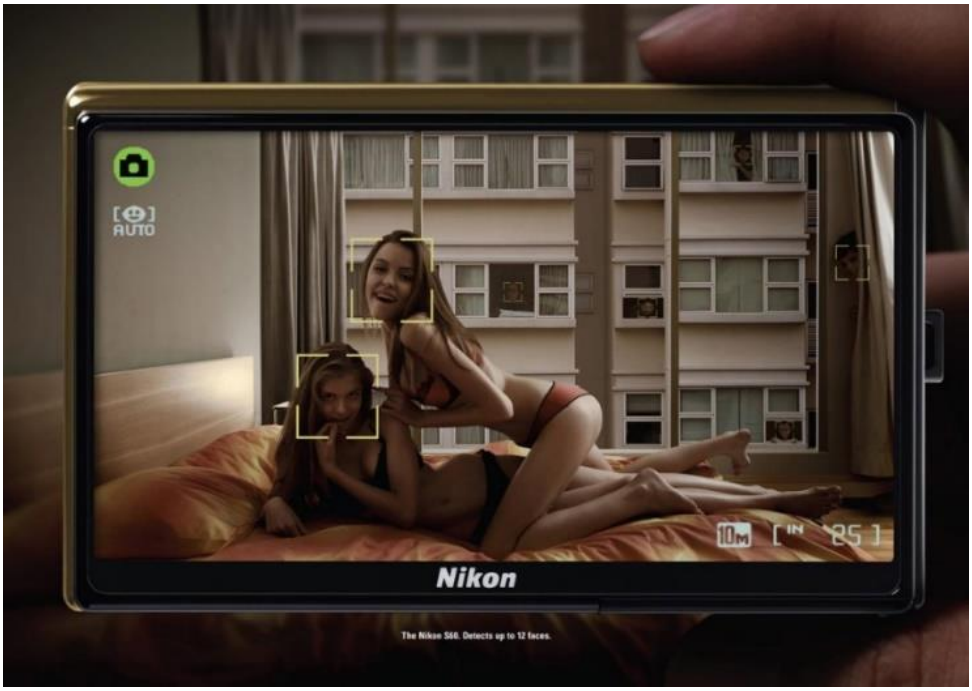

Figure 5-2 - Nikon™ S60 advertising available at the link Face-Detect-3-o-1024x724.jpg (1024×724) (evermind.it) accessed the 1st of February 2023.

The same stimulus was also uploaded in the non-humorous dataset as stimulus number 147 by participant M43F1LIT, who does not find it humorous because “it exploits the image of women. Boring and stereotypical”. The research has not identified gender differences in the way participants appreciate humour through the cognitive and emotional mechanism, however, gender differences can still be the object of the content of the humorous advertising, which was not quantified. Clearly M43F1LIT, a 43-year-old woman with a high level of education, rejects humorous content that is against her own values (in this case, the objectification of women). The topic of objectification of women in advertising has led to the concept of femvertising (Åkestam, Rosengren and Dahlen, 2017), women empowering advertising, as a reaction toward advertising objectifying the role of woman. The collection of messages of the current research proves that male participants also have negative reactions to stereotypes against women. From the non-humorous dataset, stimulus 30 uploaded by

[2] The text preserves the language used by the participants for whom English is not their first language.

D33M1MEC (figure 5-3) reports a billboard where the headline translates as “an iron, a pyjama, a Pandora’s bracelet. What do you think would make her happy?”.

Figure 5-3 - Pandora's advert. Image downloaded at https://www.agi.it/cronaca/pandora_cartierpolemiche_social-3196174/news/2017-12-04/, accessed in September 2021

Participant comments saying: “The message seems sexist”. Also, for stimulus 93 reported in figure 5-4 by participant J27M3GCS finds it offensive and identifies the humorous intention as “Implying women are for cleaning”. These are only two examples (there are more) from the research where men show a negative reaction toward anti-feminist gender stereotypes.

Figure 5-4 - Advertising downloaded at the link https://www.qualitylogoproducts.com/blog/wp-content/uploads/promo-u/12-offensive-advertisements/bad-ad-2.jpg?width=285, accessed in september 2021.

The failure of humour is only marginally dependant on the sense of humour, or mood. It is just affected by the congruence to the mental schemata. Participant M43F1LIT, who uploaded for the non-humorous message figure 5-2, in the same day, with same mood and sense of humour reports an ad which is worth analysing. Figure 5-5 shows the humorous stimulus number 145. The participant described the humorous intention of the ad with quite a long text. *The fact that advert mocks somehow the stereotypical perfume adverts (usually French or Italian), by using one model that is not sexy (it looks like she has just interrupted her cleaning duties and that she is carried away by the passion of her younger, hotter lover): this was the first, more obvious, immediate reason to smile…. Secondly, it is somehow like this advert gives hopes to "normal people" (therefore not super skinny, perfect models) … Somehow suggesting that we may come across a passionate love, even though we are not as perfect as TV/fashion models. This advert manages to be funny and, at the same time, addresses the misconception that we all should look like models*.

Figure 5-5 - Ambi pur. image downloaded at the website https://www.campaignlive.co.uk/article/ambi-pur-pour-lavatory-jaygrey-sydney/943448, accessed in September 2021.

The advertising clearly remarks the stereotype that women do the cleaning chores at home. This does not bother the participant, despite her sensitivity toward the objectivation of the women. The antifeminist cue, however, is not the central one. It is referenced and makes fun of it, nearly as a critique. The objectivation of the woman, in figure 5-5 is secondary to the real scope of the message, which is the contrast between the toilet cleaner, and the stereotypical advertising for *eau de* toilets (not *toilettes).* The increase of emotional arousal peaks with extreme feelings such as fear or joy (Hameed, Zainab and Shamim, 2018). The cognitive arousal increases with the element of *surprise* of the incongruity resolution (Yoon, 2018) while it is moderated by negative arousal (quietness versus alertness) towards the joke. This outcome reveals that the emotional component determining the success (or failure) of humour is indeed the congruence to the mental schemata, in humour literature close to the concept of safety so far utilised. In reference to figure 5-5, the vision of the woman as a cleaner is functional to the message of the ad: it is safe because it is not harmful to the mental schemata (the feminism, in the case) of the participant. Although coming from the emotional side of the theory of humour, the safety depends on topics and content individuals choose consciously, and both emotionally and cognitively, to laugh about. In this case, the emotional mechanism is the effect of a content evaluation we do of the joke. Like a filter, the emotional mechanism selects those jokes we do not find offensive, scary, disgusting, or in bad taste, according to our own mental schemata. It is clear now that the failure of humour can depend on cognitive reasons (simplicity and complexity, as in the U-shape structure identified by psychology of aesthetics), and emotional. In the latter case, however, it is not a failure of the humour (the cognitive mechanism is still positive for unsuccessful humour) but is consisting of an opposition to the content. This advances that, contrarily to what previous literature established (Dore, 2018), the failure of humour is not always harmful for the message's and product's/brand's liking. What can be harmful is the content the humour is built upon because, if contrary to the individual's ethics, the rejection of the content is automatically transferred to the sender (product/brand) of the message. The clarification of this latter point needs a thorough analysis of the failure of humour and its social-cognitive implications.

5.5 - Cases of unsuccessful humour and the role of social cognition

Social sense of humour is not correlated to humorous advertising liking since model mod1.2, table 4-22 does not converge for the humorous dataset, and has a very poor fit with the non-humorous one. Regarding the cognitive mechanism (mod4.3, table 4-23), and the disparaging one (mod5.3, table 4-24) it only converges for the non-humorous dataset, with an excellent fit, but a very poor standardised correlation coefficient (β= 0.058 for cognitive, and β=0.000 for the disparagement). Models dir4.3,

table 4-23, shows an excellent fit between social sense of humour and the emotional mechanism for both datasets, but poor correlation coefficients (β= 0.072 for the humorous dataset, and β= -0.005 for the non-humorous one). Social cognition is negatively correlated to the emotional dimension of failing humour, but positively to the cognitive one. Considering that participants recognised the humorous intention of the non-humorous stimuli, it follows that the failure of humour has social-cognitive implication. Similarly, He *et al.*, (2021) found that highly liked advertising activates the right inferior gyrus: the section of the brain mainly tied to emotional empathy. While participants of the current research seem to appreciate the humorous intention from a cognitive point of view, at the same time, this intention is counterproductive on the emotional appreciation of failing humour.

Social cognition does not determine success or failure of humour. When regressed on advertising liking, the mechanisms explains very little variance for both datasets. It follows that the reason for humour failure (or success) are mainly cognitive and emotional. Social cognition, however, helps to detect the humorous intention of humour we do not find humorous, that consists predominantly in a cognitive effort. Once humour fails, because it is not congruous to our own mental schemata, social cognition emphasises the negative emotional response. Nikolova (2023) observes that individuals cope with marketing-generated identity threats by focusing on other's failure. Similarly, the failure of humour becomes a threat to our own identity and the emotions are negatively associated to the social dimension of the sense of humour. In this sense, the failure of humour can become a threat for the sender of the humorous intention, that in most cases of marketing communications coincide with the product or brand advertised (Dore, 2018). This thesis advances research on the topic by adding that it is not the failure of humour itself, that determines such a negative outcome. Consumers are motivated to subvert, or sabotage, a brand, when their marketing message goes against their own idea of social justice (Middleton *et al.*, 2022). The problem, as Pedersen (2021) points out, is that marketing communications are losing the capacity to be empathic toward their own customers. With the objectification, the media proliferation, and the science, added up to the change of morals (e.g., picture 1-1 shows the arise of vegans), it follows that to be successful, humour must be empathic to the beliefs, morals, sense of justice, or, more precisely, mental schemata of the target-market. This thesis adds to relevant literature because it identifies several cases for which humour fails, and the consequential advertisement liking (table 4-21, and 4-39), proving that not all failing humour causes negative feelings toward the message and its sender.

5.5.1 - Cases of humour failure according to the self-reported classification

This research presents one of the first systematic collections of self-reported cases of humour failure. The analysis, or the reasons for the failure have brought two findings. First, not all failing humour has a negative impact on advertising liking. Second, participants develop negative feelings towards the ad (and consequentially towards the product/brand) when their content is unsafe (harmful). In these cases, having to invest cognitive resources to understand the humour enhances the negativity of feelings and liking. The threat, or harmfulness, is also perceived because the cognition needed is either too high, or too low (e.g., people can feel stupid when not understanding a joke).

The classification of failing humour presented in this thesis is just a preliminary investigation. While the limitation and further research needed on the matter will be discussed later, here it is important to observe some case of studies classified according to the research's frame.

Low negative impact on humorous advertising liking.

Although every response is biographical to some degree, the reason coded as *biographical* refers to the specific answer given by the participants, who identified a certain degree of familiarity to the content of the message. Research has widely proven that the memory of brands recalled by autobiographical memories is the most effective (Herz and Brunk, 2017), and it is long lasting in the memory (Thoma and Wechsler, 2021). The biographical reference of humour rather inverts this process, by linking the brand to autobiographical memories. Schembri, Merrilees and Kristiansen (2010) show that consumers can use brands indexically to construct their own image of the self. When brands tickle the autobiographical memory, they are passively linking themselves to the biography of consumers. They observe that cognitive load moderated the negative impact of the manipulative intention. Since humour has been proven to involve higher levels of cognition, it follows that biographical humour (humour referential to the biography of consumers), can be highly effective.

Given the low number of examples observed in the current research, it is impossible to draw conclusions, however, the advertising liking for the two autobiographical messages as recognised by the participants, is one of the highest when compared to the other cases of failing humour (see table 4-5). One of the two biographical stimuli uploaded by participant E24M3A&F is reported in figure 5-6.

Figure 5-6 - Stimulus 40 of the non-humorous dataset, downloaded at https://twitter.com/presidentmercer/status/1415624448548524032?s=21 in August 2021

They identify "The caption" as the humorous element, but she does not find it humorous since she has experienced the situation of customers rioting, as she herself reports "This is realistic after working in retail/food service sector". The post does not directly represent an advert. Participants were asked to upload any marketing message, even memes, competitors' attacks on the brand or product, etc. In this case the Twitter post refers to a generic body shop. While it is not affecting the business on a global scale, it can indeed affect the shop in a local environment, if the employee posting it has local individuals among their contacts. More importantly, this example clearly shows how *unsafe* the topic of customers' violence is for the participant. This *lack of safety* erodes the efficacy of the caption (*Describe a situation at work when you had to come together as a team*), which is the trigger for the resolution of the incongruous picture posted. This trigger, however, fails to succeed since the participant *chooses* not to laugh at the topic. Another example of low impact on humorous advertising liking is case 168. Participant N32F3ENG uploaded the video of a 1990s advert for Metz™ brand of schnapps, where the scary character of the Judderman becomes a puppeteer of the man drinking the

schnapps. The video is available at the link https://www.youtube.com/watch?v=1TUOPeNJCK8, accessed the 2nd of February 2023.

The humorous intention is identified as "It was an advert on tv in the 90s and it scared me as a kid… now it's your turn". The reason why she did not find it humorous says "other", but she does not specify which one. The grotesque dark humour of the ad was clearly not meant for a younger audience. The fact that the participant challenges the rules of the task to produce humour herself with "now it's your turn" is delightfully interesting. Current research has shown that humour is a meta-appeal. In the Judderman example, there is the coexistence of fear and humour. The ad shows how fear can impress brands in long term memory, and thus induce behaviour (Das *et al.*, 2014; Poels and Dewitte, 2019), especially when individuals feel vulnerable toward the element of fear (Vermeir, De Bock and Van Kenhove, 2017). Clearly the participant could not perceive the humorousness of the ad when they were a child, however, the vulnerability could be not the scariness of the Judderman (hopefully they did not drink alcohol as a child), but the incapability to decode the message and identify its humorous element, when the surrounding adults could. The high standard deviation of the fear group is because of stimulus 38 reported in figure 5-7 which shows cellophane's DuPoint™ printed ad from the 1950's.

Figure 5-7 – Image downaloaded at the website https://www.google.com/imgres?imgurl=https%3A%2F%2Fimmaginificio.com%2Fwp-content%2Fuploads%2F2020%2F08%2FDuPont.png&imgrefurl=https%3A%2F%2Fwww.immaginificio.com%2Fblog%2Fi-9-mostri-della-pubblicita%2F&tbnid=IL9w1pzmbnSj-M&vet=12ahUKEwjvj7nItPvxAhUuM accessed in September 2021

The ad is worrying participant D33M1MEC who recognises the humorous intention as “The idea to insert the baby into the cellophane”. In this case the fear causes a very low advertising liking since it inspires worrying. This result is in line with the fact that humour needs elements such as the sense of vulnerability, or the correlation to biographical elements to become effective.

Another case of failure of humour that does not dramatically affect the humorous advertising liking is the lack of knowledge. It refers to humour whose content is unfamiliar to the participant proposing it. Participant A19F3PSY uploads as non-humorous stimulus number 4 the Instagram advertising for Durex™ condoms reported in figure 5-8.

Figure 5-8 - Stimulus 4 for the non-humorous dataset. image downloaded in August 2021 at the link https://www.instagram.com/p/B27P5lLhlM7/?utm_medium=copy_link.

According to the participant “the character is supposed to be a bad person or an evil villain”. It is fictional character Joffrey Baratheon from the series *Game of Thrones*, and he is indeed a violent character. Although she fully understands the humour, it is unsuccessful due to their lack of knowledge. The average humorous advertising liking for these types of messages is 4 (neither agree nor disagree). The cognitive mechanism for these ads is very low (table 4-21). This advances that the lack of cognitive resources fails the success of the message, while emotions, and ad-liking remain close to neutral responses.

High negative impact on humorous advertising liking

The bottom part of table 4-21 shows messages where humour fails with a humorous advertising liking score below the threshold of 4 (neutrality of liking). In bold in the table, disgust and offensiveness causes the failure of humour for emotional reasons, because the cognitive mechanism is highly affected. The difficulty of the message, instead, affects the cognition, since it represents the slow timing, or high sophistication, of the humorous message. This outcome is highly relevant for literature since it shows the reasons for humour failure that most negatively affect the humorous advertising liking. Consequently, practitioners should avoid such cases. On the other hand, other reasons for humour failure record values close to the threshold of 4. The simplicity of the message, and worn-out humour record values of humorous advertising liking that are closer to the threshold of 4.

One of the highest responses of the reason why participants did not find the message humorous was that the humour had somehow expired (N=33). There are several reasons why humour ceases to be such. One reason is over-exposure to the message (e.g., stimulus 116 for the non-humorous dataset consists in the Haribo™ 2014 advert, set during a generic office meeting, where participants speak with children's voices while eating the sweets). Some humour is built on a story perceived as too long that reduces the element of surprise at the end in further exposures (e.g., case 80 reports the Toyota™ Highlander Superbowl commercial for 2020, where a mother picks up several individuals in danger from different contexts referred to in sci-fi movies). One of the most interesting cases observed by current research, since the survey was completed at the end of the COVID-19 lockdown in the UK, is the change of context. Participant E24FHEA uploaded the Instagram ad in picture 5-9.

Figure 5-9 - Stimulus 51 from the non-humorous dataset, downloaded at the link https://www.instagram.com/p/CRO6p1LnChF/?utm_medium=copy_link in August 2021.

They identify the humorous element as “The reference to being able to snog people when lockdown is over”. But, since the lockdown rules were already relaxed in the UK at the time of data collection, they no longer find it funny. Clearly the circumstances for the ad’s effectiveness are gone, however, in this case, the failure is not caused by a feeling of unsafety. Rather, the incongruity has ceased to exist (people were free to *snog* each other again). Since sponsorships and event-related marketing are dependent on the agreement between sponsor and event (Boeuf, Carrillat and D’Astous, 2018), it follows that negative events, such as COVID-19, are very likely to decay even while they are coming to an end (like at the time of data collection). Similarly, the ad reported in figure 5-4 is also correlated to COVID-19, however, the connection between brand and the event (the braces covered by the facemask) makes it a more successful message. Participant N39F2LIN, who considers the message too simple, points out that simplicity and silliness are two different things. They recognise the humorous intention as “I think it’s supposed to be funny because you don’t expect it. But although I feel the message comes across, it’s not that funny”, but she does not find it humorous since it is “too simple ('too silly' is not a bad thing in my opinion. but this isn't silly)” clearly stating that she would have appreciated silly humour but not humour that is too simple. Further research intending to implement the model of the reasons for humour failure should take this point into account.

The three real threats of humorous advertising liking consist of those cases where the humorous advertising liking is particularly low. The only cognitive reason recording a high negative impact on adverting liking was the self-reported choice *It is difficult to understand/ took too long to understand.* In some advertising based on video format the length erodes the humour success by affecting the *surprise* of the I-R. Participant E24FHEA uploads as stimulus 57 a video in which the actor Kevin Bacon directs a remote-controlled robot that is shaving a man on the top of an isolated mountain. Such a precision job is possible thanks to the efficacy of an EE™ internet connection (video available at the link https://www.youtube.com/watch?v=gWiV3DF5JkU, accessed in August 2022). The participant themselves describe the humorous element as “having a shave by the robot via the EE network” describing the 2-minute video in only 10 words. The timing of this I-R was too long.

Some other advertisings just try too hard to be different, or complex, losing the humour component. In case 70 for the non-humorous dataset, the background noises make the comprehension of the ad too complex. Participant F46M1CHE does not even realise that Naptime is a fictional brand of chloroform, allegedly used to put noisy children to sleep, created by comedian Chris Capel (video downloaded at the link https://www.youtube.com/watch?v=AF_nfazQaek&t=24s accessed in September 2021), since they identify the humorous intention as “Not sure is all a noise”. The noises clearly distract the participant to even engage in resolving the incongruity. These examples support linguistic studies of humour where high levels of sophistication avoid the resolution of the incongruity.

However, the length is not just associated to the sophistication, but also to the feeling of boredom. This latter element should also be added to eventual further studies willing to identify the reasons for humour failure.

Of the two emotional reasons for which humour failed with very low levels of humorous advertising liking, disgust is one of them. Participant A19F3PSY uploaded for the humorous dataset stimulus 1 figure 5-10.

Figure 5-10 - Stimulus 1 for the humorous dataset, downloaded at the link https://www.instagram.com/p/CQ3ZLiijQev/?utm_medium=copy_link in August 2021

They identify as humorous "The context (EURO finals)". The successful Instagram™ meme recalls a post from brand Heinz™, while the product is the beans. They are arranged as the players in a strategic football play. Interestingly, the same participant chooses as non-humorous another Instagram™ post for the same brand, but the product is tomato ketchup Reported in figure 5-11.

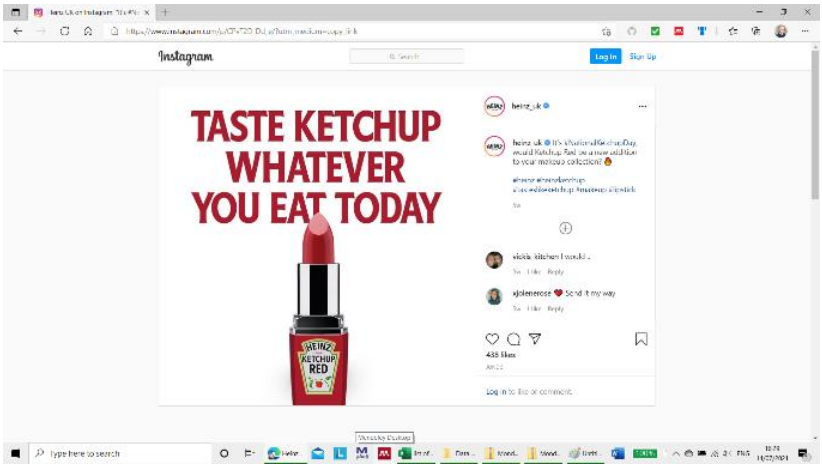

Figure 5-11 - Stimulus 1 for the non-humorous dataset. image downloaded at https://www.instagram.com/p/CPvT2D-Dd_e/?utm_medium=copy_link in August 2021.

They identify “An unconventional item as makeup” as the humorous intention. However, the humour fails because they plainly say it “Disgusted me”. It is interesting how they choose the same brand as their first stimulus for each set of data. The repulsion clearly does not come from the picture itself that shows a red lipstick, but from the thought of wearing ketchup-flavoured lipstick. While the ad was probably conceived to appeal to a market who find ketchup delicious, the imagery it evokes is covering the lips with ketchup, which becomes *unsafe* for the participant because it is *disgusting*. The use of the frame disgust is not new in humour studies. The benign violation theory already identified disgust as one of the main negative emotions that impede humour (McGraw and Warren, 2010).

Annoyance can be correlated to disgust, and current research has preferred, given the fewer cases, to keep the two elements together. For example, stimulus 180 (link https://youtu.be/6_WAmt3cMdk accessed in August 2021) reports an HSBC™ ad where a British man eats an eel in a business dinner setting in Asia. He is invited to eat more of it as soon as he finishes his dish. Participant P58M1BAN comments that the humorous element is “The circle of eating / empty plate”, while the reason why he does not find the message humorous is that “It’s the wrong countries - there are countries which have those habits. But it isn’t England and China so it’s incorrect and that irritates me”. This outcome consists of one of the main limitations of the current research, since a better coding of negative emotions is needed to frame the failure of humour. Further research should consider the distinction between simple and silly, and disgust and irritation.

Over 45% of the unsuccessful humour (N=93) is considered somehow offensive by participants. Body shaming, misogyny, explicit sexual content, are among the most common causes of the perception of offensiveness. The case already seen in figure 1-1 is one of the most controversial. For case 11, A19F3PSY recognises “Fat shaming?” as the humorous intention, that constitutes for them both the humorous intention and the reason for its failure. The stimulus is the same for case 96 where participant J27M3GCS identifies “Comparing large people to whales” as the humorous intention. The case also represents a good example of disparaging humour toward larger women, however, in informal follow-up interviews with four vegan subjects who were not overweight, the subjects indeed found the message humorous. When faced with the body shaming issue, they replied that it is acceptable because of the brand’s cause (saving the animals).

The analysis of the failure of humour concludes here with an important outcome. When safety is threatened, like in the case of the body shaming of picture 1-1, some individuals are willing to explore unsafe or hazardous topics if this benefits a bigger picture. In these cases, humorous advertising can be controversial. Practitioners should decide whether the risks from bad reviews and negative feelings

developed by other segments of marketing are a price worth paying to reach the target-market. The analysis of the response of some participants (see the case of table 4-39) further supports that the individual's goals determine the congruity of the humorous cue with their mental schemata. This latter outcome of the research also justifies why we are able to laugh at disparaging humour.

5.6 - Disparaging mechanism between emotion and cognition

The source and the context of humour can affect the threshold of *safety*. For example, a comedian's show could have several moments where the threshold is lowered to allow the appreciation of the joke. In case of celebrity endorsement, participant V41M1CAT reports humorous case 221 consisting of Amazon Alexa's advertising (available at the link https://www.youtube.com/watch?v=Kg-_zq1aIow, accessed the 2nd of February 2023) where actor Michael B. Jordan impersonates the body of Amazon's Alexa. The participant finds humorous the "Sounds, use of words and visual message", which also points out that the complexity of the message, with humour embedded in several channels simultaneously (such as the music, the jealous husband, the cheap erotic movie references etc.), all combine in lowering the threshold of *safety*, resulting in successful humour, however, further research is needed on this topic.

The context can affect the appreciation of humour by relating it to determined circumstance. In a satirical context, for example, there is larger acceptance of jokes we could find offensive or silly. Case 95 from the humorous dataset shows how competitors' satire can enhance the threshold of humour. Participant J27M3GCS reports the case of Burger King™ against McDonald's™ (picture 5-12).

Figure 5-12 - Case 95 from the humorous dataset. image downloaded from link https://sbly-web-prod-shareably.netdna-ssl.com/wp-content/uploads/2017/11/17020237/hilarious_ad_campaigns_featured.jpg in August 2021.

They find it humorous because of “The joke about their competitors”. Despite the simplicity of the image’s graphics and the fact that the image consists of not much more than a script, it results in humour contextualised within the competition between the two giants of catering industry. The satirical context enhances the cognitive arousal, and lowers the *safety*, the resistance to the joke, the script could have. Similarly, construal level theory confirms the overlapping of different level of abstraction during the process of evaluation, prediction, and behaviour (Trope and Liberman, 2010; Adler and Sarstedt, 2021). The disparaging, similar to negatively related messages, are accepted when secondary to the individual’s goals, or in this case, simply far from them. This latter point helps to understand that feeling less disparaging, do not mean that individuals translate it into a benign view of the message. Rather, the disparagement becomes secondary (but not necessarily subordinated) to their own goals.

The use of disparaging humour is pivotal in forms of competition between brands. Humphreys *et al.*, (2010) describe that in case of ambushing marketing, which is when a brand refers to an event where sponsorship rights belong to another brand, the offended brand can take legal actions. Consumers generally develop negative feelings for brands engaging in legal processes against ambushers, but they react much better to forms of counter-ambushing messages using disparaging humour toward the offender brand (Koenigstorfer and Uhrich, 2017). Table 4-14 shows that the disparaging mechanism’s scale was less valid when measuring successful humorous messages. This outcome is in line with the concept of congruity to the mental schemata. Participants overcome the sense of disparagement to accept a different point of view carried by the alternative meaning. In consumer behaviour, Moisieiev, Dimitriu and Jain (2020) observe that consumers accept the feeling of pleasure from others’ misfortune, schadenfreude, like in the case of other people’s bad purchases, to feel more satisfied with their own choice. In this context we accept disparagement if it agrees with our own goals. Even in self-depreciating cases, humour becomes a way to assert that we are more than the laughing matter.

Results show that the disparaging mechanism behaves similarly to the cognitive one. It is correlated to AL in both sets of data, as is the cognitive mechanism. The regression coefficient is of opposed sign, meaning that while the increase of disparagement increases the humorousness in the humorous data, it has a negative effect on AL when the humour is unsuccessful. However, the impact of MECD on AL is much smaller when compared to the cognitive mechanism. This means that the disparagement is only appreciated by certain participants, as the multilevel analysis shows (see tables 4-31 to 4-39, and table 5-1). Older participants seemed to appreciate disparaging humour more than younger. While the panel is too small to conclude on a generational nature of disparaging appreciations (see limitation), it is possible that more mature participants are open to lowering their sense of *safety* to see the big picture (in this case, the success of humour). However, when compared to the non-humorous dataset,

this difference ceases to exist, meaning that the disparagement, when unsafe, is not moderated by the age of the participants. Results point out that the condition for the disparagement success is within the agreement to the sense of individual's social justice (Melnyk *et al.*, 2011; Middleton *et al.*, 2022). This also explains why there is no correlation between pensiveness, which is perceived as bad mood, and humour. We choose to be serious because we do not find it *safe* (for example, it goes against our beliefs) to laugh about certain disparaging topics. The vegan ad about the whales (figure 1-1) carries *unsafe* content for people with bad weight management, and/or morally against body shaming (for the two participants uploading it). In synthesis, the lesser validity of the disparagement scale applied to successful humour tells that the appreciation is mitigated by other elements of the message. While disparaging humour acts similar to the cognitive one for successful humour, the emotional mechanism acts as a filter for the cognitive understanding of the joke. The determinants for the success of disparaging humour should be found within the individual differences, the context, the source and, more importantly, within the *safety* concerning the target of the disparagement. To sum up, we appreciate disparagement, as long as we do not perceive the joke as harmful, as incongruous to our own mental schemata, and beyond the safety of the disparaged. Thus, the mocking of the power ceases during a mutiny (Speier, 1998) because the content of the disparagement has become harmful. The leader has crossed the line of the *safety* of the mutineers; thus, the humour ends, leaving space to the subversive action.

5.7 - Conclusions: toward a definition of humour

Salvatore Attardo (2005) associates humour with metaphor. The coding and the multilevel analysis shows that there is little to no significant correlation between figures of speech and advertisement liking, and mechanisms of humour. The interesting result, instead, is that every humorous message could be identified (besides the subjectivity of the coding) with at least one figure of speech. Figures of speech induce mental states through a metaphorical representation of reality (Barnden *et al.*, 1994). The meaning of a figure of speech deviates from the ordinary effect. In this, humour follows the same communicative processes (Attardo, 2005, 2015; Piata, 2016). However, the figures of speech theory misses the element of *safety* analysed above. In synthesis, the metaphor theory is (excuse the world play) a perfect *metaphor* to explain the incongruity-resolution process, while the *safety*, intended as agreement to the subject's mental schemata, determines the humorousness (or a strong emotional response could represent, for example, the perception of beauty in the case of figures of speech perception). *Any resolution of the incongruity that is in agreement with our schemata mental leads us to a result humoristic.* Imagine an academic reading a paper written by a non-native English researcher.

They find a sentence hard to understand because it is syntactically incorrect. Thus, they reread it several times. They eventually crack the meaning. They smile.

Humour is a mental state triggered by the sudden (timing, and sophistication) understanding of an alternative meaning (I-R) that is congruous with our mental schemata (Safety). The speed of the understanding (*timing*) depends on the cognitive processing and the knowledge necessary to crack the alternative meaning. The awakening of the alertness necessary to understand the meaning (cognitive and emotional arousal) is then calmed down by the dopamine production described by DeYoung (2013), which also fixes the alternative meaning in the memory. The arousal is both cognitive, and emotional, but is activated by incongruity with the cognitive dimension, and congruity to the emotional one. Once we understand the alternative meaning it is evaluated according to its congruence to our own mental schemata (beliefs, knowledge, ethics, etc). This process filters the meanings allowing humour success only when its content is congruent, acceptable, and not harmful to our emotional, and cognitive activity. In the case of contrariety to the individual's mental schemata, the humorousness can fail (the unsafe meaning blocks the release of dopamine). The advertising liking is heavily compromised only when extreme levels of cognition are involved in the understanding, or negative feelings (such as disgust or offensiveness) are involved in accepting (rejecting) the alternative meaning. This explains why science has mostly observed and studied the cognitive and emotive aspects of humour separately. The parameters to evaluate the timing of the cognitive mechanism, and the agreement to the mental schemata, appear to be strictly individual. Even those stimuli where the humorous element consists of a unique alternative meaning were perceived differently by different individuals. The multilevel analysis has confirmed ID as the only variable consistently affecting AL in any multilevel analysis considered by the current research.

Table 5-1 below reports how the Cinesite ad (a company of cinematographic special effects) is perceived differently by each participant. While the ad is always the same, it is repeated by different participants, each considering it humorous. This highly successful message, however, results as humorous for different reasons.

Table 5-1– Comparison of Cinesite's advertising. Data from the humorous dataset

Stimulus	Brand	Product	Humorous item	Participant	Self-reported humorous element
3	Cinesite	Cinema special effects company	10	A39M1E&T	That he was a loppo at thend.after all that..
			71	G46M1A&D	the thought of what happens to a fart on the moon
			110	K34M1NCU	The fart at the end
			197	S36F3ART	The monster/Alien was killing all the spacemen and one got away but then farted

Table 5-1 – Extract from appendix 5. The video for Haynes beans is available at the address https://www.youtube.com/watch?v=eZgD89VYkVc accessed in August 2021.

The ad describes some astronauts on the moon suddenly attacked by a giant lunar monster. They all perish under the attack except for one, who hides behind a rock. The monster is looking for him and has nearly given up the search when the astronaut lets go of some flatulence. The headlines says: *Haynes beans, not for astronauts*. Clearly the humorous element is identified plainly by participant K34M1NCU, who finds humorous the corporal noise, in line with dark humour appreciation. Participant G46M1A&D contextualises the flatulence within the moon landing, appreciating the exaggeration. Participant S36F3ART identifies as humorous the fact that the astronaut, after struggling to safety, betrays himself with the flatulence, denoting a high level of emotional involvement in the perception of the video. Finally, participant A39M1E&T, instead, catches the disparaging meaning since the astronaut was *silly* by letting go of the flatulence. The word he uses for *silly* is *loppo.* In a follow-up interview he explained that a loppo was an imaginary creature his daughter created when she was a toddler. In the sociolect of his own family, a loppo is someone very stupid or silly since it does not even have a specific appearance. The comparison of these reactions shows that participants rarely laugh for the same reason, even when in front of the same stimulus. This allows the rejection of any previous research attempting to classify *a priori* humorous stimuli in any way. Rather, humour appreciation can be explained similarly to sociolinguistic language stratification, since the language, and the communication in general, affects the formation of individuals' mental schemata:

- Idiolectal humour, referring to an individual's specific appreciation of humour.
- Sociolectal humour, referring to a small group's specific sharing of meaning and humour.
- Dialectal humour, meaning a sense of humour shared by a community.
- Linguistic (or national) humour, depending on cultural acceptance of determined cultural and communicative frames.

This classification aims to help creatives, which should share the language (and the humour) in use by the target market, to hit the right symbols and meanings that are *safe*.

The results reported so far encourage the use of humour in advertising, especially considering that some forms of failed humour do not negatively affect the advertisement liking. The dynamic of humour understanding so far described points out that the message should be based on knowledge possessed and shared by the target market. Biographical knowledge, such as everyday life situations, appear to be more successful, however, the knowledge should not be too obvious. To avoid the *vampire effect,* it should relate the humour to the product/brand, especially when shown as the resolution (the alternative meaning) of the incongruity. The theory of Hornik et al. who propose humour as a meta-appeal is founded on the duplicity of humour as both cognitive and emotional mental state, and its

correlation to the figures of speech. Even sexual appeals, for example, when not based on gender stereotypes or potentially offensive content, can be effective if embedded in humorous content.

Chapter 6 - Final thoughts: humour from creativity to strategy

6.1 - Humour as a marketing communications' appeal strategy

The association between humour and intelligence is widely supported by science (Greengross and Miller, 2011; Greengross, Martin and Miller, 2012). Kellner and Benedek (2017) further prove that creativity, divergent thinking, and crystallised intelligence all equally predict higher levels of creation of humorous content. The reading of the CLT has shown that the distance of construal level depends on the emotional and cognitive distance between the subject and their thoughts (Trope and Liberman, 2010; Adler and Sarstedt, 2021) through the relevance of the matter. In this context, the cognitive creativity comes by the shifts of the level of construal distance an individual applies to a particular thought (Trope and Liberman, 2010; Soderberg *et al.*, 2015).

This research has proven that the creation of successful humour, from a cognitive point of view, consist of the creation of a figure of speech that carries an alternative meaning somewhat unthought by the receiver of the humorous message. The capability of generating and exploring new ideas is the building block of creative thinking. It is the divergent thinking that encompasses idea fluency, flexibility, originality, and elaboration (Titus, 2018). A figure of speech is the association between two (or more) seemingly incompatible concepts (unthought by the receiver). The effect of creativity in advertising, through the creation of figures of speech is moderated by cognitive flexibility (Septianto, Pontes and Tjiptono, 2022) not only in its coding, but also, in the process of understanding. This association of two or more concepts has led recent research in advertising to underline the connection between two-sided appeals and humour (Eisend, 2022). It is now clear how the humorous figure of speech theory is interconnected to the interpretation process.

Since its correlation to creativity, humour is the best appeal at grabbing attention and communicating key benefit claims (Althuizen, 2017). The impasse between different levels of distance in construal level, however, can lead humour to touch topics not congruent to the mental schemata of the target-market. The reasons for the failure of humour lay in between the cognitive incongruence communicated by humorous figures of speech, and the congruence to the mental schemata of the market exposed to the message, widely supported by the results of this thesis.

So far literature has investigated the necessity and the benefits of using humour. It comes as a necessity, for example, when it is the only effective appeal to answer attacks to the brand, like in the case of counter-ambushing marketing (Humphreys *et al.*, 2010; Koenigstorfer and Uhrich, 2017). Social media enhances this necessity. The over proliferation of contents increases the use of highly attention-grabbing appeals such as humour. The innate interactivity of social media also allows consumers to

contribute, sometimes negatively, to the brand storytelling. The use of hashtags for successful humorous messages allows sharing of those contents individuals feel as enhancing their own self (Stathopoulou *et al.*, 2017). In on-line brand communities, humour has a dualistic usefulness. While misplaced humour is symptomatic of indifference to the community (Rossolatos, 2019), humour is used effectively to moderate aggressive comments, however, the use of humour in these contexts is not an innate reaction. Rather, it is a tool adopted after being tested and refined through the social interaction of the community (Husemann, Ladstaetter and Luedicke, 2015). The necessary social agreement humour needs for its success, leads to the conclusion that humour should be a well refined strategy of communication, rather than an accidental effect of creatives.

This research is the first systematic analysis of the reasons why humour fails. Overall, cognitive reasons were associated to the timing and the sophistication of the incongruity-resolution. Given the innate two-sidedness of figures of speech, the use of rhetoric to communicate an alternative meaning is the key to formulate successful humour. In this sense, humour is the effect of creativity, but this association alone is not enough. Until creatives see humour as a performance of creativity alone, humorous appeals will continue to risk failure, causing ineffective advertising or, more dangerously, negative feelings, memory, and behaviours. Since effective humour is congruous to the mental schemata of the target-market, humour must be the result of a well thought out strategy. The benefits of this are evident. On a micro-level, the strategy of humour translates to avoiding single acts of creativity. The risk is that the formulation, happening at different levels of construal distance, lead to cues that stimulate disgust or outrage. Cognitive creativity should be framed within the boundaries of the mental schemata of the target market. Unless following a precise strategy aiming to create contrast between on-line brand communities, and dissent (someone could sustain that bad advertising is still advertising), humour generation should avoid topics in contrast to the common sense of decency, ethics, morals, etc. not only shared by the target-market, but by every person that will come across the message.

There is a second alternative to such a precise planning. As a cognitive effort, humour represents the cognitive load that increases the perception of those social norms that reflect what people do (descriptive norms), but lowers people's perception of what behaviours are approved or disapproved by others (injunctive norms) (Melnyk *et al.*, 2011). Similarly, joy and amusement, positive feelings associated to humour, enhance flexible thinking (Nikolinakou and King, 2018), that is the cognitive effort common to both decode, and understand, humour. Humour adopted as a constant strategy of communication creates the expectancy, but also the acceptancy, of humorous messages, both at a cognitive and emotional level. Even when in a series of jokes, for example, on social media memes, if the humour is too simple, or already known, it does not negatively affect the message liking enough

to compromise the brand. The risks of humour failure follow the same path of unplanned (or badly planned) integrated communication. To date, there is not a commonly accepted definition of corporate identity among academics (Melewar, 2003), nor do practitioners agree on the construct (Melewar and Karaosmanoglu, 2006). Following the taxonomy of corporate identity (Melewar and Jenkins, 2002; Melewar, 2003; Melewar, Karaosmanoglu and Paterson, 2005), humour as a creative impulse is held at the level of controlled corporate communication. The benefits of an integrated corporate identity increase customer loyalty among consumers and employees (Melewar *et al.*, 2017).

The adoption of humour as a corporate strategy can enhance consensus in the brand community, and the sharing of its contents. More importantly, it becomes an expected reaction in case the brand is under attack, like in counter ambushing marketing, and in case of consumers attacking the brand. In synthesis, continuous humour shields the brand from external attacks of other brands and consumers, and, at the same time, lowers the resistance caused by incongruity to the mental schemata of injunctive norms. It could also offer a frame to direct uncontrolled communications. As a marketing communication strategy, humour remains a not completely predictable phenomenon. It is, in fact, also the effect of idiolectal inferences of an individual. For this reason, humour as a strategy of communication can at least let the brand be prepared in case of unpredicted humour. The only case in this research of a humorous message which did not have an intentional humour is case 50. Participant E24FHEA was looking for information about the Italian football team during the EURO 2020 event. A pop-up banner advertised GHD™ hair straightener. The participant found the association between a predominantly manly topic with a predominantly female product humorous. This performance of the artificial intelligence (AI) that connects advertising to the consumer, rather than the event, proves that there is space for unexpected humour. The necessity of AI systems to gather human traits and enhance their own effectiveness (Borau *et al.*, 2021), points out that humour can already be generated by some elements of advertising automation. Specifically, it could overcome the gap that AI has in elaborating creative contents, since to date the field of investigation lacks of guidelines and theories (Ameen *et al.*, 2022).

6.2 - Managerial implications

There are three main categories of practitioners to whom this research can address: advertising creatives, brand designer and managers, and strategists of communication at a corporate level.

Regarding the process of advertising design, the research has confirmed that humour is a meta-appeal, meaning that thanks to its cognitive and emotional nature, it can be associated with any other advertising appeals. Its effect on memory, investigated in emotional analyses of humour (Strick *et al.*,

2013), has already been ascertained. However, implications of the cognitive effect on memory were less clear. Humour can affect both perception and memory. Creatives should consider the simultaneous use of more appeals to increase persuasiveness. Humour is naturally linked to metaphors and offers the chance to include more appeals.

The research has observed two different typologies of relatedness: to the product/brand, and to events (e.g. COVID-19, Euro 2020, Tokio Olympic games). Generally, relatedness does not significantly affect the success of the humour not the advertising liking. However, unrelated advertising has a higher likelihood to succeed. This happens because the relatedness offers a context to interpret the humorous metaphor's alternative meaning. The results of current research suggest that relatedness helps audiences to make sense of the messages, and it should be a good practice of any humorous advertising. The research also shows that, because of this role of context making, the product/brand do not necessarily need to be a cue central to the humorous message but can be peripherical to the central cue but must give a fundamental cue to direct the understanding of the alternative meaning. In this way, relatedness also becomes a mean to reduce the chances humour must produce undesirable meanings that could damage the success of the message.

Advertising liking is negatively affected only when the *unsafety* of the content is high (e.g., disgust, or offensiveness for the emotional mechanism; too difficult/too simple for the cognitive one). Not all the unsuccessful humorous marketing messages are harmful to the advertising liking and the brand. Biographical references, fear, expired humour, all have a neutral or positive effect on the advertisement liking. This suggests that the formulation of a humorous marketing communication should consider all these aspects of the target market: knowing what is *safe* for it, and the level of cognition it disposes to understand the humour. This is exceptionally pivotal for advertising, given that the media, the format, and the context of exposure all have a pivotal influence on the perception of the ad.

The quantification of products and brands seen in the descriptive statistic section also confirms that, although general consumption products are more likely to use humorous appeals, there is indeed the tendency in recent years to apply humorous content to high-involvement products. This falsifies the belief that humour is effective only for low-involvement products and brands. It is recommendable that humour is used also for advertising high-intensity product, especially as a tool to affect the memory of the product/brand. High intensity products, in fact, are often advertised to the public with the aim to create the memory recalled by consumers when the need arises. The current research has shown that memory for humorous messages can span over 4 decades in consumers.

The theory of humour presented in this research defines the role of emotions and cognition in the appreciation of humorous messages. Regarding the emotional appreciation, this is unlocked when the

content of the message is felt safe. This points out that simple humour is less likely to be ambivalent and misinterpreted by the target market. Although it is impossible to completely predict, when the humour targets a topic safe for the individual perceiving the message, it is more likely to succeed. In relation to the cognitive appreciation of humour, evidence support that the cognition applied to the understanding of the alternative meaning should be adequate to the cognition load of the target market. Too low, or too high could jeopardise humour's success.

In relation to the humorous advertising media placing, the cognitive load that allows the understanding of the joke should match the cognitive load of the media content the ad is perceived in. This allows humorous advertising to be less disruptive and better accepted by consumers. In this sense, humour becomes a tool that involve the cognition of consumers and directs it toward the product/brand, contrarily to previous conception where humour is considering just an entertainment tool, it creates cognitive engagement. Practitioners should carefully consider the media mix and its accordance to the content of the humorous message.

Regarding practitioners of branding, this research has observed some interesting points that can become useful to the design and the development of the brand. Only few and recent brand have started including humour in the brand elements (e.g., logo, name, font, jingle, et c.). Firstly, this increases the attention toward the brand elements, especially for those brands advertised in overcrowded media mix such as social media. In second instance, the use of humour in the brand elements, allow the construction of more effective humorous campaigns. This inclusion of humorous elements in the brand mix gives further context to the humorous message and further reduces the likelihood of humour failure. On the other hand, is creates humour expectations that can be detrimental to the brand if not met.

The most positive effect of humour at brand level is the impression of humorous brands in consumers' memory. The use of sitcom-style of humour facilitates the continuous production of content related to the brand's philosophy. It also enables the brand's communications to be tailored to current affairs.

Humour is recommended as a tool to respond to brand attacks. Similarly to the counter ambushing strategy, any attack to the brand can be humorous, always avoiding outrage, disgust, annoyance, and complexity of the answer. The effect of a humorous answer is better accepted by the public, and enhance not only the memory, but also builds positive feelings toward the brand.

Regarding practitioners of strategic marketing communications, humour should not be an accidental effect of creativity, but rather a thorough, planned process aiming to achieve the brand's goals through a deep and profound knowledge of the target-market. Within the boundaries of a corporation, companies should develop clear policies disciplining the humour use and acceptance, especially between colleagues. The use of specifying wording to stop unwanted humour, for example, can limit cases of work bullying and its consequences for the image of the company. The inclusion of humorous elements, practice, and policies within the strategy of the company also create a freer environment for the employees' socialisation.

Strategic humour also allows a quicker response in case of attacks (humorous or not) to the company, for example coming for uncontrolled communications.

The prediction, the inclusion, and the management of humour within a company also allow to create an environment that includes fun and amusement, increasing the value and the interest of being part of the company.

Beyond business studies, the implications of the current research could also have an impact on other disciplines. In psychology, humour could constitute an effective instrument capable of identifying traumas by determining what an individual considers *safe/unsafe* by quantifying their ability to laugh or not about certain matters. This typology of diagnosis tool would result more effective, and less invasive of some current tools currently used in psychology.

Since its correlation with creativity and intelligence, humour could become one of the benchmarks to quantify these constructs. The impossibility of matching individuals' capability of I-R and effective IQ measurement considering current instruments is a gap only further research in the field could overcome.

6.3 - Limitations and further research

This research represents a unique contribution to the field since it has aimed to describe humour from both the cognitive and emotional dimensions. The approach has led to a better understanding of the dynamics of humour appreciation. It has pioneered the investigation of why humour fails, showing that not all the failed humour negatively affects the advertising liking. The concerns about brand tarnishment in these cases that previous literature has advanced are more limited than expected, confirming general literature on brand tarnishment (Boshoff, 2016). Humour as a marketing communications appeal has more potential benefits than previously thought. Guidelines have been

given on how to avoid the failure of humour or limit it to those cases less harmful to the advertising liking. The role of emotion and cognition in humour appreciation has finally led to a general theory of humour.

The first and most important limitation of the research depends on the sizes of the panel analysed. The small panel has not allowed the identification in full of the contribution in the multilevel analysis of every variable. A study including more participants, and more observations for each participant, could allow better and more defined outcomes of research.

The method of the diary study has allowed several observations for each participant, however, this has limited the number of observations a structural equation modelling should have. Despite this limit, the models fitting the data have shown an excellent correspondence to the parameters' threshold Hu and Bentler (1999) indicate for a good fit. The model (TOT8) could be improved with research of a similar nature including a larger number of participants and observations, to identify the contribution the emotional and the cognitive mechanisms make together on advertising liking. Further research should include a larger number of observations to confirm the scaling resulting in the exploratory factor analysis of the research. Confirming the fusion of cognitive and emotional sense of humour into the general sense of humour would further support the coexistence of emotion and cognition in humour. Another important outcome of the EFA analysis is the shift of the pensive dimension of seriousness to bad mood. The implications of such outcomes are huge not only on the study of moods, but also on the role of moods have on cognition.

To the role of daily moods and humour appreciation is less clear in current research because participants were collecting both humorous and non-humorous stimuli on the same day, regardless of mood. Further research focusing on different daily moods could uncover other aspects the current research could not clearly explain, such as determining in which measure the shifts of daily mood affect the appreciation of humour. Rather, it has found evidence that daily moods are more correlated to the emotional mechanism.

Similarly, cases of disparaging humour could be considered for a specific study. The lower level of validity attributed to the disparaging mechanism scale for the humorous dataset should be further investigated. This could not only develop a better comprehension of disparagement, but also confirm that the congruity to the individual's goals overcome the sense of disparagement. Neurological studies already linked the sense of disparagement to the social cognition at a neurological level (Chan *et al.*, 2016). The lower validity of the disparaging scale in case of humour success should be further investigated. Its confirmation could lead to a different conception of the role of disparagement in social

cognition, and to results useful not only to marketing communications, but also to organisational behaviour studies about workplace bullying.

Another limitation is based on the theoretical paradigms of humour studies. The use of the word *safety* does not express an absolute concept. Our level of safety toward certain topics can be lowered by the context, the source of the joke, and, in a lesser measure as seen in the analysis, by the interaction of the daily mood and the daily need for social sense of humour. Further research should focus on investigating and identifying which variables affect the threshold of our perception of *safety.* Another limitation of the concept of *safety* is that, in humour studies, the word is associated with the emotional mechanism of humour. The general theory of humour proposed prefers the concept of *congruity to the individual's mental schemata,* since participants also evaluate the *safety* cognitively. The consequential change from the I-A-R proposed by Mandler (1982) to I-R-S needs further confirmation considering wider panels of investigation. The general theory of humour could be implemented with a further comprehension of the ways successful humorous content *agrees* with the mental schemata. In this sense, the comparison with other mental states, such as *beauty* (Scarry, 1999)and *play* (Speck, 1987, 1991), could play a key role. This latter point is the main one to develop a more precise science of humour, and to make it a more predictable and manageable tool of strategic communication.

The completely new outcomes of incongruous cognitive arousal (Yoon, 2018), and emotional congruous arousal (Hameed, Zainab and Shamim, 2018) need further investigation as well. While the collection of stimuli from the real market has been advocated, the presentation of stimuli previously selected according to the two typologies of arousal could confirm this aspect.

The research has allowed the rejection of any classification of humour *a priori* since the symbolic representation of the joke is entirely determined by the taste of individuals. Thus, any research classifying humorous stimuli is entirely affected by the researcher's taste. This does not mean that humour is unobjectifiable and not an object of scientific study, but that humour is a symbolic communication phenomenon. Being a communication effect based on the perception of the alternative meaning comprehension, nobody can completely control how the *alternative meaning* is decoded by the target of the humour, in line with linguistic, semiotic (Eco, 1979), and even psychoanalysis (Ogden, 2022) . Current research does not have means to identify elements that can help to control the creation of the alternative meaning, although it has been suggested to follow the sociolinguistic stratification of languages as a reference to the formulation of the humorous incongruity. Further research should focus on the role of the context, the source (and its capability of creating a mental humorous environment), the target of the humorous joke, and exploring further variables involved in directing such phenomena. The findings of such research are of particular

interest, especially for business studies, since humorous marketing communications in general have less time to be effective than, for example, a full performance of a comedian. In this sense, humorous campaigns such as Comparethemarket.com (Patterson, Khogeer and Hodgson, 2013) could overcome certain resistance to accept the alternative meaning.

The coding presented in chapter 5 is framed within a preliminary investigation of humorous appeals. It has identified important themes and expanded on relevant literature. The higher recurrence of related humour in the humorous dataset is an outcome needing more research. Research should confirm the outcome in other collections of stimuli. It is unclear whether it is the relatedness to enhance humour (the cognition is helped by knowing the sender of the message), or humour enhances relatedness (effect on cognitive memory). Further studies should investigate this point.

In conclusion, humour was proposed as a strategy of communication. Despite some literature on the matter, the continuous use of humour as appeal is far from being a concrete object of study for research. It could constitute an important breakthrough not only for business studies, but also for humour studies and humour production sciences. Finally, the nature of humour as a meta-appeal confirmed by current research enables humour to become a strategy of communication capable of holding together other appeals of communication.

6.3.1 - Cross-cultural perspectives of humour studies.

Among the 33 participants, only two were from non-European countries (Quatar, and Bangladesh). 8 participants were born in Italy, 1 in Greece, one in Romania. At the time of the collection, only one of them was living in Italy, while all the others had spent at least 10 years in the UK. All the other participants had a British background. Every participant, however, had spent at time in the UK (only one in the US) at least during their studies. The small number of participants, and the fact that they all had spent a considerable formative time in the UK, has not allowed to define any cultural difference except for one response. The participant from Bangladesh considered a *profanity* an advertising reporting the word *sex* in it, where the humour fails. However, the same participant reported other examples of advertising with sexual innuendo too, accepted by their morals. Thus, it was not possible to thoroughly analyse cultural differences among the observations reported in the research.

The cross-cultural differences in humorous advertising appreciation are a research domain of particular interest, since the production of humorous content intelligible by different cultures could sensitively reduce the expenditure of advertising and marketing communications production, as in the case of Peugeot reported in the introduction (Melewar, Bassett and Simes, 2006).

The study of cultural differences of humour should account for several consideration this thesis has encountered. The fist layer of the onion considers that humour itself is a cultural trait, along with a social, and psychological one. Since there are evidence that the culture does indeed affect the use individuals do of humour (Jiang, Li and Hou, 2019), the clarification of how humour itself is conceived by the specific cultures object of the research can follow qualitative investigations on the matter. Such a mapping, on a global stage, would pave the way for more studies to further differentiate the cultural implications of humour.

The second layer of the onion consists of the interconnection between language and culture. According to linguistic anthropology's theory known as Sapir-Whorf hypothesis, languages shape the way we think (Koerner, 1992). The fact that every stimulus of current research could be coded as a metaphor allows to analyse linguistic differences in jokes and the way they are formulated. For example, higher levels of language ambiguity (Wasow, Perfors and Beaver, 2005; Piantadosi, Tily and Gibson, 2012; Solé and Seoane, 2015) could allow a higher recurrence of puns. The mapping of metaphors-based humour would give a solid picture of the linguistic implications of humour formulation across the cultures.

The theory of humour proposed in this thesis allows a dual approach to the study of cultural differences in humour appreciation. Considering the many difficulties and limitations of linking psychological studies to the concept of culture (Cooper and Denner, 1998), it is recommendable to use a diversified approach. Firstly, there are evidence of similarities in cognition across culture via the application of the Cattel-Horn-Carroll construct (Wilson *et al.*, 2023). However, research in the field should consider the effect of the g-factor on humour production (Christensen *et al.*, 2016) before discerning any cultural differences in in the cognitive process of humour appreciation. Even more complicated appears the discernment between emotional and cultural implications for humour success. For this aim the use of a methodology allowing multilevel analysis is strongly recommended, to observe within and between individuals differences.

The cultural differences in humour appreciation could be investigated adding up studies investigating smaller aspect of cultural differences in humour. For example, Xu, Liu and Wang (2023) analyse the humorous implications of body language in China. The comparison with similar studies from different cultures could lead to a better understanding of cultural differences of humour on the specific matter. On the other hand, a holistic approach could focus on the perception of jokes allegedly common to every human culture. For example, some forms of scatological humour (e.g., body fluid, sex jokes, flatulence joke, et c.), since are linked to the functioning of human body, can be considered a base for a common human sense of humour. However, studies intended to follow this lead should consider

elements such as the social class (Oring, 2008), and age (Geest, 2016), among the other elements influencing the success/failure of the joke.

A final approach should follow similar research in business studies. Ruch *et al.* (1991) attempted an cross-cultural analysis of humour starting from a specific taxonomy of cartoon and humour. The relevance of such research, behind its the great contribution to humour studies, relies on the call for the formulation of a complete taxonomy of humour. Matching the reasons for success and failure of humour, this thesis has already identified Association, Contradiction, Contrast, Dissociation, Escalation, Inversion, and Recombination (see appendix 7) as a fist nucleus for a taxonomy of humour that considers the cognitive resolution of the incongruity. The development and refinement of such taxonomy would allow the analysis of huge data, for example by using the elements of the taxonomy as factors of a Structural Topic Modelling (STM), could allow a solid nomenclature to map how humour is appreciated in different cultures.

Reference list

Abrahams, R. D. (1964) *Deep down in the jungle...: Negro narrative folklore from the streets of Philadelphia*. Folklore Associates.

Adler, S. and Sarstedt, M. (2021) 'Mapping the jungle: A bibliometric analysis of research into construal level theory', *Psychology & Marketing*, 38(9), pp. 1367–1383. doi: https://doi.org/10.1002/mar.21537.

Afifah, N. and Sari, R. P. (2019) 'Literature and Culture GESTURE AS LANGUAGE IN DRAKEPOSTING INTERNET MEME (A STUDY OF SEMIOTICS)', *The 3rd IndonesianInternational Conference on Linguistics, Language Teaching, Literature and Culture*, (February).

Agee, T. (2003) 'Which Brand?', *NZ Marketing Magazine*, 21(3), p. 43. Available at: http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=9550665&authtype=sso&custid=s8993828&site=ehost-live.

Åkestam, N., Rosengren, S. and Dahlen, M. (2017) 'Advertising "like a girl": Toward a better understanding of "femvertising" and its effects', *Psychology & Marketing*, 34(8), pp. 795–806. doi: https://doi.org/10.1002/mar.21023.

Ali, M. A., Srinivas, Y. M. and Bhat, M. S. (2012) 'Effectiveness of Music in Humorous Advertisements.', *BVIMR Management Edge*, 5(2), pp. 103–117. Available at: http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=89746082&authtype=sso&custid=s8993828&site=ehost-live.

Althuizen, N. (2017) 'Communicating a Key Benefit Claim Creatively and Effectively through Five Conveyor Properties', *Psychology & Marketing*, 34(1), pp. 5–18. doi: https://doi.org/10.1002/mar.20970.

Althuizen, N. (2021) 'Revisiting Berlyne's inverted U-shape relationship between complexity and liking: The role of effort, arousal, and status in the appreciation of product design aesthetics', *Psychology & Marketing*, 38(3), pp. 481–503. doi: https://doi.org/10.1002/mar.21449.

Ameen, N. *et al.* (2022) 'Toward advancing theory on creativity in marketing and artificial intelligence', *Psychology & Marketing*, 39(9), pp. 1802–1825. doi: https://doi.org/10.1002/mar.21699.

Anderson, L. (2015) 'Racist humor', *Philosophy Compass*, 10(8), pp. 501–509. doi: 10.1111/phc3.12240.

Andrew, R. J. (1963) 'Evolution of Facial Expression.', *Science (New York, N.Y.)*, 142(3595), pp. 1034–

1041. doi: 10.1126/science.142.3595.1034.

Andrews, J. C. (1988) 'Motivation, ability, and opportunity to process information: Conceptual and experimental manipulation issues', *Advances in Consumer Research*, 15(1), pp. 219–225.

Andronikidis, A. I. and Lambrianidou, M. (2010) 'Children's understanding of television advertising: A grounded theory approach', *Psychology & Marketing*, 27(4), pp. 299–322. doi: https://doi.org/10.1002/mar.20333.

Apte, M. L. (1985) *Humor and laughter: An anthropological approach*. Cornell Univ Pr.

Argyriou, E. and Melewar, T. C. (2011) 'Consumer attitudes revisited: A Review of attitude theory in marketing research', *International Journal of Management Reviews*, 13(4), pp. 431–451. doi: 10.1111/j.1468-2370.2011.00299.x.

Arnould, E. J. and Thompson, C. J. (2005) 'Reflections: consumer culture theory - twenty years of research', *Journal of Consumer Culture*, 31(4), pp. 868–882. doi: 10.1086/426626.

Ashley, C. and Tuten, T. (2015) 'Creative Strategies in Social Media Marketing: An Exploratory Study of Branded Social Content and Consumer Engagement', *Psychology & Marketing*, 32(1), pp. 15–27. doi: https://doi.org/10.1002/mar.20761.

Attardo, S. (1994) *Linguistic Theories of Humour*. Edited by Mouton de Gruyter. Berlin/ New York.

Attardo, S. (2005) 'Humorous Metaphors', in Brone, G; Fayaerts, K; Veale, T. (ed.) *Cognitive Linguistic and Humor Research*. Berlin: De Gruyter Mouton.

Attardo, S. (2015) '5. Humorous Metaphors', in Brône, G., Feyaerts, K., and Veale, T. (eds). De Gruyter Mouton, pp. 91–110. doi: doi:10.1515/9783110346343-005.

Attardo, S. and Raskin, V. (1991) 'Script theory revis (it) ed: Joke similarity and joke representation model', *Humor-International Journal of Humor Research*, 4(3–4), pp. 293–348.

Baig, M., Butt, A. F. and Khattak, M. A. (2019) 'Hilarious sitcoms as marketing platform to enhance product appeal through star power : A study to investigate the effectiveness of QMobile advertisement when introduced in situational comedy Bulbulay', 9(2), pp. 224–241.

Barnden, J. A. *et al.* (1994) 'An Integrated Implementation of Simulative, Uncertain and Metaphorical Reasoning about Mental States', *Principles of Knowledge Representation and Reasoning*, (1), pp. 27–38. doi: 10.1016/b978-1-4832-1452-8.50100-7.

Bartlett, M. S. (1992) 'Properties of Sufficiency and Statistical Tests', pp. 113–126. doi: 10.1007/978-

1-4612-0919-5_8.

Bäulke, L., Daumiller, M. and Dresel, M. (2019) 'The Role of State and Trait Motivational Regulation for Procrastinatory Behavior in Academic Contexts: Insights from two Diary Studies', *Under review*, 53(9), pp. 1689–1699. doi: 10.1017/CBO9781107415324.004.

Beard, F. K. (2005) 'One Hundred Years of Humor in American Advertising', *Journal of Macromarketing*, 25(1), pp. 54–65. doi: 10.1177/0276146705274965.

Bedford, L. (2015) *Specsavers Parody Advertisement*, *Worcester Business School: Advertisement Portfolio*. Available at: https://lucybedford93.wordpress.com/2015/02/05/specsavers-parody-advertisement/ (Accessed: 10 April 2020).

Bell, N. and Attardo, S. (2010) 'Failed humor: Issues in non-native speakers' appreciation and understanding of humor', *Intercultural Pragmatics*, 7(3), pp. 423–447. doi: 10.1515/IPRG.2010.019.

Bell, N. D. (2007) 'Humor comprehension: Lessons learned from cross-cultural communication', *Humor*, 20(4), pp. 367–387. doi: 10.1515/HUMOR.2007.018.

Berg, E. M. and Lippman, L. G. (2001) 'Does Humor in Radio Advertising Affect Recognition of Novel Product Brand Names. (cover story)', *Journal of General Psychology*, 128(2), p. 194. Available at: http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=4969872&authtype=sso&custid=s8993828&site=ehost-live.

Berger, S., Wagner, U. and Schwand, C. (2012) 'Assessing Advertising Effectiveness: The Potential of Goal-Directed Behavior', *Psychology & Marketing*, 29(6), pp. 411–421. doi: https://doi.org/10.1002/mar.20530.

Vanden Bergh, B. G. *et al.* (2011) 'The multidimensional nature and brand impact of user-generated ad parodies in social media.', *International Journal of Advertising*, 30(1), pp. 103–131. Available at: http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=59258242&authtype=sso&custid=s8993828&site=ehost-live.

Berlyne, D. E. (1960) *Conflict, Arousal and Curiosity*. New York: McGraw-Hill.

Berlyne, D. E. (1969) 'Laughter, Humour and Play.', in *Lindzey, g; Aronson, E (1969) The Handbook of Social Psychology, Vol III*. Second. Reading/London: Addison-Wailey.

Besemer, S. and O'Quin, K. (1986) 'Analyzing creative products: Refinement and test of a judging instrument', *The Journal of Creative Behavior*, 20(2), pp. 115–126.

Bettman, J. R. and Park, C. W. (1980) 'Effects of Prior knowledge and experience and phase of the

choice process on consumer decision making process: A protocol Analysis.', *Journal of Consumer Research*, 7(3), pp. 234–248. doi: 10.1086/208812.

Bezes, C. and Paris, I. (2015) 'Applying The Elaboration Likelihood Model To Multichannel Retailing', 31(4), pp. 1453–1468.

Billig, M. (2001a) 'Humour and Embarrassment: limits of "nice-guy" theories of social life', *Theory, Culture and Society*, 18(5), pp. 23–43.

Billig, M. (2001b) 'Humour and Hatred: The racist jokes of the Ku Klux Klan', *Discourse and Society*, 12(3), pp. 267–289.

Bitterly, T. B., Brooks, A. W. and Schweitzer, M. E. (2016) 'When Humor Increases and Decreases Status', *Journal of personality and social psychology*, Advance on. doi: 10.1037/pspi0000079.

Bitterly, T. B., Brooks, A. W. and Schweitzer, M. E. (2017) 'Risky business: When humor increases and decreases status.', *Journal of Personality and Social Psychology*, 112(3), pp. 431–455. doi: 10.1037/pspi0000079.

Blaxter, L., Tight, M. and Hughes, C. (2006) *How To Research*. Maidenhead: McGraw-Hill.

Blum, L. and McClellan, S. (2006) 'Why More Brands Risk Mockery to Boost Image.', *Adweek*, 47(26), p. 9. Available at: http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=21476677&authtype=sso&custid=s8993828&site=ehost-live.

Boeuf, B., Carrillat, F. A. and D'Astous, A. (2018) 'Interference effects in competitive sponsorship clutter', *Psychology & Marketing*, 35(12), pp. 968–979. doi: https://doi.org/10.1002/mar.21149.

Bolger, N., Davis, A. and Rafaeli, E. (2003) 'Diary Methods: Capturing Life as it is Lived', *Annual Review of Psychology*, 54(1), pp. 579–616. doi: 10.1146/annurev.psych.54.101601.145030.

Borau, S. *et al.* (2021) 'The most human bot: Female gendering increases humanness perceptions of bots and acceptance of AI', *Psychology & Marketing*, 38(7), pp. 1052–1068. doi: https://doi.org/10.1002/mar.21480.

Boshoff, C. (2016) 'The lady doth protest too much: a neurophysiological perspective on brand tarnishment', *Journal of Product & Brand Management*, 25(2), pp. 196–207. doi: 10.1108/JPBM-08-2014-0697.

Braddon-Mitchell, D. and Jackson, F. (1996) *Philosophy of Mind and Cognition*. Blackwell.

Breevaart, K. *et al.* (2019) 'Engagement During Demanding Workdays: A Diary Study on Energy Gained From Off-Job Activities', *International Journal of Stress Management*, 27(1), pp. 45–52. doi: 10.1037/str0000127.

Bremmer, J. and Roodwnburg, H. (1997) *A Cultural History of Humour. From Antiquity to the Present Day*. Cambridge: Polity Pre.

Breusch, T. S., and A. R. P. (1979) 'BreuschPagan_1979.pdf', pp. 47 (5):1287–94.

Brown, M. R., Bhadury, R. K. and Pope, N. K. L. (2010) 'The Impact of Comedic Violence on Viral Advertising Effectiveness', *Journal of Advertising*, 39(1), pp. 49–66. doi: 10.2753/JOA0091-3367390104.

Brown, S. (2014) 'I'm buying, Jack! Fooling around an ambiguous brand.', *Journal of Consumer Behaviour*, 13(2), pp. 108–121. Available at: http://10.0.3.234/cb.1448.

Buecker, S. *et al.* (2020) 'Changes in daily loneliness during the first four weeks of the Covid-19 lockdown in Germany', *under review*, pp. 1–33.

Cacioppo, J. T. and Petty, R. E. (1982) 'The Need for Cognition', *Journal of Personality and Social Psychology*, 42(1), pp. 116–131. doi: 10.1300/j046v07n03_06.

Cann, A. and Calhoun, L. G. (2001) 'Perceived personality associations with differences in sense of humor: Stereotypes of hypothetical others with high or low senses of humor', *Humor - International Journal of Humor Research*, 14(2), pp. 117–130. doi: 10.1515/humr.14.2.117.

Castronovo, C. and Huang, L. (2012) 'Social Media in an Alternative Marketing Communication Model.', *Journal of Marketing Development & Competitiveness*, 6(1), pp. 117–136. doi: 10.1017/CBO9781107415324.004.

Casu, G. and Gremigni, P. (2012) 'Humor Measurement', in *Humor and Health Promotion*. New York: Nova Science Publishers, pp. 253–274.

Chalmers, G. (2006) 'Direct choice: Skoda.', *Marketing (00253650)*, p. 13. Available at: http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=19644864&authtype=sso&custid=s8993828&site=ehost-live.

Chan, Y.-C. *et al.* (2016) 'Neural Correlates of Hostile Jokes: Cognitive and Motivational Processes in Humor Appreciation', *Frontiers in Human Neuroscience*, 10(October), p. Article 527. doi: 10.3389/fnhum.2016.00527.

Chattopadhyay, A. and Basu, K. (1990a) 'Does Brand Attitude Moderate the Persuasiveness of humor

in advertising', *Advances in Consumer Research*, 17, pp. 442–453. Available at: http://www.acrwebsite.org/volumes/display.asp?id=7046.

Chattopadhyay, A. and Basu, K. (1990b) 'Humor in Advertising: The Moderating Role of Prior Brand Evaluation', *Journal of marketing research*, 27(4), pp. 466–476. doi: https://doi.org/10.2307/3172631.

Chen, S. H. and Lee, K. P. (2008) 'The role of personality traits and perceived values in persuasion: An elaboration likelihood model perspective on online shopping', *Social Behavior and Personality*, 36(10), pp. 1379–1400. doi: 10.2224/sbp.2008.36.10.1379.

Chien-Huang, L. and Hung-Chou, L. (2012) 'Effects of Mood States on Variety Seeking: The Moderating Roles of Personality', *Psychology & Marketing*, 29(3), pp. 157–166. doi: https://doi.org/10.1002/mar.20512.

Christensen, A. P. *et al.* (2016) 'Clever People: Intelligence and Humor Production Ability', *Psychology of Aesthetics Creativity and the Arts*, (Dec 19), pp. 1–28. doi: dx.doi.org/10.1037/aca0000109.

Chung, H. and Zhao, X. (2003) 'Humour effect on memory and attitude: moderating role of product involvement.', *International Journal of Advertising*, 22(1), pp. 117–144. Available at: http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=9313232&authtype=sso&custid=s8993828&site=ehost-live.

Chung, H. and Zhao, X. (2011) 'The Effects of Humor on Ad Processing: Mediating Role of Brand Familiarity', *Journal of Promotion Management*, 17(1), pp. 76–95. doi: 10.1080/10496491.2011.553788.

Cliff, N. (1983) 'Some cautions concerning the application of causal modeling methods', *Multivariate Behavioral Research*, 18(1), pp. 115–126. doi: 10.1207/s15327906mbr1801_7.

Cline, T. W., Altsech, M. B. and Kellaris, J. J. (2003) 'When does humor enhance or inhibit ad responses? - the moderating role of the need for humor', *Journal of Advertising*, 32(3), pp. 31–45. doi: 10.1080/00913367.2003.10639134.

Cline, T. W. and Kellaris, J. J. (1999) 'The Joint Impact of Humor and Argument Strength in a Print Advertising Context: A Case for Weaker Arguments.', *Psychology & Marketing*, 16(1), pp. 69–86. Available at: http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=11712231&authtype=sso&custid=s8993828&site=ehost-live.

Cline, T. W., Kellaris, J. J. and Bondra, J. (2007) 'HUMOR AND AD MEMORABILITY: ON THE CONTRIBUTIONS OF HUMOR EXPECTANCY, RELEVANCY, AND NEED FOR HUMOR.', *AMA Winter*

Educators' Conference Proceedings. American Marketing Association, pp. 106–107. Available at: http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=32571638&authtype=sso&custid=s8993828&site=ehost-live.

Cline, T. W., Kellaris, J. J. and Machleit, K. A. (2011) 'Consumers' need for levity in advertising communications', *Journal of Marketing Communications*, 17(1), pp. 17–35. doi: 10.1080/13527260903090790.

Cooper, C. R. and Denner, J. (1998) 'Theories linking culture and psychology: Universal and Community-Specific Processes', *Annual Review of Psychology*, 49(February 1998), pp. 559–584. doi: 10.1146/annurev.psych.49.1.559.

Cooperman, A. W. and Waller, N. G. (2022) 'Heywood you go away! Examining causes, effects, and treatments for Heywood cases in exploratory factor analysis.', *Psychological Methods*, 27(2), pp. 156–176. doi: https://doi.org/10.1037/met0000384.

Crano, W. D. and Prislin, R. (2006) 'Attitudes and Persuasion', *Annual Review of Psychology*, 57(1), pp. 345–374. doi: 10.1146/annurev.psych.57.102904.190034.

Crawford, H. J. and Gregory, G. D. (2015) 'Humorous advertising that travels: A review and call for research', *Journal of Business Research*, 68(3), pp. 569–577. doi: 10.1016/j.jbusres.2014.09.005.

Daniell, H. (2012) 'Modulation of emotion by cognition and cognition by emotion K.S.', 76(October 2009), pp. 211–220.

Daoud, J. I. (2018) 'Multicollinearity and Regression Analysis', *Journal of Physics: Conference Series*, 949(1). doi: 10.1088/1742-6596/949/1/012009.

Darwin, C. (1872) *The expression of the emotions in man and animals.* Edited by P. Ekman and P. Prodger. London : HarperCollins, 1998. Available at: http://search.ebscohost.com/login.aspx?direct=true&db=cat01883a&AN=uea.001041857&site=eds-live&scope=site.

Das, E. *et al.* (2014) 'Exploring Killer Ads: A Terror Management Account of Death in Advertisements', *Psychology & Marketing*, 31(10), pp. 828–842. doi: https://doi.org/10.1002/mar.20737.

Daugherty, T. *et al.* (2018) 'Measuring consumer neural activation to differentiate cognitive processing of advertising: Revisiting Krugman', *European Journal of Marketing*, 52(1–2), pp. 182–198. doi: 10.1108/EJM-10-2017-0657.

Davies, C. (2011) *The mirth of nations*. Transaction Publishers.

Denning, S. (2006) 'Effective storytelling: strategic business narrative techniques', *Strategy & Leadership*, 34(1), pp. 42–48. doi: 10.1108/10878570610637885.

Derry, S. J. (1996) 'Cognitive Schema Theory in the Constructivist Debate', *Educational Psychologist*, 31(3/4), pp. 163–174.

DeYoung, C. G. (2013) 'The neuromodulator of exploration: A unifying theory of the role of dopamine in personality', *Frontiers in Human Neuroscience*, 7(NOV), pp. 1–26. doi: 10.3389/fnhum.2013.00762.

Dillon, W. R., Kumar, A. and Mulani, N. (1987) 'Offending Estimates in Covariance Structure Analysis: Comments on the Causes of and Solutions to Heywood Cases', *Psychological Bulletin*, 101(1), pp. 126–135. doi: 10.1037/0033-2909.101.1.126.

Dimaggio, P. (1997) 'Culture and cognition', *Annual Review of Sociology*, 23, pp. 263–287.

Dinh, T. D. and Mai, K. N. (2016) 'Guerrilla marketing's effects on Gen Y's word-of-mouth intention – a mediation of credibility', *Asia Pacific Journal of Marketing and Logistics*, 28(1), pp. 4–22. doi: 10.1108/APJML-06-2015-0102.

Dore, M. (2018) 'Chapter 3 . 6 : Controversial Humor in Advertising : Social and Cultural Implications', in Maon, F. et al. (eds) *Not All Claps and Cheers: Humor in Business and Society Relationships*. New York: Routhledge, pp. 132–147.

Dormon, N. (2016) 'Beauty Just for Laughs ? HUMOR CAN MEAN SERIOUS BUSINESS FOR BEAUTY BRANDS', (December), pp. 56–58.

Douglas, M. (1968) 'The Social Control of Cognition : Some Factors in Joke Perception Author (s): Mary Douglas Stable

URL : http://www.jstor.org/stable/2798875 . THE SOCIAL CONTROL OF COGNITION : SOME FACTORS', *Man*, 3(3), pp. 361–376. Available at: http://www.jstor.org/stable/2798875.

Dueñas, A. N., Kirkness, K. and Finn, G. M. (2020) 'Uncovering Hidden Curricula: Use of Dark Humor in Anatomy Labs and its Implications for Basic Sciences Education', *Medical Science Educator*, 30(1), pp. 345–354. doi: 10.1007/s40670-019-00912-0.

Dundes, A. (1987) *Cracking jokes: Studies of Sick Humor Cycles and Stereotypes*. Berkeley: Ten Speed.

Dundes, A., Leach, J. W. and Özkök, B. (1970) 'The Strategy of Turkish Boys. Verbal Dueling Rhymes', *The Journal of American Folklore*, 83(329), pp. 325–349.

Dworkin, E. S. and Efran, J. S. (1967) 'The angered: Their susceptibility to varieties of humor.', *Journal*

of Personality and Social Psychology. US: American Psychological Association, pp. 233–236. doi: 10.1037/h0024568.

Eco, U. (1979) *The role of the reader: explorations in the semiotics of texts*. Indiana Univ. Press. Available at: http://search.ebscohost.com/login.aspx?direct=true&db=edseul&AN=edseul.2000037520253&site=eds-live&scope=site.

Eisend, M. (2009) 'A meta-analysis of humor in advertising', *Journal of the Academy of Marketing Science*, 37(2), pp. 191–203. doi: 10.1007/s11747-008-0096-y.

Eisend, M. (2011) 'How humor in advertising works: A meta-analytic test of alternative models', *Marketing Letters*, 22(2), pp. 115–132. doi: 10.1007/s11002-010-9116-z.

Eisend, M. (2013) 'The Moderating Influence of Involvement on Two-Sided Advertising Effects', *Psychology & Marketing*, 30(7), pp. 566–575. doi: https://doi.org/10.1002/mar.20628.

Eisend, M. (2022) 'The influence of humor in advertising: Explaining the effects of humor in two-sided messsages', *Psychology & Marketing*, 39(5), pp. 962–973. doi: https://doi.org/10.1002/mar.21634.

Eisend, M. and Stokburger-Sauer, N. E. (2013) 'Measurement Characteristics of Aaker's Brand Personality Dimensions: Lessons to be Learned from Human Personality Research', *Psychology & Marketing*, 30(11), pp. 950–958. doi: https://doi.org/10.1002/mar.20658.

Ekman, P., Davidson, R. J. and Friesen, W. V (1990) 'The Duchenne smile: emotional expression and brain physiology. II.', *Journal of personality and social psychology*, 58(2), pp. 342–353. doi: 10.1037/0022-3514.58.2.342.

Evans, R. B. (1988) *Production and creativity in advertising.* London : Pitman, 1988. Available at: http://search.ebscohost.com/login.aspx?direct=true&db=cat01883a&AN=uea.001024537&site=eds-live&scope=site.

Fine, G. A. (1979) 'Small Groups and Culture Creation', *CEUR Workshop Proceedings*, 44(5), pp. 733–745. doi: 10.1017/CBO9781107415324.004.

Fine, G. A. and Soucey, M. D. E. (2005) 'Joking cultures : Humor themes as social regulation in group life', *Humor - International Journal of Humor Research*, 1(Dundes 1977), pp. 1–22. doi: 10.1515/humr.2005.18.1.1.

Firat, A. F. and Venkatesh, A. (1995) 'Liberatory Postmodernism and the Reenchantment of Consumption', *Journal of Consumer Research*, 22(3), p. 239. doi: 10.1086/209448.

Flaherty, K., Weinberger, M. G. and Gulas, C. S. (2004) 'The Impact of Perceived Humor, Product Type, and Humor Style in Radio Advertising.', *Journal of Current Issues & Research in Advertising (CTC Press)*, 26(1), pp. 25–36. Available at: http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=13929678&authtype=sso&custid=s8993828&site=ehost-live.

Fo, D. (2003) *Mistero Buffo. Giullarata Popolare*. Settima Ed. Torino: Einaudi.

Fornell, C. and Larcker, D. F. (1981) 'Evaluating Structural Equation Models with Unobservable Variables and Measurement Error', *Journal of Marketing Research*, 18(1), p. 39. doi: 10.2307/3151312.

Forni, G. (2016) '«Umorismo». Una lung storia?", Chi ride ultimo. Parodia satira umorismi', *between*, VI(November 2016), pp. 1–7.

Fox, G. L., Rinaldo, S. B. and Amant, K. St. (2015) 'The Effects of Rhetorical Figures and Cognitive Load in Word-of-Mouth Communications', *Psychology & Marketing*, 32(10), pp. 1017–1030. doi: https://doi.org/10.1002/mar.20839.

Freud, S. (2002) *The Joke and Its Relation to the Unconscious*. London: Penguin.

Fugate, D. L. (1998) 'The advertising of services: what is an appropriate role for humor?', *Journal of Services Marketing*, 12(6), pp. 453–472. doi: 10.1108/08876049810242731.

Gallego, G. *et al.* (2013) 'On the mahalanobis distance classification criterion for multidimensional normal distributions', *IEEE Transactions on Signal Processing*, 61(17), pp. 4387–4396. doi: 10.1109/TSP.2013.2269047.

Gamble, J. (2001) 'Humor in apes', *Humor*, 14(2), pp. 163–179. doi: 10.1515/humr.14.2.163.

Geest, S. Van Der (2016) 'Scatological Children ' s Humour', *Etnofoor, Humour*, 28(1), pp. 127–140.

Gelb, B. D. and Sundaram, S. (2002) 'Adapting to "word of mouse"', *Business Horizons*, 45(4), pp. 21–25. doi: 10.1016/S0007-6813(02)00222-7.

Gilmore, D. D. (1995) 'The scholar Minstrels of Andalusia: Deep Oratory, or the Carnivalesque upside down', *Journal of the Royal Anthropological Institute*, pp. 561–580.

Giora, R. (1995) 'On irony and negation', *Discourse processes*, 19(2), pp. 239–264. doi: ttps://doi.org/10.1080/01638539509544916.

Giora, R. (1997) 'Understanding Figurative and Literal Language: The Graded Salience Hypothesis', *Cognitive Linguistics*, 8(3), pp. 183–206. doi: 10.1515/cogl.1997.8.3.183.

Giora, R., Fein, O. and Schwartz, T. (1998) 'Irony: Grade Salience and Indirect Negation', *Metaphor and Symbol*, pp. 83–101. doi: 10.1207/s15327868ms1302_1.

Goffman, E. (1966) 'Fun in Games', in *Encounters*. Indianapolis: Bobbs-Merril, pp. 17–81.

Goffman, E. (1971) 'Normal Appearances', in *Relations in Public*. New York: Basic Books Inc, pp. 238–282.

Goffman, E. (1974) *Frame analysis: An essay on the organization of experience.*, *Frame analysis: An essay on the organization of experience.* Cambridge, MA, US: Harvard University Press.

Goffman, E. (1990) *Stigma. Notes on the Management of Spoiled Identity*. Second Bri. London: Penguin.

Goldman, R. and Papron, S. (1994) 'Advertising in the age of hypersignification', *Theory, Culture and Society*, 11, pp. 23–53.

Goldstein, I. (2000) 'Intersubjective Properties by Which we Specify Pain, Pleasure, and Other Kinds of Mental States', *Philosophy*, pp. 89–104. doi: 10.1017/S0031819100000073.

Goldstein, J., Suls, J. and Anthony, S. (1972) 'Enjoyment of Specific Types of Humor Content: Motivation or Salience', in Goldstein, J. and McGhee, P. E. (eds) *The Psychology of Humor:Theoretical Perspectives and Empirical Issues*. New York: Academic Press, pp. 159–171.

Goldstein, K. (2009) *PETA's New 'Save The Whales' Billboard Takes Aim At Fat Women (UPDATED)*, *Huffing Post*. Available at: https://www.huffingtonpost.co.uk/entry/petas-new-save-the-whales_n_261134 (Accessed: 1 March 2023).

Gov.uk (2021) *COVID-19 Response - Spring 2021 (Summary)*. Available at: https://www.gov.uk/government/publications/covid-19-response-spring-2021/covid-19-response-spring-2021-summary (Accessed: 25 November 2021).

Graham, M. H. (2003) 'Confronting multicollinearity in ecological multiple regression', *Ecology*, 84(11), pp. 2809–2815. doi: 10.1890/02-3114.

Greengross, G., Martin, R. A. and Miller, G. (2012) 'Personality traits, intelligence, humor styles, and humor production ability of professional stand-up comedians compared to college students', *Psychology of Aesthetics, Creativity, and the Arts*, 6(1), pp. 74–82. doi: 10.1037/a0025774.

Greengross, G. and Miller, G. (2011) 'Humor ability reveals intelligence, predicts mating success, and is higher in males', *Intelligence*, 39(4), pp. 188–192. doi: 10.1016/j.intell.2011.03.006.

Greenlaw, S. (1996) 'Figures of rhetoric in advertising language', *Journal of Consumer Research*, 22(4), pp. 424–438. doi: 10.1086/209459.

Groff, R. (2004) *Critical Realism, Post-positivism and the Possibility of Knowledge*. Fist. Edited by M. Archer et al. Oxon: Routledge.

Gruner, C. R. (1997) *The Game of Humor: A Comprehensive Theory of Why We Laugh*. New Brunswick, NJ: Transaction.

Gulas, C. S., McKeage, K. K. and Weinberger, M. G. (2010) 'It's just a joke: Violence against males in humorous advertising', *Journal of Advertising*, 39(4), pp. 109–120. doi: 10.2753/JOA0091-3367390408.

Gulas, C. S. and Weinberger, M. G. (2010) 'That ' s Not Funny Here : Humorous Advertising Across Boundaries 1', in Chiaro, D. (ed.) *Translation, Humour and the Media: Translation and Humour*. London, New York: Continuum, pp. 17–33.

Ha, Y.-W. and Hoch, S. J. (1989) 'Ambiguity, Processing Strategy, and Advertising-Evidence Interactions', l(December), pp. 354–361.

Hair, J. F., Babin, B. J. and Krey, N. (2017) 'Covariance-Based Structural Equation Modeling in the Journal of Advertising: Review and Recommendations J', *ournal of Advertising*, 46(1), pp. 163–177.

Hair, J. F. and Sarstedt, M. (2019) 'Factors versus Composites: Guidelines for Choosing the Right Structural Equation Modeling Method', *Project Management Journal*, 50(6), pp. 619–624. doi: 10.1177/8756972819882132.

Hameed, I., Zainab, B. and Shamim, S. J. (2018) 'Arousal Safety Leading to Purchase Intention: The Role of Moderating and Mediating Variables in Structural Model', *Hameed, Irfan and Zainab, Bibi and Shamim, Syed Jazib (2018): Arousal Safety Leading to Purchase Intention*, pp. 77–96. doi: https://mpra.ub.uni-muenchen.de/91848/.

Handelman, D. and Kapferer, B. (1972) 'Forms of Joking Activity: A Comparative Approach', *American Anthropologist*, 74(3), pp. 484–517. doi: 10.1525/aa.1972.74.3.02a00180.

Hansen, J. *et al.* (2009) 'Exploring memory for product names advertised with humour.', *Journal of Consumer Behaviour*, 8(2/3), pp. 135–148. Available at: http://10.0.3.234/cb.278.

Hatzithomas, L., Boutsouki, C. and Zotos, Y. (2009) 'The Effects of Culture and Product Type on the Use of Humor in Greek TV Advertising: An Application of Speck's Humorous Message Taxonomy', *Journal of Current Issues & Research in Advertising*, 31(1), pp. 43–61. doi: 10.1080/10641734.2009.10505256.

Haugtvedt, C. P. P. R. E. C. J. T. (1992) 'Need for Cognition and Advertising: Understanding the Role of Personality Variables in Consumer Behavior', *Journal of Consumer Psychology (Lawrence Erlbaum Associates)*, 1(3), pp. 239–260. doi: 10.1016/S1057-7408(08)80038-1.

He, L. *et al.* (2021) 'Neural resonance in consumers' right inferior frontal gyrus predicts attitudes toward advertising', *Psychology & Marketing*, 38(9), pp. 1538–1549. doi: https://doi.org/10.1002/mar.21523.

Hempelmann, C. F. and Hall, H. (2003) 'YPS–The Ynperfect Pun Selector for computational humor', in *Proceedings of the Workshop on Humor Modeling in the Interface at the Conference on Human Factors in Computing Systems (CHI 2003), New York: Association for Computing Machinery*.

Hempelmann, C., Raskin, V. and Triezenberg, K. E. (2006) 'Computer, Tell Me a Joke... but Please Make it Funny: Computational Humor with Ontological Semantics.', in *FLAIRS Conference*, pp. 746–751.

Herz, M. and Brunk, K. H. (2017) 'Conceptual Advances in Consumers' Semantic and Episodic Brand Memories: A Mixed Methods Exploration', *Psychology & Marketing*, 34(1), pp. 70–91. doi: https://doi.org/10.1002/mar.20974.

Hewson, C., Laurent, D. (2008) 'Research Design and Tools for Internet Research', in Fielding, N., Lee, R. M., and Blank, G. (eds) *The SAGE Handbook of Online Research Methods.* London: SAGE, pp. 58–77.

Hickling, B. (2002) 'Taking ad humour seriously.', *Marketing Magazine*, 107(48), p. 24. Available at: http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=8971390&authtype=sso&custid=s8993828&site=ehost-live.

Hickman, W. C. . (1979) 'More on Turkish Boys ' Verbal Dueling', *American Folklore Society*, 92(365), pp. 334–335.

Ho, S. Y. and Bodoff, D. (2014) 'The Effects of Web Personalization on User Attitude and Behavior: an Integration of the Elaboration Likelihood Model and Consumer Search Theory', 38(2), pp. 497–520. doi: 10.1002/fut.

Hofmann, J., Carretero-Dios, H. and Carrell, A. (2018) 'Assessing the temperamental basis of the sense of humor: Adaptation of the English language version of the state-trait cheerfulness inventory long and standard form', *Frontiers in Psychology*, 9(NOV). doi: 10.3389/fpsyg.2018.02255.

Hornik, J., Ofir, C. and Rachamim, M. (2016) 'Quantitative evaluation of persuasive appeals using comparative meta-analysis', *Communication Review*, 19(3), pp. 192–222. doi: 10.1080/10714421.2016.1195204.

Hornik, J., Ofir, C. and Rachamim, M. (2017) 'Advertising appeals, moderators, and impact on persuasion: A quantitative assessment creates a hierarchy of appeals', *Journal of Advertising Research*, 57(3), pp. 305–318. doi: 10.2501/JAR-2017-017.

Hu, L. T. and Bentler, P. M. (1999) 'Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives', *Structural Equation Modeling*, 6(1), pp. 1–55. doi: 10.1080/10705519909540118.

Huang, H. H. and Mitchell, V.-W. (2014) 'The Role of Imagination and Brand Personification in Brand Relationships', *Psychology & Marketing*, 31(1), pp. 38–47. doi: https://doi.org/10.1002/mar.20673.

Hughes, B. L. and Zaki, J. (2015) 'The neuroscience of motivated cognition', *Trends in Cognitive Sciences*, 19(2), pp. 62–64. doi: 10.1016/j.tics.2014.12.006.

Huizinga, J. (2002) *Homo Ludens. A Study of Play Element in Culture.* Seventh Ed. Oxon: Routledge.

Humphreys, M. S. *et al.* (2010) 'Sponsorship, Ambushing, and Counter-Strategy: Effects Upon Memory for Sponsor and Event', *Journal of Experimental Psychology: Applied*, 16(1), pp. 96–108. doi: 10.1037/a0018031.

Hurley, M. M., Dennett, D. C. and Adams, R. B. (2011) *Inside jokes: Using humor to reverse-engineer the mind*. MIT press.

Husemann, K. C., Ladstaetter, F. and Luedicke, M. K. (2015) 'Conflict Culture and Conflict Management in Consumption Communities', *Psychology & Marketing*, 32(3), pp. 265–284. doi: https://doi.org/10.1002/mar.20779.

Hutchinson, W. and Zenor, M. (1986) 'Product Familiarity and the Strengths of Brand-Attribute Associations: A Signal Detection Thoery Approach', *Advances in Consumer Research*, pp. 450–453. Available at: http://www.acrwebsite.org/volumes/display.asp?id=6529.

Irwin, R. (2015) 'Santam and Nando's: An advertising narrative of local humour, local conflict, local co-branding', *Communicatio*, 41(4), pp. 506–522. doi: 10.1080/02500167.2015.1117503.

Jackson, F. (1982) 'Epiphenomenal Qualia', *The Philosophical Quarterly*, 32(127), pp. 127–136.

Jackson, F. (1986) 'What Mary Didn't Know', *iThe Journal of Phylosophy*, 83(5), pp. 291–295.

Janssens, W. and De Pelsmacker, P. (2005) 'Emotional or informative? Creative or boring?', *International Journal of Advertising*, 24(3), pp. 373–394. Available at: http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=18085004&authtype=sso&custid=s8993828&site=ehost-live.

Jean, S. (2011) 'Brand parody: a communication strategy to attack a competitor', *Journal of Consumer Marketing*, 28(1), pp. 19–26. doi: 10.1108/07363761111101912.

Jensen, D. R. and Ramirez, D. E. (2013) 'Revision: Variance inflation in regression', *Advances in Decision Sciences*, 2013. doi: 10.1155/2013/671204.

Jiang, T., Li, H. and Hou, Y. (2019) 'Cultural differences in humor perception, usage, and implications', *Frontiers in Psychology*, 10(JAN), pp. 1–8. doi: 10.3389/fpsyg.2019.00123.

Jin, C. and Villegas, J. (2007) 'The effect of the placement of the product in film: Consumers' emotional responses to humorous stimuli and prior brand evaluation.', *Journal of Targeting, Measurement & Analysis for Marketing*, 15(4), pp. 244–255. Available at: http://10.0.4.33/palgrave.jt.5750049.

John, S. P. and De'Villiers, R. (2020) 'Elaboration of marketing communication through visual media: An empirical analysis', *Journal of Retailing and Consumer Services*, 54(January), p. 102052. doi: 10.1016/j.jretconser.2020.102052.

Johnson, Keith; Ball, S. (2000) 'Humour and licensed retailing', *Journal of wine markei=tinh*, 12(1), pp. 16–29. doi: 10.1108/eb008703.

Júnior, J. R. de O. *et al.* (2023) 'A story to sell: The influence of storytelling on consumers' purchasing behavior', *Psychology & Marketing*, 40(2), pp. 239–261. doi: https://doi.org/10.1002/mar.21758.

Kaiser, H. F., & Rice, J. (1974) 'Little Jiffy, Mark IV.', *Educational and Psychological Measurement*, 34(1), pp. 111–117. doi: https://doi.org/10.1177/001316447403400115.

Kaiser, H. F. (1960) 'The application of electronic computers to factor analysis.', *Educational and Psychological Measurement*, 20, pp. 141–145. doi: https://doi.org/10.1177/001316446002000116.

Kaiser, H. F. (1974) 'An index of factorial simplicity', *Psychometrika*, 39(1), pp. 31–36. doi: 10.1007/BF02291575.

Kavanagh, D. and O'Sullivan, D. (2007) 'Advertising. The Organizational Production of Humour', in Westwood, R. and Rhodes, C. (eds) *Humour, Work and Organization*. Oxon: Routledge, pp. 235–248.

Keller, K. L. (2013) *Strategic brand management : building, measuring, and managing brand equity.* Boston, [Mass.] ; London : Pearson, c2013. Available at: http://search.ebscohost.com/login.aspx?direct=true&db=cat01883a&AN=uea.003850756&site=eds-live&scope=site.

Kellner, R. and Benedek, M. (2017) 'The role of creative potential and intelligence for humor production', *Psychology of Aesthetics, Creativity, and the Arts*, 11(1), pp. 52–58. doi:

10.1037/aca0000065.

Kelly, J. P. and Solomon, P. J. (1975) 'Humor in television advertising', *Journal of Advertising*, 4(3), pp. 31–35. doi: 10.1080/00913367.1975.10672594.

Keltner, D. *et al.* (2009) 'Just teasing: A conceptual analysis and empirical review.', 127(2), pp. 229–248. doi: 10.1037//0033-2909.127.2.229.

Khan, B. M. and Khan, S. (2013) 'Effect of Humorous Advertising on Brand Recognition.', *IUP Journal of Brand Management*, 10(1), pp. 7–36. Available at: http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=87695372&authtype=sso&custid=s8993828&site=ehost-live.

Kim, T. and Kim, O. (2018) 'Effects of ironic advertising on consumers ' attention , involvement and attitude', *Journal of Marketing Communications*, 7266, pp. 1–15. doi: 10.1080/13527266.2015.1096817.

Kirby, J. (2013) 'The Branding Power of the Prank.', *Harvard Business Review Digital Articles*, pp. 2–3. Available at: http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=118706267&authtype=sso&custid=s8993828&site=ehost-live.

Kitchen, P. J. *et al.* (2014) 'The elaboration likelihood model: Review, critique and research agenda', *European Journal of Marketing*, 48(11–12), pp. 2033–2050. doi: 10.1108/EJM-12-2011-0776.

Klimstra, T. A. *et al.* (2010) 'Short-Term Fluctuations in Identity: Introducing a Micro-Level Approach to Identity Formation', *Journal of Personality and Social Psychology*, 99(1), pp. 191–202. doi: 10.1037/a0019584.

Kline, R. B. (2011) *Principles and Practice of Structural Equation Modeling.* 3rd edn. New York: The Guilford Press.

Koenigstorfer, J. and Uhrich, S. (2017) 'Consumer Attitudes toward Sponsors' Counterambush Marketing Ads', *Psychology & Marketing*, 34(6), pp. 631–647. doi: https://doi.org/10.1002/mar.21011.

Koerner, E. F. K. (1992) 'The Sapir-Whorf Hypothesis: A Preliminary History and a Bibliographical Essay', *Journal of Linguistic Anthropology*, 2(2), pp. 173–198. doi: 10.1525/jlin.1992.2.2.173.

Kolotouchkina, O. *et al.* (2021) 'Disability narratives in sports communication: Tokyo 2020 paralympic games' best practices and implications', *Media and Communication*, 9(3), pp. 101–111. doi:

10.17645/mac.v9i3.4043.

Korteniemi, T. (2013) 'Entry and operation in finland'.

Kotler, P., Keller, K. L. and Keller, K. L. (2006) *Marketing management.* UpperSaddle River, N.J. : Pearson Prentice Hall, 2006 [i.e. 2005]. Available at: http://search.ebscohost.com/login.aspx?direct=true&db=cat01883a&AN=uea.003724736&site=eds-live&scope=site.

Krikmann, A. (2009) 'On the similarity and distinguishability of humour and figurative speech', *Trames*, 13(1), pp. 14–40. doi: 10.3176/tr.2009.1.02.

Krishnan, H. S. and Chakravarti, D. (2003) 'A Process Analysis of the Effects of Humorous Advertising Executions on Brand Claims Memory.', *Journal of Consumer Psychology (Lawrence Erlbaum Associates)*, 13(3), p. 230. Available at: http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=10625903&authtype=sso&custid=s8993828&site=ehost-live.

Kucuk, S. U. (2015) 'A semiotic analysis of consumer-generated antibranding', *Marketing Theory*, 15(2), pp. 243–264. doi: 10.1177/1470593114540677.

van Kuilenburg, P., de Jong, M. D. T. and van Rompay, T. J. L. (2011) '"That was funny, but what was the brand again?"', *International Journal of Advertising*, 30(5), pp. 795–814. Available at: http://10.0.9.197/IJA-30-5-795-814.

Kulkarni, K. K., Kalro, A. D. and Sharma, D. (2020) 'The interaction effect of ad appeal and need for cognition on consumers' intentions to share viral advertisements', *Journal of Consumer Behaviour*, (December 2019), pp. 1–12. doi: 10.1002/cb.1809.

Lavoie, R. and Main, K. (2019) 'Consumer microflow experiences', *Psychology & Marketing*, 36(11), pp. 1133–1142. doi: https://doi.org/10.1002/mar.21262.

Lee, D.-R. (2015) 'The Impact of Leader's Humor on Employees' Creativity: The Moderating Role of Trust in Leader *', *Seoul Journal of Business*, 21(1), pp. 59–86. Available at: http://ezproxy.lib.bbk.ac.uk/docview/1702903426?accountid=8629%5Cnhttp://tb2tn4ax7t.search.serialssolutions.com/?ctx_ver=Z39.88-2004&ctx_enc=info:ofi/enc:UTF-8&rfr_id=info:sid/ProQ:abiglobal&rft_val_fmt=info:ofi/fmt:kev:mtx:journal&rft.genre=article&rft.j.

Lee, E.-J. (2013) 'A Prototype of Multicomponent Brand Personality Structure: A Consumption Synmbolism Approach', *Psychology & Marketing*, 30(2), pp. 173–186. doi: https://doi.org/10.1002/mar.20596.

Lee, E. ju and Schumann, D. W. (2004) 'Explaining the special case of incongruity in advertising: Combining classic theoretical approaches', *Marketing Theory*, 4(1–2), pp. 59–90. doi: 10.1177/1470593104044087.

Lee, Y. and Koo, J. (2016) 'Can a Celebrity Serve as an Issue-Relevant Argument in the Elaboration Likelihood Model?', *Psychology & Marketing*, 33(3), pp. 195–208. Available at: http://eprints.lancs.ac.uk/23431/.

Lehman, K. M. *et al.* (2001) 'A reformulation of the moderating effects of productive humor', *Humor*, 14(2001), pp. 131–161. doi: 10.1515/humr.14.2.131.

Lehmann-Willenbrock, N. and Allen, J. A. (2014) 'How fun are your meetings? Investigating the relationship between humor patterns in team interactions and team performance.', *Journal of Applied Psychology*, 99(6), pp. 1278–1287. doi: 10.1037/a0038083.

Leonidas, H., Christina, B. and Yorgos, Z. (2009) 'The Effects of Culture and Product Type on the Use of Humor in Greek TV Advertising: An Application of Speck's Humorous Message Taxonomy.', *Journal of Current Issues & Research in Advertising (CTC Press)*, 31(1), pp. 43–61. Available at: http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=41128332&authtype=sso&custid=s8993828&site=ehost-live.

Levy, S. and Gvili, Y. (2020) 'Online shopper engagement in price negotiation: the roles of culture, involvement and eWOM', *International Journal of Advertising*, 39(2), pp. 232–257. doi: 10.1080/02650487.2019.1612621.

Lindlof, T. R. and Taylor, B. C. (2011) *Qualitative communication research methods.* 3rd edn. Thousand Oaks, California: SAGE.

Lindstrom, M. (2006) 'Where is the human face to your brand online?', *Media: Asia's Media & Marketing Newspaper*, p. 23. Available at: http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=20539014&authtype=sso&custid=s8993828&site=ehost-live.

Liu, J. and Smeesters, D. (2010) 'Have you seen the news today? The effect of death-related media contexts on brand preferences', *Journal of Marketing Research*, 47(2), pp. 251–262. doi: 10.1509/jmkr.47.2.251.

Ludvigsen, J. A. L. (2021) 'Mega-events, expansion and prospects: Perceptions of Euro 2020 and its 12-country hosting format', *Journal of Consumer Culture*, pp. 80–98. doi: 10.1177/14695405211026045.

Luffarelli, J., Feiereisen, S. and Zoghaib, A. (2021) 'More innovative but less socially responsible: The

influence of using metaphors in marketing communications on product perception, choice, and adoption intention', *Psychology & Marketing*, 38(11), pp. 1973–1989. doi: https://doi.org/10.1002/mar.21539.

Maas, C. J. M. and Hox, J. J. (2004) 'Robustness issues in multilevel regression analysis', *Statistica Neerlandica*, 58(2), pp. 127–137. doi: 10.1046/j.0039-0402.2003.00252.x.

MacCallum, R. C., Browne, M. W. and Sugawara, H. M. (1996) 'Power analysis and determination of sample size for covariance structure modeling', *Psychological Methods*, 1(2), pp. 130–149. doi: 10.1037/1082-989X.1.2.130.

Maccallum, R. C. and Hong, S. (2010) 'Multivariate Behavioral Power Analysis in Covariance Structure Modeling Using GFI and AGFI', 3171(July 2014), pp. 37–41. doi: 10.1207/s15327906mbr3202.

MacKenzie, S. B., Lutz, R. J. and Belch, G. E. (1986) 'The Role of Attitude toward the Ad as a Mediator of Advertising Effectiveness: A Test of Competing Explanations', *Journal of Marketing Research*, 23(2), pp. 130–143. doi: 10.2307/3151660.

Madden, T. J. and Weinberger, M. G. (1982) 'The effects of humor on attention in magazine advertising', *Journal of Advertising*, 11(3), pp. 8–14. doi: 10.1080/00913367.1982.10672806.

Madden, T. and Weinberger, M. (1984) 'Humor in advertising: A practitioner view', *Journal of advertising research*, 24(4), pp. 23–29.

Mahadevan, N., Gregg, A. P. and Sedikides, C. (2020) 'The ups and downs of social life: Within-person variations in daily status and inclusion differentially predict self-regard and interpersonal behavior', *Journal of Personality*, (August 2019), pp. 1–18. doi: 10.1111/jopy.12559.

Malhotra, N. and and Birks, D. (2007) *Marketing Research: An Applied Orientation.* 4th editio. Hall., New Jersey: Prentice Hall.

Mandler, G. (1982) 'The structure of value: Accounting for tase', in Syndor Clark, M. and Fiske, S. T. (eds) *Affect and Cognition: The 17th Annual Carnegie Symposium*. New Jersey London: Lawrence Erlbaum Associates.

Markiewicz, D. (1974) 'Effects of Humor on Persuasion', *Sociometry*, 37(3), pp. 407–422.

Markus, K. A. (2010) 'Structural equations and causal explanations: Some challenges for causal SEM', *Structural Equation Modeling*, 17(4), pp. 654–676. doi: 10.1080/10705511.2010.510068.

Marteinson, P. (2006) *On the Problem of the Comic*. Ottawa: Legas Press.

Martin, R. A. *et al.* (2003) 'Individual differences in uses of humor and their relation to psychological well-being: Development of the humor styles questionnaire', *Journal of Research in Personality*, 37(1), pp. 48–75. doi: 10.1016/S0092-6566(02)00534-2.

Martin, R. a (2001) 'Humor, laughter, and physical health: methodological issues and research findings.', *Psychological bulletin*, 127(4), pp. 504–519. doi: 10.1037//0033-2909.127.4.504.

Maseeh, H. I. *et al.* (2022) 'Anti-consumption behavior: A meta-analytic integration of attitude behavior context theory and well-being theory', *Psychology & Marketing*, 39(12), pp. 2302–2327. doi: https://doi.org/10.1002/mar.21748.

Mathies, C., Chiew, T. M. and Kleinaltenkamp, M. (2016) 'The antecedents and consequences of humour for service', *Journal of Service Theory and Practice*, 26(2), pp. 137–162. doi: 10.1108/JSTP-09-2014-0187.

McAlister, A. R. and Cornwell, T. B. (2010) 'Children's brand symbolism understanding: Links to theory of mind and executive functioning', *Psychology & Marketing*, 27(3), pp. 203–228. doi: https://doi.org/10.1002/mar.20328.

McDonald, H. and Stewart, A. (2003) 'A comparison of online and postal data collection methods in marketing research', *Marketing Intelligence & Planning*, 21(2), p. 85. Available at: http://hdl.handle.net/10536/DRO/DU:30002241%0Ahttp://proquest.umi.com/pqdweb?did=353907521&Fmt=7&clientId=25620&RQT=309&VName=PQD.

McGhee, P. E. (1971a) 'Cognitive Development and Children' s Comprehension of Humor Author (s)', 42(1), pp. 123–138.

McGhee, P. E. (1971b) 'Cognitive Development and Children'S Comprehension of Humor', *Child Development*, 42, pp. 1–188. doi: 10.2307/1127069.

McGhee, P. E. (1976) 'Children's Appreciation of Humor: A Test of the Cognitive Congruency Principle', *Child Development*, 47(2), pp. 420–426. doi: 10.2307/1128797.

McGhee, P. E. (1979) *Humor, Its Origin and Development*. San Francisco: Francisco: W. H.

McGhee, P. E. (1983) 'The Role of Arousal and Hemispheric Lateralization in Humour', in *Handbook of Humor Research*. New York: Springer-Verlog.

McGraw, A. P. and Warren, C. (2010) 'Benign Violations: Making Immoral Behavior Funny', *Psychological Science*, 21(8), pp. 1141–1149. doi: 10.1177/0956797610376073.

McLachlan, G. J. (1999) 'Mahalanobis Distance', *Resonance*, (June). doi:

10.4135/9781412983907.n1108.

McQuarrie, E. F. and Mick, D. G. (1992) 'On resonance: A critical pluralistic inquiry into advertising rhetoric', *Journal of consumer research*, 19(2), pp. 180–197.

Megehee, C. M. and Woodside, A. G. (2010) 'Creating visual narrative art for decoding stories that consumers and brands tell', *Psychology & Marketing*, 27(6), pp. 603–622. doi: https://doi.org/10.1002/mar.20347.

Melewar, T. C. (2003) 'Determinants of the corporate identity construct: A review of the literature', *Journal of Marketing Communications*, 9(4), pp. 195–220. doi: 10.1080/1352726032000119161.

Melewar, T. C. *et al.* (2017) 'Integrating identity, strategy and communications for trust, loyalty and commitment', *European Journal of Marketing*, 51(3), pp. 572–604. doi: 10.1108/EJM-08-2015-0616.

Melewar, T. C., Bassett, K. and Simes, C. (2006) 'The role of communication and visual identity in modern organisations', *Corporate Communications*, 11(2), pp. 138–147. doi: 10.1108/13563280610661679.

Melewar, T. C. and Jenkins, E. (2002) 'Defining the Corporate Identity Construct', *Corporate Reputation Review*, 5(1), pp. 76–90. doi: 10.1057/palgrave.crr.1540166.

Melewar, T. C. and Karaosmanoglu, E. (2006) 'Seven dimensions of corporate identity: A categorisation from the practitioners' perspectives', *European Journal of Marketing*, 40(7–8), pp. 846–869. doi: 10.1108/03090560610670025.

Melewar, T. C., Karaosmanoglu, E. and Paterson, D. (2005) 'Corporate identity: Concept, components and contribution', *Journal of General Management*, 31(1), pp. 59–81. doi: 10.1177/030630700503100104.

Melnyk, V. *et al.* (2011) 'To think or not to think: The effect of cognitive deliberation on the influence of injunctive versus descriptive social norms', *Psychology & Marketing*, 28(7), pp. 709–729. doi: https://doi.org/10.1002/mar.20408.

Mesmer-Magnus, J., Glew, D. J. and Viswesvaran, C. (2012) *A meta-analysis of positive humor in the workplace*, *Journal of Managerial Psychology*. doi: 10.1108/02683941211199554.

Middleton, K. *et al.* (2022) 'How consumers subvert advertising through rhetorical institutional work', *Psychology & Marketing*, 39(3), pp. 634–646. doi: https://doi.org/10.1002/mar.21612.

Miller, G. (2011) *The mating mind: How sexual choice shaped the evolution of human nature*. Anchor.

Miller, K. (2007) *Communication theories : perspectives, processes, and contexts*. Second. Beijing: Peking University Press.

Miniero, G., Rurale, A. and Addis, M. (2014) 'Effects of Arousal, Dominance, and Their Interaction on Pleasure in a Cultural Environment', *Psychology & Marketing*, 31(8), pp. 628–634. doi: https://doi.org/10.1002/mar.20723.

Mitchell, A. A. and Olson, J. C. (1981) 'Are Product Attribute Beliefs the Only Mediator of Advertising Effects on Brand Attitude?', 18(3), pp. 318–332. Available at: http://www.jstor.org/stable/3150973.%0AAccessed:

Mohr, H. and Walter, Z. (2019) 'Formation of Consumers' Perceived Information Security: Examining the Transfer of Trust in Online Retailers', *Information Systems Frontiers*, 21(6), pp. 1231–1250. doi: 10.1007/s10796-019-09961-7.

Moisieiev, D., Dimitriu, R. and Jain, S. P. (2020) 'So happy for your loss: Consumer schadenfreude increases choice satisfaction', *Psychology & Marketing*, 37(11), pp. 1525–1538. doi: https://doi.org/10.1002/mar.21399.

Mōri, Y. (2019) 'Lukewarm Nationalism: The 2020 Tokyo Olympics, Social Media and Affective Communities', *International Journal of Japanese Sociology*, 28(1), pp. 26–44. doi: 10.1111/ijjs.12093.

Morreall, J. (1983) *Taking Laughter Seriously*. Albany: State University of New Yourk Press.

Morris, J. D., Woo, C. and Singh, A. J. (2005) 'Elaboration likelihood model: A missing intrinsic emotional implication', *Journal of Targeting, Measurement and Analysis for Marketing*, 14(1), pp. 79–98. doi: 10.1057/palgrave.jt.5740171.

Mulkay, M. J. (1988) *On humour : its nature and its place in modern society.* Cambridge : Polity Press, 1988. Available at: http://search.ebscohost.com/login.aspx?direct=true&db=cat01883a&AN=uea.000651078&site=eds-live&scope=site.

Murphy, S. T. and Zajonc, R. (1993) 'Affect, Cognition, and Awareness: Affective Priming with Optimal and Suboptimal Stimulus Exposures.', *Journal of Personality and Social Psychology*, 64(5), pp. 723–739.

Navarro, J., Arrieta, C. and Ballén, C. (2007) 'An approach to the study of dynamics of work motivation using the diary method', *Nonlinear Dynamics, Psychology, and Life Sciences*, 11(4), pp. 473–498.

Neudecker, N. *et al.* (2014) 'Message Reframing in Advertising', *Psychology & Marketing*, 31(11), pp.

946–957. doi: https://doi.org/10.1002/mar.20745.

Newton, J. D., Wong, J. and Newton, F. J. (2016) 'Listerine – for the bridesmaid who's never a bride: Disparaging humour increases brand attitude and recall among the powerless', *European Journal of Marketing*, 50(7–8), pp. 1137–1158. doi: 10.1108/EJM-06-2015-0321.

Nezlek, J. B. and Derks, P. (2001) 'Use of humor as a coping mechanism, psychological adjustment, and social interaction', *Humor - International Journal of Humor Research*, 14(4), pp. 395–413. doi: 10.1515/humr.2001.011.

Nguyen, B. *et al.* (2015) 'Brand innovation and social media: Knowledge acquisition from social media, market orientation, and the moderating role of social media strategic capability', *Industrial Marketing Management*, 51, pp. 11–25. doi: 10.1016/j.indmarman.2015.04.017.

Nikfar, F., Abdolvand, M. A. and Heydarzadeh, K. (2016) 'EFFECTS OF HUMOR APPEAL , THE PRODUCT INVOLVEMENT DEGREE AND GENDER ON ATTITUDES TOWARDS ADS AND ATTITUDES TOWARDS BRAND', 7, pp. 260–265.

Nikolinakou, A. and King, K. W. (2018) 'Viral video ads: Emotional triggers and social media virality', *Psychology & Marketing*, 35(10), pp. 715–726. doi: https://doi.org/10.1002/mar.21129.

Nikolova, H. (2023) 'Marketing in an identity-threatened world: Consumer coping strategies and indulgent consumption', *Psychology & Marketing*, 40(2), pp. 408–426. doi: https://doi.org/10.1002/mar.21763.

Nilsen, A. P. (2001) 'Newsletter', 4.

Nirenburg, S. and Raskin, V. (2004) *Ontological semantics*. Mit Press.

No author (2018) *Chi-Square Calculator*, *Mathisfun.com*. Available at: https://www.mathsisfun.com/data/chi-square-calculator.html (Accessed: 5 January 2023).

Núñez-Barriopedro, E., Klusek, K. G. and Tobar-Pesántez, L. (2019) 'The effectiveness of humor in advertising: Analysis from an international scope', *Academy of Strategic Management Journal*, 18(4), pp. 1–11.

O'Brien, D. (2013) 'Does Plato refute Parmenides?', *Plato's 'Sophist' Revisited*, (1991), pp. 117–156. doi: 10.1515/9783110287134.117.

O'Donohoe, S. O. (2006) 'Raiding the postmodern pantry:Advertising intertextuality and the young adult audience', *European Journal of Marketing*, 31(3/4), pp. 234–254.

O'Shannon, D. (2012) *What are You Laughing At?: A Comprehensive Guide to the Comedic Event*. A&C Black.

Ogden, B. H. (2022) 'A Psychoanalytic Perspective On Reading Literature: Reading The Reader', *The International Journal of Psychoanalysis*, 103(1), pp. 236–240. doi: 10.1080/00207578.2021.2007774.

Olin, L. (2016) 'Questions for a theory of humor', *Philosophy Compass*, 11(6), pp. 338–350. doi: 10.1111/phc3.12320.

Olsson, A. and Ochsner, K. N. (2008) 'The role of social cognition in emotion', *Trends in Cognitive Sciences*, 12(2), pp. 65–71. doi: 10.1016/j.tics.2007.11.010.

Olsson, U. H. *et al.* (2000) 'The performance of ML, GLS, and WLS estimation in structural equation modeling under conditions of misspecification and nonnormality', *Structural Equation Modeling*, 7(4), pp. 557–595. doi: 10.1207/S15328007SEM0704_3.

Oppenheim, A. N. (1992) *Questionnaire Design, Interviewing and Attitude Publishers., Measurement.* London: Pinter Publishers.

Oring, E. (2008) 'Humor in anthropology and folklore', *The primer of humor research*, pp. 183–210.

Osborne, J. W. and Overbay, A. (2004) 'The power of outliers (and why researchers should ALWAYS check for them)', *Practical Assessment, Research and Evaluation*, 9(6).

Palmer, M. J. (2003) *Taking humour seriously*. Routledge.

Papousek, I. *et al.* (2017) 'The Use of Bright and Dark Types of Humour is Rooted in the Brain', *Scientific Reports*, 7(January), p. 42967. doi: 10.1038/srep42967.

Paton, G. E. C. (1988) '12 In Search of Literature on the Sociology of Humour: A Sociobibliographical Afterword', *Humour in Society: Resistance and Control*, p. 260.

Patterson, A., Khogeer, Y. and Hodgson, J. (2013) 'How to create an influential anthropomorphic mascot: Literary musings on marketing, make-believe, and meerkats.', *Journal of Marketing Management*, 29(1–2), pp. 69–85. Available at: http://10.0.4.56/0267257X.2012.759992.

Pedersen, C. L. (2021) 'Empathy-based marketing', *Psychology & Marketing*, 38(3), pp. 470–480. doi: https://doi.org/10.1002/mar.21448.

De Pelsmacker, P. and Geuens, M. (1999) 'The advertising effectiveness of different levels of intensity of humour and warmth and the moderating role of top of mind awareness and degree of product use.', *Journal of Marketing Communications*, 5(3), pp. 113–129. Available at:

http://10.0.4.56/135272699345626.

De Pelsmacker, P., Geuens, M. and Anckaert, P. (2002) 'Media context and advertising effectiveness: The role of context appreciation and context/ad similarity', *Journal of Advertising*, 31(2), pp. 47–61. doi: 10.1080/00913367.2002.10673666.

Perchtold, C. M. *et al.* (2019) 'Humorous cognitive reappraisal: More benign humour and less "dark" humour is affiliated with more adaptive cognitive reappraisal strategies', *PLoS ONE*, 14(1), pp. 1–16. doi: 10.1371/journal.pone.0211618.

Perks, L. G. (2012) 'The ancient roots of humor theory', *Humor*, 25(2), pp. 119–132. doi: 10.1515/humor-2012-0007.

Pessoa, L. (2008) 'On the relationship between emotion and cognition', *Nature Reviews Neuroscience*, 9(2), pp. 148–158. doi: 10.1038/nrn2317.

Pessoa, L. and Adolphs, R. (2010) 'Emotion processing and the amygdala: from a "low road" to "many roads" of evaluating biological significance', *Nature Reviews - Neuroscience*, 11, pp. 733–782.

Petrescu, M., Korgaonkar, P. and Gironda, J. (2015) 'Viral Advertising: A Field Experiment on Viral Intentions and Purchase Intentions', *Journal of Internet Commerce*, 14(3), pp. 384–405. doi: 10.1080/15332861.2015.1080057.

Petty, R. . and Cacioppo, J. . (1986) 'The elaboration likelihood model of persuasion', *Advances in Experimental Social Psychology*, 19, pp. 1–24.

Petty, R. D. (2009) 'Brand parody products: is the harm worth the howl?', *Journal of Consumer Marketing*, 26(2), pp. 64–65. Available at: http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=41019916&authtype=sso&custid=s8993828&site=ehost-live.

Piaget, J. (1962) *Play, Dreams and Imitation in Childhood*. New Yourk: WW Norton and Company.

Piaget, J. (1971) *Biology and knowledge: an essay on the relations between organic regulations and cognitive processes. LK - https://uea.on.worldcat.org/oclc/1329663*, *TA - TT* -. Edinburgh SE - xii, 384 pages illustrations 23 cm: Edinburgh University Press.

Piantadosi, S. T., Tily, H. and Gibson, E. (2012) 'The communicative function of ambiguity in language', *Cognition*, 122(3), pp. 280–291. doi: 10.1016/j.cognition.2011.10.004.

Piata, A. (2016) 'When metaphor becomes a joke: Metaphor journeys from political ads to internet memes', *Journal of Pragmatics*, 106, pp. 39–56. doi: 10.1016/j.pragma.2016.10.003.

Piccinini, G. (2004) 'Functionalism, computationalism, and mental states', *Studies in History and Philosophy of Science Part A*, 35(4), pp. 811–833. doi: 10.1016/j.shpsa.2004.02.003.

Plato (1925) *Politicus, Philaebus, Ion*. Edited by William Heinemann Ltd and Harvard University Press. London; Cambridge: William Heinemann Ltd; Harvard University Press.

Poels, K. and Dewitte, S. (2019) 'The Role of Emotions in Advertising: A Call to Action', *Journal of Advertising*, 48(1), pp. 81–90. doi: 10.1080/00913367.2019.1579688.

Polimeni, J. and Reiss, J. P. (2006) 'The First Joke: Exploring the Evolutionary Origins of Humor', *Evolutionary Psychology*, 4, pp. 347–366. doi: ISSN 1474-7049.

Popper, K. (1972) *Objective Knowledge: An evolutionary approach*. Oxford: Oxford University Press.

Posen, I. S. (1974) 'Pranks and practical jokes at children's summer camps', *Southern Folklore Quarterly*, 38(4), pp. 299–309.

Potter, G. (2017) *The Philosophi of Social Science New Perspectives*. Second Efi. London and New York: Routledge.

Pouthier, V. (2017) 'Griping and Joking as Identification Rituals and Tools for Engagement in Cross-Boundary Team Meetings', *Organization Studies*, 38(6), pp. 753–774. doi: 10.1177/0170840616685358.

Punch, K. (2003) *Survey Research the basics.* 1st edn. London: Sage Publications.

Pundt, A. and Herrmann, F. (2015) 'Affiliative and aggressive humour in leadership and their relationship to leader-member exchange', *Journal of Occupational and Organizational Psychology*, 88(1), pp. 108–125. doi: 10.1111/joop.12081.

Putnam, H. (1981) *Reason, Truth and History*. Cambridge: Cambridge University Press. doi: DOI: 10.1017/CBO9780511625398.

Radcliffe-Brown, A. A. R. (1940) 'On Joking Relationships Published by : Cambridge University Press on behalf of the International African Institute Stable URL : http://www.jstor.org/stable/1156093', 13(3), pp. 195–210.

Raskin, V. (1985a) *Semantic mechanisms of humor.* Dordrecht ; Lancaster : Reidel, c1985 (Synthese language library: v. 24). Available at: http://search.ebscohost.com/login.aspx?direct=true&db=cat01883a&AN=uea.000804956&authtype=sso&custid=s8993828&site=eds-live&scope=site.

Raskin, V. (1985b) 'Semantic Mechanisms of Humour', in 10, D. R. (ed.). Dordrech.

Raskin, V. (2002) 'Computational Humour and Ontological Semantics', in Stock, O., Strapparava, C., and Nijholt, A. (eds) *The April Fool's Day Workshop on computational Humour. TWLT 20: Twente Workshop on Language Technology, an Initiative of HAHAacronym*. Trento: European Project IST-2000-30039.

Raskin, V. (2008) *(edited by) The Primer of Humour Research*. Edited by M. de Gruyter. Berlin New York.

Raskin, V. and Triezenberg, K. E. (2003) 'Getting sophisticated about sophistication: Inference at the service of humor', in *ISHS 2003: International Conference on Humor Research, NEIU at Chicago, Illinois*.

Reichstein, T. and Brusch, I. (2019) 'The decision-making process in viral marketing—A review and suggestions for further research', *Psychology & Marketing*, 36(11), pp. 1062–1081. doi: https://doi.org/10.1002/mar.21256.

Reis, H. T. and Gable, S. L. (2000) 'Event-sampling methods', in Judd, H. T. R. & C. (ed.) *Handbook of research methods in social psychology*. New York: NY: Cambridge University Press, pp. 190–222.

Rejer, I. and Jankowski, J. (2017) 'Brain activity patterns induced by interrupting the cognitive processes with online advertising', *Cognitive Processing*, 18(4), pp. 419–430. doi: 10.1007/s10339-017-0815-8.

Roberts, A. (2016) 'Humour is a funny thing', *British Journal of Aesthetics*, 56(4), pp. 355–366. doi: 10.1093/aesthj/ayw046.

Roberts, C. W. (2000) 'A conceptual framework for quantitative text analysis: On joining probabilities and substantive inferences about texts', *Quality and Quantity*, 34(3), pp. 259–274. doi: 10.1023/A:1004780007748.

Robinson, D. T. and Smith-Lovin, L. (2001) 'Getting a Laugh: Gender, Status, and Humor in Task Discussions', *Social Forces VO - 80*, (1), p. 123. Available at: http://search.ebscohost.com/login.aspx?direct=true&db=edsjsr&AN=edsjsr.2675534&site=eds-live&scope=site.

Rodríguez-Muñoz, A. *et al.* (2020) 'Short-term trajectories of workplace bullying and its impact on strain: A latent class growth modeling approach', *Journal of Occupational Health Psychology*, 25(5), pp. 345–356. doi: 10.1037/ocp0000232.

Romundstad, S. *et al.* (2016) 'A 15-year follow-up study of sense of humor and causes of mortality:

The Nord-Trøndelag Health study', *Psychosomatic Medicine*, 78(3), pp. 345–353. doi: 10.1097/PSY.0000000000000275.

Rossolatos, G. (2019) 'Negative brand meaning co-creation in social media brand communities: A laddering approach using NVivo', *Psychology & Marketing*, 36(12), pp. 1249–1266. doi: https://doi.org/10.1002/mar.21273.

Rothbart, M. K. (1973) 'Laughter in young children.', *Psychological bulletin*, 80(3), pp. 247–256. doi: 10.1037/h0034846.

Ruch, W. *et al.* (1991) 'Cross-national comparison of humor categories: France and Germany', *Humor*, 4(3–4), pp. 391–414. doi: 10.1515/humr.1991.4.3-4.391.

Ruch, W. (1993) 'Exhilaration and Humor', *The Handbook of Emotion*, 001149(JANUARY 1993), pp. 605–616. doi: 10.5167/uzh-77841.

Ruch, W. *et al.* (2011) 'Cheerfulness and everyday humorous conduct', *Anuarul Institutului de Istorie» George Baritiu «din Cluj-Napoca-Seria HUMANISTICA*, 9(9), pp. 67–87.

Ruch, W., Köhler, G. and van Thriel, C. (1997) 'To be in good or bad humour: Construction of the state form of the State-Trait-Cheerfulness-inventory—STCI', *Personality and Individual Differences*, 22(4), pp. 477–491. doi: 10.1016/S0191-8869(96)00231-0.

Ruch, W., Köhler, G. and Van Thriel, C. (1997) 'To be in good or bad humour: Construction of the state form of the State-Trait-Cheerfulness-Inventory-STCI', *Personality and Individual Differences*, 22(4), pp. 477–491. doi: 10.1016/S0191-8869(96)00231-0.

Russell, C. A. and Stern, B. B. (2006) 'Consumers, Characteristics, ans Products: A Balance Model of Sitcom Product Placement Effects', *Journal of Advertising*, 35(1), pp. 7–21. doi: 10.2753/JOA0091-3367350101.

Sabri, O. and Michel, G. (2014) 'When Do Advertising Parodies Hurt? The Power of Humor and Credibility In Viral Spoof Advertisements.', *Journal of Advertising Research*, 54(2), pp. 233–247. Available at: http://10.0.9.197/JAR-54-2-233-247.

Sandstrom, M. J. and Cillessen, A. H. N. (2003) 'Sociometric Status and Children's Peer Experiences: Use of the Daily Diary Method', *Merrill-Palmer Quarterly*, 49(4), pp. 427–452. doi: 10.1353/mpq.2003.0025.

Santos, S., Gonçalves, H. M. and Teles, M. (2023) 'Social media engagement and real-time marketing: Using net-effects and set-theoretic approaches to understand audience and content-related effects',

Psychology & Marketing, 40(3), pp. 497–515. doi: https://doi.org/10.1002/mar.21756.

Sar, S., Duff, B. R. L. and Anghelcev, G. (2011) 'If you feel it now you will think it later: The interactive effects of mood over time on brand extension evaluations', *Psychology & Marketing*, 28(6), pp. 561–583. doi: https://doi.org/10.1002/mar.20401.

Saunders, M., Lewis, P. and Thornhill, A. (2012) *Research Methods for Business Students*. 6th ed. Edited by P. Education. Essex:

Scarry, E. (1999) *On Beauty and Being Just*. Princeton: Princeton University Press.

Schembri, S., Merrilees, B. and Kristiansen, S. (2010) 'Brand consumption and narrative of the self', *Psychology & Marketing*, 27(6), pp. 623–637. doi: https://doi.org/10.1002/mar.20348.

Schwartz, S. J. *et al.* (2021) 'Toward a micro-level perspective on acculturation among U.S. Hispanic college students: A daily diary study', *Journal of Clinical Psychology*, 77(1), pp. 121–144. doi: 10.1002/jclp.23009.

Septianto, F., Pontes, N. and Tjiptono, F. (2022) 'The persuasiveness of metaphor in advertising', *Psychology & Marketing*, 39(5), pp. 951–961. doi: https://doi.org/10.1002/mar.21633.

Shibata, M., Terasawa, Y. and Umeda, S. (2014) 'Integration of cognitive and affective networks in humor comprehension', *Neuropsychologia*, 65, pp. 137–145. doi: 10.1016/j.neuropsychologia.2014.10.025.

Shiffler, R. E. (1988) 'Maximum Z Scores and Outliers', *The American Statistician*, 42(1), pp. 79–80. doi: 10.1080/00031305.1988.10475530.

Shultz, T. R. (1974a) 'Development of the Appreciation of Riddles Author (s): Thomas R . Shultz Published by : Wiley on behalf of the Society for Research in Child Development Stable URL : http://www.jstor.org/stable/1127755 REFERENCES Linked references are available on JSTOR', 45(1), pp. 100–105.

Shultz, T. R. (1974b) 'Development of the Appreciation of Verbal Jokes 1', *Developmental Psychology*, 10(1), pp. 13–20. doi: 10.1037/h0035549.

Singh, K. and Upadhyaya, S. (2012) 'Outlier Detection: Applications And Techniques.', *International Journal of Computer …*, 9(1), pp. 307–323. Available at: http://search.ebscohost.com/login.aspx?direct=true&profile=ehost&scope=site&authtype=crawler&jrnl=16940784&AN=73150560&h=i4TJm6g8nLsTJhcyMBIvsybVnJ9dDMRPUQ7ZLZ8lBk76dVDDRAgMCc258zyyjrF/zu+MvvsObGzF2pYu0H1DPg==&crl=c.

Sircello, G. (1975) *New Theory of Beauty.* Edited by P. U. Press. Princeton.

Sircello, G. (1989) *Love and Beauty*. Edited by P. U. Press. Princeton.

Smith, A. *et al.* (2003) 'Retail loyalty schemes: Results from a consumer diary study', *Journal of Retailing and Consumer Services*, 10(2), pp. 109–119. doi: 10.1016/S0969-6989(02)00007-3.

Soderberg, C. K. *et al.* (2015) 'The Effects of Psychological Distance on Abstraction: Two Meta-Analyses', *Psychological Bulletin*, 141(3), pp. 525–548. doi: 10.1037/bul0000005.supp.

Solé, R. V. and Seoane, L. F. (2015) 'Ambiguity in language networks', *Linguistic Review*, 32(1), pp. 5–35. doi: 10.1515/tlr-2014-0014.

Sourina, O. and Liu, Y. (2011) 'A fractal-based algorithm of emotion recognition from EEG using arousal-valence model', in *BIOSIGNALS 2011 - Proceedings of the International Conference on Bio-Inspired Systems and Signal Processing*, pp. 209–214. doi: 10.5220/0003151802090214.

Speck, P. S. (1987) 'On Humour and Humour in Advertising'.

Speck, P. S. (1991) 'The Humorous Message Taxonomy: A Framework for the Study of Humorous Ads', *Current Issues and Research in Advertising*, 13(1–2), pp. 1–44. doi: 10.1080/01633392.1991.10504957.

Speier, H. (1998) 'Wit and Politics: An Essay on Power and Laughter', *American Journal of Sociology*, 103(5), pp. 1352–1401. doi: 10.1086/231355.

Spencer, H. (1860) 'The Psychology of Laughter', p. 359 402.

Spencer, H. (1875) 'The physiology of laughter.', in *Illustrations of universal progress: A series of discussions.* New York, NY, US: D Appleton & Company, pp. 194–209. doi: 10.1037/12203-004.

Spielmann, N. (2014) 'How funny was that? Uncovering humor mechanisms', *European Journal of Marketing*, 48(9/10), pp. 1892–1910. doi: 10.1108/EJM-07-2012-0393.

Stathopoulou, A. *et al.* (2017) 'Consumer Branded #Hashtag Engagement: Can Creativity in TV Advertising Influence Hashtag Engagement?', *Psychology & Marketing*, 34(4), pp. 448–462. Available at: http://10.0.3.234/mar.20999.

Stern, B. B. (1993) 'Feminist Literary Criticism and the Deconstruction of Ads: A Postmodern View of Advertising and Consumer Responses', *Journal of Consumer Research*, 19(4), p. 556. doi: 10.1086/209322.

Sternthal, B. and Craig, S. C. (1973) 'Humor in Advertising', *Journal of Marketing*, 37(4), pp. 12–18. doi: 10.2307/1250353.

Stockman, N. (1983) *Antipositivist Theories of the Sciences*. New York: Springer-Sciences.

Strick, M. *et al.* (2009) 'Humor in advertisements enhances product liking by mere association.', *Journal of Experimental Psychology: Applied*, 15(1), pp. 35–45. doi: 10.1037/a0014812.

Strick, M. *et al.* (2010) 'Humor in the eye tracker: attention capture and distraction from context cues.', *The Journal of general psychology*, 137(1), pp. 37–48. doi: 10.1080/00221300903293055.

Strick, M. *et al.* (2012) 'Those who laugh are defenseless: How humor breaks resistance to influence.', *Journal of Experimental Psychology: Applied*, 18(2), pp. 213–223. doi: 10.1037/a0028534.

Strick, M. *et al.* (2013) 'Humour in advertising: An associative processing model', *European Review of Social Psychology*, 24(1), pp. 32–69. doi: 10.1080/10463283.2013.822215.

Sun, T., Tai, Z. and Tsai, K.-C. (2010) 'Perceived ease of use in prior e-commerce experiences: A hierarchical model for its motivational antecedents', *Psychology & Marketing*, 27(9), pp. 874–886. doi: https://doi.org/10.1002/mar.20362.

Sung, B., Vanman, E. J. and Hartley, N. (2022) 'Revisiting (dis)fluency: Metacognitive difficulty as a novelty cue that evokes feeling-of-interest', *Psychology & Marketing*, 39(8), pp. 1451–1466. doi: https://doi.org/10.1002/mar.21664.

Suslov, I. M. (1992a) 'Computer model of a "Sense of humour" II: Realization in neuronal networks', *Biophysics*, 37(2), pp. 249–258.

Suslov, I. M. (1992b) 'COMPUTER MODEL OFA "SENSE OF HUMOUR" I. GENERAL ALGORITHM', *Biophysics*, 37(2), pp. 242–248.

Svebak, S. (1974) 'Revised questionnaire on the sense of humor', *Scandinavian Journal of Psychology*, 15(1), pp. 328–331. doi: 10.1111/j.1467-9450.1974.tb00597.x.

Svebak, S. (1996) 'The development of the Sense of Humor Questionnaire: From SHQ to SHQ-6', *Humor: International Journal of Humor Research*, 9, pp. 341-361.

Svebak, S. (2010) 'The Sense of Humor Questionnaire: Conceptualization and Review of 40 Years of Findings in Empirical Research', *Europe's Journal of Psychology*, 6(3), pp. 288–310. doi: 10.5964/ejop.v6i3.218.

Svebak, S., Romundstad, S. and Holmen, J. (2010) 'A 7-year prospective study of sense of humor and mortality in an adult county population: The hunt-2 study', *International Journal of Psychiatry in Medicine*, 40(2), pp. 125–146. doi: 10.2190/PM.40.2.a.

Sykes, A. J. M. (1966) 'Joking relationships in an industrial setting.', *American Anthropologist*, 68, pp. 188–193. doi: 10.1525/aa.1966.68.1.02a00250.

Taber, K. S. (2018) 'The Use of Cronbach's Alpha When Developing and Reporting Research Instruments in Science Education', *Research in Science Education*, 48(6), pp. 1273–1296. doi: 10.1007/s11165-016-9602-2.

Tamietto, M. and De Gelder, B. (2010) 'Neural bases of the non-conscious perception of emotional signals', *Nature Reviews Neuroscience*, 11(10), pp. 697–709. doi: 10.1038/nrn2889.

Tarabashkina, L., Quester, P. and Tarabashkina, O. (2018) 'Perceived informative intention in advertising and its attenuating effect on persuasion attribution among children', *Psychology & Marketing*, 35(10), pp. 778–789. doi: https://doi.org/10.1002/mar.21134.

Terre Blanche, M. J., Durrheim, K. and Painter, D. (2006) *Research in practice : applied methods for the social sciences*. Second rev. Cape Town: UCT Press,.

Thoma, D. and Wechsler, J. (2021) 'Older and more personal: Stronger links between brand-name recall and brand-related autobiographical memories in older consumers', *Psychology & Marketing*, 38(9), pp. 1384–1392. doi: https://doi.org/10.1002/mar.21533.

Thorson, J. A. and Powell, F. C. (1993) 'Sense of humor and dimensions of personality', *Journal of Clinical Psychology*, pp. 799–809. doi: 10.1002/1097-4679(199311)49:6<799::AID-JCLP2270490607>3.0.CO;2-P.

Titus, P. A. (2018) 'Exploring creative marketing thought: Divergent ideation processes and outcomes', *Psychology & Marketing*, 35(3), pp. 237–248. doi: https://doi.org/10.1002/mar.21083.

Tomarken, A. J. and Waller, N. G. (2005) 'Structural equation modeling: Strengths, limitations, and misconceptions', *Annual Review of Clinical Psychology*, 1, pp. 31–65. doi: 10.1146/annurev.clinpsy.1.102803.144239.

Travis, D. (2001) 'BRANDING IN THE DIGITAL AGE. (cover story)', *Journal of Business Strategy*, 22(3), p. 14. doi: 10.1108/eb040166.

Trope, Y. and Liberman, N. (2010) 'Construal-Level Theory of Psychological Distance', *Psychological Review*, 117(2), pp. 440–463. doi: 10.1037/a0018963.

Tsakona, V. (2017) 'Genres of Humor', in Attardo, S. (ed.) *The Routledge Handbook of Language and Humor*. New York and London: Routledge, pp. 489–503.

Tucker, L. and Melewar, T. C. (2005) 'Corporate Reputation and Crisis Management: The Threat and

Manageability of Anti-corporatism', *Corporate Reputation Review*, 7(4), pp. 377–387. doi: 10.1057/palgrave.crr.1540233.

Urban-Wojcik, E. J. *et al.* (2020) 'Emodiversity, health, and well-being in the Midlife in the United States (MIDUS) daily diary study.', *Emotion*. doi: 10.1037/emo0000753.

Vahle-Hinz, T., Baethge, A. and Van Dick, R. (2019) 'Beyond one work day? A daily diary study on causal and reverse effects between experienced workplace incivility and behaving rude towards others', *European Journal of Work and Organizational Psychology*, 28(2), pp. 272–285. doi: 10.1080/1359432X.2019.1576633.

Vermeir, I., De Bock, T. and Van Kenhove, P. (2017) 'The Effectiveness of Fear Appeals Featuring Fines versus Social Disapproval in Preventing Shoplifting Among Adolescents', *Psychology & Marketing*, 34(3), pp. 264–274. doi: https://doi.org/10.1002/mar.20987.

Wach, D. *et al.* (2020) 'Entrepreneurs' stressors and well-being: A recovery perspective and diary study', *Journal of Business Venturing*, (March), p. 106016. doi: 10.1016/j.jbusvent.2020.106016.

Wang, S. S. and Chou, H. Y. (2019) 'Effects of game-product congruity on in-app interstitial advertising and the moderation of media-context factors', *Psychology and Marketing*, 36(3), pp. 229–246. doi: 10.1002/mar.21174.

Warren, C., Carter, E. P. and McGraw, A. P. (2019) 'Being funny is not enough: the influence of perceived humor and negative emotional reactions on brand attitudes', *International Journal of Advertising*, 38(7), pp. 1025–1045. doi: 10.1080/02650487.2019.1620090.

Warren, C. and McGraw, A. (2015) 'Differentiating What Is Humorous From What Is Not.', *Journal of personality and social psychology*, 110(3), pp. 407–430. doi: 10.1037/pspi0000041.

Warren, C. and Mcgraw, A. P. (2015) 'Journal of Personality and Social Psychology Differentiating What Is Humorous From What Is Not Differentiating What Is Humorous From What Is Not', *Journal of Personality and Social Psychology*. doi: 10.1037/pspi0000041.

Wasow, T., Perfors, A. and Beaver, D. (2005) 'The Puzzle of Ambiguity', *Morphology and the Web of grammar: Essays in memory of Steven G. Lapointe*, pp. 1–18.

Wendt, L. M., Griesbaum, J. and Kölle, R. (2016) 'Product advertising and viral stealth marketing in online videos', *Aslib Journal of Information Management*, 68(3), pp. 250–264. doi: 10.1108/AJIM-11-2015-0174.

Wenninger, H., Krasnova, H. and Buxmann, P. (2019) 'Understanding the role of social networking sites

in the subjective well-being of users: a diary study', *European Journal of Information Systems*, 28(2), pp. 126–148. doi: 10.1080/0960085X.2018.1496883.

Wentzel, D., Tomczak, T. and Herrmann, A. (2010) 'The moderating effect of manipulative intent and cognitive resources on the evaluation of narrative ads', *Psychology & Marketing*, 27(5), pp. 510–530. doi: https://doi.org/10.1002/mar.20341.

Whittaker, T. A. (2012) 'Using the modification index and standardized expected parameter change for model modification', *Journal of Experimental Education*, 80(1), pp. 26–44. doi: 10.1080/00220973.2010.531299.

Wild, B. *et al.* (2003) 'Neural correlates of laughter and humour', *Brain*, 126(10), pp. 2121–2138. doi: 10.1093/brain/awg226.

Wilke, M. (1997) 'Desenex lightens up in $9.5 mil campaign.', *Advertising Age*, 68(20), p. 6. Available at: http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=9705222300&authtype=sso&custid=s8993828&site=ehost-live.

Wilson, C. J. *et al.* (2023) 'The cross-cultural generalizability of cognitive ability measures: A systematic literature review.', *Intelligence*, 98(March), p. 101751. doi: 10.1016/j.intell.2023.101751.

Wu, K. (2016) *YouTube Marketing: Legality of Sponsorship and Endorsements in Advertising*, *J. L. Bus. & Ethics*. doi: 10.3366/ajicl.2011.0005.

Xia, L. and Bechwati, N. N. (2010) 'Word of Mouse: The role of cognitive personalization in online consumer reviews', *Journal of Interactive Advertising*, 9(1), pp. 3–13. doi: 10.1080/15252019.2008.10722143.

Xu, T., Liu, M. and Wang, X. (2023) 'How humor is experienced: An embodied metaphor account', *Current Psychology*, 42(20), pp. 16674–16686. doi: 10.1007/s12144-022-02918-1.

Yang, H. C. and Wang, Y. (2015) 'Social Sharing of Online Videos: Examining American Consumers' Video Sharing Attitudes, Intent, and Behavior', *Psychology & Marketing*, 32(9), pp. 907–919. doi: https://doi.org/10.1002/mar.20826.

Yoon, H. J. (2018) 'Creating the mood for humor: arousal level priming in humor advertising', *Journal of Consumer Marketing*, 35(5), pp. 491–501. doi: 10.1108/JCM-01-2017-2074.

Zhang, Y. (1996) 'The Effect of Humor in Advertising: An Individual-Difference Perspective.', *Psychology & Marketing*, 13(6), pp. 531–545. Available at:

http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=11580074&authtype=sso&custid=s8993828&site=ehost-live.

Zijderveld, A. C. (1982) *Reality in a looking-glass: rationality through an analysis of traditional folly*. Routledge Kegan & Paul.

Ziv, A. (1979) 'Sociometry of Humor:Objectifying the Subjective', *Perceptual and Motor Skills*, (49), pp. 97–98.

Zucker, W. M. (1967) 'The clown as the lord of disorder', *Theology Today*, 24(3), pp. 306–317.

Zucker, W. M. . (1954) 'The Image of the Clown', *The Journal of Aesthetics and Art Criticism*, 12(3), pp. 310–317.

Zuo, B. (2020) 'Why does humor fail or occur unexpectedly? — an account of humor within an extended relevance theory', *Journal of Pragmatics*, 160, pp. 1–13. doi: 10.1016/j.pragma.2020.02.006.

Appendices

1- Recruiting email

EMAIL: BE A RESEARCHER IN HUMOUR

Hello,

I am pleased to offer you a restaurant voucher for two free main courses in exchange for taking part in my survey.

My academic interest is in humorous marketing communication. I need 10 minutes of your time for each day of the week (TO BE CONFIRMED). If you decide to take part, you will have to find an advert you find humorous (copying the link or taking a screenshot) and another that despite the humorous intention, you do not find funny. Each day you will have to upload such links and answer a few simple questions. The questionnaire itself will not take more than 5 min (TO BE CONFIRMED).

In exchange for your participation in the research, you will be rewarded with a voucher for two free main courses at Bella Italia Norwich Red Lion Street.

If you are interested, or if you know someone who may be, please contact me at M.Capasso@uea.ac.uk

Thank you for reading my email.

Regards

Marco Capasso

PhD student at Norwich Business School

2- Recruiting questionnaire (to be completed before the Monday of the survey)

LEGAL DISCLAIMER

Thank you for taking part in this survey.

This research project has been conducted by Marco Capasso, PhD student at NBS.
It is a Diary study where you are asked to answer a questionnaire daily for a week.

Your participation in this survey is voluntary. You may choose not to participate. If you decide to participate, you may withdraw at any time.
The procedure involves filling out the online questionnaire that will take approximately 5 minutes each day. Your response will be confidential, and I do not collect identifying information such as your name, or your IP address.
The email address is required for two main reasons. The first is to identify yourself across the next 7 surveys.
After these seven days, a restaurant voucher will be sent to you and the email address will be proof of identity. Therefore, your address will be shared with the management of Bella Italia Norwich Red Lion Street.
I will do my best to keep your information confidential. All data are stored in a password-protected electronic format. To help protect your confidentiality, the survey will not contain information other than your email address that will personally identify you. The results of this study will be used for scholarly purposes only and may be shared with UEA representative.

If you have any questions about the research study, please contact M.Capasso@uea.ac.uk.

Electronic CONSENT Selecting "agree" will indicate that:

- You have read the above information.
- You voluntarily agree to participate.
- Your survey will begin.

TASK DESCRIPTION

From tomorrow and for the following six days I will send you a link via email for the daily questionnaire.

Each questionnaire is broadly similar to the other days, with small changes to the questions. Your main task will be to collect an advert you find humorous and one that, despite its humorous intention, you do not find humorous.

WHAT IS HUMOUR?

Humour is something you find funny. Not necessarily hilarious or that makes you laugh, even if laughter can be seen as the highest level of humour.

WHAT IS MARKETING COMMUNICATION?

The most common is advertising, as in the picture below.

It does not necessarily have to be an advert. To keep it simple, you can upload any media content (from a video to a photo) that you find humorous and that presents a brand, a logo, or a product. it can be a social media video, a film scene, a photo, a billboard or whatever else you find humorous and has a marketing message embedded in it.

For example, the above scene from the film *The Hangover* (2009) shows a Monster® drink can. This is still a form of advertising.

Also, if on one of the days you do not accidentally find a humorous advert, you are allowed to search for it. It will be asked whether you found the advert accidentally or if you had to undertake an active search.

HOW TO UPLOAD?

I have tried to make the uploading process as easy as possible. You can either copy and paste the link to the adverts you choose, take a screenshot (for example, a film scene), or write a brief description (e.g. in the film *The Hangover* (2009), the guy wakes up on the floor with a chicken and a Monster drink can). In any case, if the element would not be easy to obtain, I would contact you via email, so please do not despair!

The most important thing is that you find humorous marketing messages and, hopefully, you have fun too!

Thank you again for taking part in my survey.

Now follow a few questions about yourself (I promise to keep it simple and short!)

3 – Table of operationalization of the recruiting questionnaire

Concept/Hypothesis	Construct	Scale	Typology of Answer	Source
6.3.1.1.1.1.1.1 Control variables 6.3.1.1.1.1.1.2 To quantify the generalities of the participants	Control Variables	1) What is your email address? 2) What is you date of birth? 3) What is your gender? 4) What is your highest level of education? 5) Which was the field of your education? 6) Occupational status 7) Job position	1. Open answer 2. MM/YYYY of birth 3. M/F/other specify 4. Multiple choice from high schools to PhD 5. Open answer 6. Multiple choice (student, unemployed, employed, other) 7. Open answer	N/A
Sense of Humour classification according to cognitive, emotional and socio-cognitive,	Independent variable	8) I easily recognize a mark of humorous intent. 9) If I want, I often find something humorous in most situations. 10) Persons who are always out to be funny are irresponsible types not to be relied 11) Humorists irritate me because they so blatantly revel in getting others to laugh 12) I am a mirthful person. 13) I easily smile and laugh.	7 points Likert scale from strongly - disagree -lightly disagree – neither disagree nor agree – lightly agree – agree - strongly agree	(Svebak, 1996)

4 – Table of operationalization of the daily task

Stait-Trait Cheerfulness Inventory *To measure daily shifts in participants' mood. The construct of cheerfulness, seriousness and bad mood are predicted to affect the appreciation of the humorous message and the advertising liking*	Cheerfulness	1) I am cheerful. 2) I feel great. 3) I am ready to have some fun.	7 points Likert scale from strongly - disagree -lightly disagree – neither disagree nor agree – lightly agree – agree - strongly agree	Adapted from Ruch, Köhler and Van Thriel (1997)
	Seriousness	4) I have a serious mental attitude. 5) I am in a pensive frame of mind. 6) My thoughts are profound.		Adapted from Ruch, Köhler and Van Thriel (1997)
	Bad Mood	7) I am in a bad mood. 8) I feel irritable. 9) I am in a crabby mental frame.		Adapted from Ruch, Köhler and Van Thriel (1997)
Sense of Humour questionnaire	Cognitive Sense of humour	10) I easily recognize a mark of humorous intent. 11) If I want, I often find something humorous in most situations.	7 points Likert scale from strongly - disagree -lightly disagree – neither disagree nor agree – lightly agree – agree - strongly agree	Adapted from Svebak (1996)
	Emotional Sense of humour	12) I am a mirthful person. 13) I easily smile and laugh.		Adapted from Svebak (1996)
	Social sense of humour	14) Persons who are always out to be funny are irresponsible types be relied upon. 15) Humorists irritate me because they so blatantly revel in getting others to laugh		Adapted from Svebak (1996)
Humorous File Upload To collect the humorous stimulus	Humorous File Upload	16) Please upload the file of the message you find humorous	Link upload box / description box	N/A
Nature of the finding To determine whether the stimulus was encountered accidentally or researched for the purpose	Typology of stimulus research	17) Did you find this message accidentally or via specific research?	Binomial choice	N/A
Salience To determine what is the salient humorous element	Salience	18) What is the element you find funny? (E.g. a pun, a facial expression, a sound etc.)	Open answer	N/A
Mechanisms of humour The scales quantify whether the appreciation of the humorous stimulus has stimulated cognitive, affective, or disparaging mechanism.	A-S	19) Cute – Non cute 20) "Feel-good" message – "Feel-bad" message (or positive feelings/negative feelings) 21) Entertaining – Non entertaining	7-points bipolar Likert scale	Adapted from Spielmann (2014)
	I-S	22) Initially uncomfortable – Initially comfortable 23) Easy to understand – Non easy to understand. 24) Quick to figure out – Takes time to figure out		Adapted from Spielmann (2014)

	Disparagement	25) Mocking – Non mocking … someone or something 26) Laughing with – Laughing at 27) Teasing – Non teasing		22 - (Vanden Bergh *et al.*, 2011) 23 - (Papousek *et al.*, 2017) 24 - (Keltner *et al.*, 2009)
Marketing message liking To Quantify the marketing message liking as dependent variable to be correlated to the mechanism and the moods.	Message Liking	28) Pleasant – Unplesant 29) Likeable – Non likeable 30) Not irritating – Irritating 31) Interesting – Uninteresting 32) Humorous – Non humorous		Adapted from (Chattopadhyay and Basu (1990b)
Upload of the non-humorous element To collect example of failing humorous marketing communications	Non-humorous upload	33) Please upload here the file you think has humorous intention but you do not find humorous	Link upload box / description box	N/A
Nature of the finding To determine whether the stimulus was encountered accidentally or researched for the purpose	Typology of stimulus research	Did you find this message accidentally or via specific research?	Binomial choice	N/A
Salience To determine what is the salient humorous element	Salience	34) What is the element you think is meant to be funny? (E.g. a pun, a facial expression, a sound etc.)	Open answer	N/A
Non-humorous nature To determine what is the reason the stimulus was not considered funny	Humour failure data collection	35) Why do you not find this element humorous?	Multiple choice: • It is offensive toward me or others. • It is difficult to understand/took too long to understand. • It is too simple/too silly • I no longer find it funny • Other Open answer box	• (Dore, 2018) • (Bell and Attardo, 2010), • (Petty and Cacioppo, 1986) • N/A

5 – List of the repeated stimuli

In white background the stimuli found humorous. Non-humorous one in dark background.

Number	Brand	Message link	Stimulus number	Participant	Why did you find it funny	Why did you not find it funny	specification of "other" option
1	Doritos	Ultrascan	8	A39M1E&T	All of it , the baby boy in mum's belly in particular		
			96	J17F1PHE	the context of the advert - doritos in an ultrasound		
			71	G46M1A&D	foetus wanting crisps	Other (specify)	it just didnt make me laugh. boring. but I dont like Doritos & I dont like kids so maybe thats why
			109	J29F2ARC	Very male humour	It is too simple/too silly	
			113	K34M1NCU	That the unborn baby wants the Dorito	It is too simple/too silly	
			194	S36F3ART	The baby reacting to doritos	I no longer find it funny	
			213	S45F1CHE	i think they meant to prove that everibody likes doritos, and they are irresistible	It is too simple/too silly	
2	Heineken	Wardrobe	9	A39M1E&T	The situation		
			133	L30M1OTH	A sound of lads going crazy for a room full of beer		
			47	E18F2ALE	The women being excited by the shoes whereas the men were excited by the beer	Other (specify)	Not exactly offensive but feels quite patronising towards women and mocking
			196	S36F3ART	The fact that the guys were so excited about a beer room	I no longer find it funny	
3	Cinesite	Haynes Beans	10	A39M1E&T	That he was a loppo at thend.after all that..		
			71	G46M1A&D	the thought of what happens to a fart on the moon		
			110	K34M1NCU	The fart at the end		
			197	S36F3ART	The monster/Alien was killing all the spacemen and one got away but then farted		
4		Baby crying in	10	A39M1E&T	final		

	Zazoo condoms	the supermarket	44	E18F2ALE	Realistic as kids regularly throw tantrums and can be extremely annoying and hard work so the idea of having to look sfter one is v effective		
			195	S36F3ART	The fact that the guy is regretting his life choice of having a child		
			216	S45F1CHE	Use the condoms and you will not have to deal with kids tantrums	Other (specify)	You should use condoms for many reasons not just for not having to deal with tantrums.
5	Chevrolet	graduation present	12	A39M1E&T	the exageration		
			100	J17F1PHE	car driving away?	Other (specify)	boring
6	m&m's	Danny DeVito	13	A39M1E&T	the sweet being happy of not being eaten		
			97	J17F1PHE	the actor/bus		
7	Compare the market	new neighbour	17	C64M2LAN	reference to previous adverts (meerkat)		
			25	C55M3ECO	These ads are always funny to me. Not only are they inherently funny, but i think the concept is hilarious. Someone, somewhere thought that if you say compare the market in a Russian accent it sounds like compare the meerkat!! Genius!		
8	Nikon	face capturing	35	D33M1MEC	Is funny as the nikon catxh the person Behind the curtain		
			147	M43F1LIT	I am not too sure... The sex hint? Possible among two women?	Other (specify)	it exploits the image of women. Boring and stereoptypical.
9	Heinz	sausage dogs	45	E18F2ALE	The little dogs in hot dog suits (more cute than funny but a lil amusing)		
			74	G46M1A&D	dogs dressed as hotdogs	Other (specify)	just not funny. did the sauces plan to eat the dogs?
			99	J17F1PHE	the dogs?	Other (specify)	boring
			195	S36F3ART	Sausage dogs dressed as hotdogs	It is too simple/too silly	

10	HSBC	Heal dinner	46	E18F2ALE	Not exactly sure tbh, just easily done if you don't understand the culture		
			190	P58M1BAN	The circle of eating / empty plate	Other (specify)	It's the wrong countries - there are countries which have those habits. But it isn't England and China so it's incorrect and that irritates me
			197	S36F3ART	The way the English guy thinks he has to finish his food	It is offensive toward me or others.	
11	Dentastix	dog breath	60	E30F1HSC	The use of animals		
			89	J27M3GCS	The joke of the bad breath having killed the budgie		
12	Old Spice	Isaiah Mustafa	64	F46M1CHE	"The man your man could smell like "		
			140	M17M2PSY	The constant change in scenery and what he says can be funny		
			78	H32M1DRA	A man like him can spoil you	It is offensive toward me or others.	
13	Sodastream	Water on Mars	68	F46M1CHE	The funny bit is that government spends milions to find water on Mars when lidl sell it 1Â£ per pack of 6 bottles ðŸ¤£ from Earth of course ðŸ¤£ðŸ¤£ðŸ¤£		
			134	L30M1OTH	(Description of the ad)	It is too simple/too silly	
14	Ameriquest	The fly in the hospital room	70	G46M1A&D	novel way to kill a fly & disturb a child		
			196	S36F3ART	The family walked in when they announced the fly dead but they thought it was their family member		
15	Tru Fruit	Best way to eat bananas	73	G46M1A&D	that theirs not many deep throaters around & everyone wants one		
			134	L30M1OTH	(Description of the ad)		
			187	P58M1BAN	The too guy ten is players who eat the bananas and		

					then you can see they become j comfortable		
16	Amazon Alexa	The world before Alexa	78	H32M1DRA	I liked how relatable it was and that's what made me laugh because I am a user of Alexa		
			136	L30M1OTH	(Description of the ad)		
17	Bud Light	Swearing jar	80	H32M1DRA	It shows how anyone would anything for a free drink		
			98	J17F1PHE	the tone of the actors voices		
18	Lenor	Outdorable musical	83	I35F3LAW	Pun		
			54	E24FHEA	the song	It is too simple/too silly	
19	Huggies	Welcome to the world	85	I35F3LAW	Children facial expressions		
			162	M30F3PHY	looking the world by babies' eyes		
20	Hoover	Our product sucks	90	J27M3GCS	The pun was the funny part		
			124	K28M3MAR	The wordplay		
			123	K20F1GRA	the pun	It is too simple/too silly	
			151	M43F1LIT	The pun	Other (specify)	It neither made me smile, nor laugh. The puun is too obvious, there is nothing 'new' or different in this advert. I mean, it is ok for the purpose of showing that their products work, but it is nowhere near the previous advert (Toshiba) which I actually enjoyed and I will remember
21	IKEA	Lorry cover-night stand	91	J27M3GCS	The innuendo		
			122	K20F1GRA	subjekt matter	It is too simple/too silly	
22	Air asia	Phuket	92	J27M3GCS	The pun in the wording		
			116	K34M1NCU	Use of name		

23	Sheet	Tooka sheet at the pool	93	J27M3GCS	A pub in the wording		
			130	K28M3MAR	Not sure	It is offensive toward me or others.	
24	Skittles	Arm wrestling	99	J17F1PHE	the muscly dog/baby		
			82	H32M1DRA	How far people go to get the last sweet	I no longer find it funny	
25	Cadbury	Eyebrows dance	106	J29F2ARC	Slightly surreal visual comedy		
			82	I35F3LAW	Eyebrowse dance	Other (specify)	Boring and not related to the product
26	john smith	Peter Kay as diving olympics	114	K34M1NCU	The irony		
			159	M30F3PHY	putting completely unrelated person or object in a serious context		
27	Sedal	Lion with a shampoo	120	K20F1GRA	the subject matter		
			125	K28M3MAR	Choice of lions mane to demonstrate shampoo		
28	Daihatsu	pick-up women van	127	K28M3MAR	Pun		
			156	M46F3PSY	I like the way they play on words to pick up more women as the car is bigger, it made me smile.		
			152	M43F1LIT	The pun and the stereotypical concept of women being attracted by guys with expensive cars	It is too simple/too silly	
29	Snikers	Joan Collins	179	O30F2ENG	The slogan and Joan Collins' performance		
			108	J29F2ARC	Diva	It is offensive toward me or others.	
30	Rocket Mortgage	James Momoa	173	N39F2LIN	the visual but also the fact he's not worreid about playing with his image		
			81	H32M1DRA	I don’t know	Other (specify)	Boring
31	Prius	Robbery	194	S36F3ART	That the Prius was a great getaway vehicle		

			104	J17F1PHE	not sure	It is too simple/too silly	
32	Reebook	Cheat on your girlfriend	6	A19F3PSY	Its supposed to appeal to the lads and bros, making a joke out of cheating in a relationship	It is offensive toward me or others.	
			60	E30F1HSC	Being unfaithful is better than not exercising	Other (specify)	I donâ€™t think it should promote unhealthy relationship ethics
33	Peta	save the whales	7	A19F3PSY	Fat shaming?	It is offensive toward me or others.	
			96	J27M3GCS	Comparing large people to whales	It is offensive toward me or others.	
34	Kia	jealous robot	c	A39M1E&T	Not sure	It is too simple/too silly	
			72	G46M1A&D	robot attacking man	Other (specify)	it just wasn't funny
			135	L30M1OTH	That if you don't respect the technology around you it will kick your arse	Other (specify)	I found it on YouTube "funny ads" but it is honestly not funny and not even going to attract clients
			193	S36F3ART	The robot getting angry	Other (specify)	I just don't find it funny
35	Quizno's sub	strange beings singing	14	A39M1E&T	not sure	Other (specify)	a lot of sceaming
			114	K34M1NCU	The rodents	It is too simple/too silly	
36	Talk talk	restaurant bill	15	C64M2LAN	Presence of personality and their reaction to explanation for service charge/consultancy charge	It is too simple/too silly	
			22	C55M3ECO	The restaurant bill has lots of silly hidden charges	It is too simple/too silly	
37	Dove	Changing colour	31	D33M1MEC	More racist	It is offensive toward me or others.	

			216	S45F1CHE	not sure it depicts a colored woman who becomes white after washing with dove	It is offensive toward me or others.	
38	Kia	Morpheus	73	G46M1A&D	the play on the matrix movie	Other (specify)	boring & not funny
			98	J17F1PHE	the singing	It is too simple/too silly	
			200	S36F3ART	Morpheus offering different keys then singing opera	I no longer find it funny	
39	McClean	Mother's day	59	E30F1HSC	Women always do the cleaning	It is offensive toward me or others.	
			93	J27M3GCS	Implying women are for cleaning	It is offensive toward me or others.	
40	direct tv	No tv makes you crazy	83	H32M1DRA	That bad cable makes you crazy	It is offensive toward me or others.	
			101	J17F1PHE	the blowing up of the house	Other (specify)	boring
41	Subway	SEX	64	E30F1HSC	The irrelevance of the word sex	It is too simple/too silly	
			118	K34M1NCU	The headline	It is too simple/too silly	
			132	K28M3MAR	Profanity	It is offensive toward me or others.	
42	Domino	Yodelling	86	I35F3LAW	Yodelling	Other (specify)	Annoying
			105	J29F2ARC	Yodelling	It is too simple/too silly	
43	Pepsi	Okurrr	111	J29F2ARC	Sound effect of okurrr	It is too simple/too silly	
			145	M17M2PSY	Cardi B's catchphrase "Okurrr"	It is too simple/too silly	

44	Burger King	Blow off	94	J27M3GCS	The innuendo	It is offensive toward me or others.	
			163	M30F3PHY	cheap, sexual joke	It is offensive toward me or others.	
45	GoCompare	2009 - first ad	112	K34M1NCU	His opera signing	Other (specify)	Irritating
			181	O30F2ENG	The singer	It is too simple/too silly	
			215	S45F1CHE	the catchy song should stick on your head, sung by a over-joyful guy.	I no longer find it funny	
46	Andrex	Clean is a feeling	19	C64M2LAN	Concept that no matter the size Andrex paper cares for it	It is too simple/too silly	
			182	O30F2ENG	The close-up shots of various bums!	Other (specify)	It's a bit awkward and voyeuristic
47	Mercedes	Monster in the engine	133	L30M1OTH	(Description of the ad)	I no longer find it funny	
			192	P58M1BAN	The idea that a monster lives inside a Mercedes benz	It is difficult to understand/ took too long to understand.	
48	Chicken of the sea	Elevator	49	E18F2ALE	The difference between her sucking in and relaxing being much more bloated/far	Other (specify)	Not offensive in the way that I person sally will feel sad over it but enforces negative body image and promotes disordered eating, particularly in young women
			198	S36F3ART	The fact she's hot but she's holding her belly in	Other (specify)	Sexist

7- levels of analysis of participants' responses for the H (on the left) and NH (on the right) sets of data