



AN EXPERIMENTAL STUDY ON THE HUMOUR  
EFFECT AND MOOD-CONGRUENT MEMORY  
AMONG IIUM STUDENTS

BY

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## **ABSTRACT**

The aims of the present study are threefold. Firstly, to determine whether individuals in either a neutral mood or a dysphoric mood recall more words from humorous or non-humorous video clips. Secondly, to determine whether dysphoric individuals recall fewer words overall than individuals in a neutral mood, and lastly, to determine whether the effect of humour on memory recall is due to humour per se or the experience of positive affect produced by it. A two-factor mixed factorial design was employed in an attempt to fulfil the aims of the study. Each of the two independent variables was manipulated on two levels. The first was the mood of the participants who were either neutral or dysphoric. The second variable was video type, which were humorous and non-humorous. Both groups viewed the two video types which included displayed words and were asked to recall as many words from the videos; thus the number of words recalled was the dependent variable. The two hypotheses put forward were supported. The first is that, consistent with mood-congruent memory theory, dysphoric individuals recalled fewer words from the humorous videos compared to individuals in a neutral mood. The second is that the number of words recalled from the humorous video clips will be greater than the number of words recalled from the non-humorous video clips.

## خلاصة البحث

لهذه الدراسة التي بين أيدينا ثلاثة أهداف، الأول: تحديد ما إذا كان الأفراد سواء من كان في مزاج معتدل أو مضطرب قادرين على استدعاء كلمات أكثر من أشرطة الفيديو المرحة أو غير المرحة. والثاني: تحديد ما إذا كان الأفراد ذوو المزاج المضطرب يستدعون كلمات أقل بصفة عامة من تلك التي يستدعيها ذوو المزاج المعتدل، وأخيراً تحديد ما إذا كان تأثير المرح على ذاكرة الاستدعاء أو استدعاء الذاكرة راجعاً إلى المرح ذاته أو إلى خبرة الأثر الإيجابي الذي يحدثه. وقد استخدم تصميم من عنصرين اثنين ممتزجين في محاولة للوصول إلى أهداف هذه الدراسة. وقد فحص كلا المتغيرين المستقلين للدراسة على مستويين، الأول: هو مزاج المشاركين سواء أكان معتدلاً أم مضطرباً، والثاني: هو نمط شريط الفيديو سواء أكان مرحاً أم غير مرح. وقد شاهدت كلتا المجموعتين نمطاً أشرطة الفيديو التي تضمنت كلمات معروضة، حيث طلب منهم استدعاء أقصى ما يمكن استدعاؤه من الكلمات من الأشرطة وهكذا اعتبر عدد الكلمات المستدعاة متغيراً تابعاً. وقد تم تدعيم الفرضين اللذين اعتمدا سلفاً. والأول هو أنه طبقاً لنظرية الذاكرة المتكافئة للمزاج، فإن الأفراد ذوي المزاج المضطرب استدعوا كلمات أقل من المثيرات المرحة مقارنة بالأفراد ذوي المزاج المعتدل. والثاني: هو أن عدد الكلمات المستدعاة من أشرطة الفيديو ذات المضمون المرح يكون أكبر من عدد الكلمات المستدعاة من أشرطة الفيديو ذات المضمون غير المرح.

## APPROVAL PAGE

I certify that I have supervised and read this study and that in my opinion, it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a thesis for the degree of Master of Human Sciences (Psychology)

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## DECLARATION

I hereby declare that this dissertation is the result of my own investigations, except where otherwise stated. I also declare that it has not been previously or concurrently submitted as a whole for any other degrees at IIUM or other institutions.

Tunku Saraa-Zawyah bt. Tunku Badli

Signature.....

Date.....

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CONGRUENT MEMORY AMONG IIUM STUDENTS**

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# **CHAPTER ONE**

## **INTRODUCTION**

### **1.1 BACKGROUND OF STUDY**

The usage of humour is both common and diversified, yet this light-hearted subject has gained serious attention in psychological research. Among the most popular focus is on the psychological benefits of humour. Humour has been found to be a means of moderating stress and depression. In addition, individuals who frequently use humour are less likely to worry (Capps, 2006; Takeda, Hashimoto, Kudo, Okochi, Tagami, Morihara, et al., 2010). Similarly, the usage of humour by medical providers has positive benefits such as reducing embarrassment about awkward procedures, building rapport, as well as calming and reassuring patients about medical procedures (Francis, Monahan, & Berger, 1999). Furthermore, humour has an additional benefit of having a positive effect on memory. Education and advertising are two fields in particular which have benefited from this association. In an otherwise serious lecture, for example, humorous examples are remembered better than non-humorous ones (Schmidt & Williams, 2001). Meanwhile, the advertising industry spends vast amounts of money in producing humorous advertisements, as research has shown that humorous advertisements increase viewers' attention, leading to greater advert memorability (Kellaris & Cline, 2007; Schmidt & Williams, 2001). However, the concept of mood-congruent memory dictates that an individual's mood influences how they remember an event, such that positive moods elicit positive memories, and vice versa (Eysenck & Keane, 2005). Since humour elicits positive feelings, it could be assumed that only people in a positive mood state would encode or recall the target

event, for example, a humorous advertisement. Subsequently, the present study will focus on the effects of humour and mood-congruent memory on experimentally-induced dysphoric individuals.

## **1.2 ISLAMIC PERSPECTIVE ON HUMOUR**

Joking, as an expression of humour is not alien to Islam and like most things in life, as a form of entertainment, joking is permissible as long as it is done in moderation. The Prophet s.a.w. himself provided precedence for this form of amusement as reported by Tirmidhi, “Abu Hurairah r.a. said that the Prophet s.a.w. was told *‘Oh Prophet of Allah, you are joking with us’*. He said, *‘I only say what is true’*”. Although humour may not be among the most prominent topics in Islam, it is not without its own guidelines, some of which as outlined in Ana (2002), are as follows. Firstly, joking or the use of humour is permissible as long as it does not involve telling lies or exaggerating the truth, as indicated in the aforementioned hadith. Secondly, the subject or topic of the joke should not include foul language or improper topics of conversation. Thirdly, there is an appropriate time and place for joking with our acquaintances. There is a hadith reported by Muslim in regard to this which relates that *“the Prophet s.a.w. would often not leave the mosque after the Fajr prayer until the sun rose. They would be laughing and he would be smiling”*. According to Ana (2002: 2), Imam Nawawi is reported to have said “Joking is prohibited when it is excessive and consistent. It becomes ineffective and causes the heart to harden. It distracts a person from worship of Allah and concern with religious issues”. There is a hadith (reported by Bukhari) that warns against speaking obscene or rude words in order to make people laugh, but instead we should preserve good manners as the Prophet s.a.w. said, *“the best among you are those who have the best manners and the*

*best character*". Generally, joking is beneficial in that it entertains and can bring people together.

### **1.3 STATEMENT OF THE PROBLEM**

The specific areas of investigation in this present study are humour and memory, in particular, the effect of humour on memory recall. Humour is presumed to enhance recall (e.g. Carlson, 2011; Schmidt & Williams, 2001), such that we are more likely to remember humorous material compared to non-humorous material. The mood of an individual is also supposed to impact memory (e.g. Eysenck & Keane, 2005), but the positive effect of humour on memory has yet to be studied while taking into consideration the mood of the participants. Thus, most of the research is conducted on participants in a neutral mood (e.g. Kellaris & Cline, 2007; Summerfelt, Lippman, & Hyman, 2010). Similarly, research explaining the effect of humour on memory tends to focus on the cognitive processes involved in understanding humour rather than the emotional aspects involved (e.g. Gervais & Wilson, 2005; Schmidt, 2002). Therefore, the present study attempts to fill this gap in the literature by investigating the humour effect on memory and the role of participants' mood.

### **1.4 RESEARCH OBJECTIVES**

The present research was conducted to fulfil three objectives, which were:

1. To determine whether individuals in both a neutral and dysphoric mood recall more words from humorous or non-humorous video clips.

2. To determine whether individuals in a dysphoric mood recall fewer words overall than individuals in a neutral mood.
3. To investigate whether the positive effect of humour on memory recall is due to humour per se or the experience of positive affect produced by it.

### **1.5 SIGNIFICANCE OF THE STUDY**

The humour effect's sparse representation in memory literature belies its theoretical importance and according to Carlson (2011) there is good rationale for studying the phenomenon. First, humour may be a specific case of more commonly researched memory phenomena. For example, extensive memory research shows that "distinctive", "bizarre" and "self-generated" stimuli are recalled at higher rates than non-bizarre or non-distinctive stimuli. It is possible that humorous material tends to be higher on one of these dimensions which in turn could create the humorous recall advantage. If this were the case, humour would provide researchers another independent variable with which to construct a broader theoretical account of memory. Second, even if humour impacts memory via unique mechanisms, the effect of humour is worth studying because its influence on memory is just as real as that of other variables. Studying the effect of humour on memory could also have implications in the area of clinical psychology, specifically in psychotherapy. For example, not only could the use of humour by psychotherapists ease patients' anxiety about therapy, or view a traumatic event from a less threatening perspective (Chapman & Chapman-Santana, 1995), patients might also better recall suggestions and important points discussed during the therapy session.

The experiment conducted for the present study attempted to answer the question as to whether individuals in a dysphoric mood benefit from the positive effects of humour on memory just as non-dysphoric individuals, on whom most studies on humour and memory are conducted (e.g. Carlson, 2011; Schmidt, 1994). If it is found that recall is enhanced in dysphoric individuals, the implications could be seen in educational as well as therapeutic settings. In other words, humour can have a positive effect on memory regardless of mood.

The present study attempted to differentiate between humour per se and the positive affect it elicits, and determine which one has a positive effect on memory. Doerksen and Shimamura (2001) pointed out that the effect of emotional valence associated with word stimuli (e.g. jealousy, slaughter) is somewhat different from the emotional valence associated with pictures. Indeed, emotionally valenced words do not appear to evoke the magnitude or quality of emotional (i.e., autonomic) response that pictures (particularly negatively valenced pictures) tend to evoke, although, according to Doerksen and Shimamura (2001), emotionally valenced words have been shown to elicit increased activation in the amygdala compared to neutral words. In light of this, the use of videos in the present study, in contrast to previous studies that use verbal jokes (e.g. Summerfelt, Lippman, & Hyman, 2010) or cartoons (Schmidt & Williams, 2001), may elicit a stronger emotional valence.

## **1.6 CONCEPTUAL AND OPERATIONAL DEFINITIONS**

The present study has two independent variables, each with two levels. The first independent variable is Mood (Dysphoria and Neutral), and the second is video (Humorous and Non-humorous). According to Reeve (2005), mood is a way of feeling that often exists as an aftereffect of a previously experienced emotional episode, and

exists as a positive or negative affect state. A humorous stimulus can be conceptually defined as “any social or non-social event, occurring purposely or inadvertently, that is perceived to be amusing” (Wyer Jr. & Collins II, 1992: 663-664). In the present study, mood is operationally defined as either experimentally-induced dysphoric mood through the Velten Mood Induction Procedure (VMIP), or neutral mood through the absence of the VMIP. Mood is measured by using the Self-Assessment Manikin (see Appendix C, part 1). The humorous stimuli in this study are operationally defined as the humorous video clips that have been rated as funny prior to the study, while positive non-humorous stimuli in this study are operationally defined as video clips that, prior to the study, have been rated as not funny, as well as evoking positive feeling. The dependent variable is operationally defined as the number of words a participant recalls in a 10-minute free recall task.



## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 HUMOUR**

According to Polimeni and Reiss (2006), humour is a complex cognitive function which often leads to laughter, and the ability to perceive humour may be genetic and inherent in human beings, as it can be considered as instinctive. They claim that humour is universal and that no culture exists that is unfamiliar with humour, further implicating a genetic explanation. Although the definition of humour differs slightly depending on the discipline that studies it, Strick, Holland, Van Baaren, and Van Knippenberg state that that humour is generally accepted as being a “pleasurable experience that arises from an idea or event that is in some sense incongruous” (2010b: 44).

According to Gervais and Wilson (2005), laughter and humour have received increasing attention from biologists and psychologists during the last 30 years. This attention has resulted in numerous empirical advances and this research has covered a number of hypotheses to explain the ultimate evolutionary origins of laughter and humour. Nevertheless, the scientific study of laughter and humour is still in its infancy relative to other comparable subjects on emotions and communication research.

Korobkin (1989) indicates that college students reported that learning is enhanced by the inclusion of instructionally-appropriate humour. Hill (as cited in Garner, 2006) suggests that students will often have better recall of a lesson if it is presented with humour. Kher, Molstad, and Donahue (1999) suggest that teaching effectiveness is enhanced by the use of appropriate humour that fosters mutual

respect, and humour increases student receptivity to material by reducing anxiety in dealing with difficult material, having a positive effect on test performance. The positive environment of a humour-enriched lecture has even been shown to increase attendance in class.

Humour, and the accompanying laughter it elicits, has supposedly psychological as well as physiological benefits. According to Garner (2006), psychologically, the effects of humour and laughter have been shown to reduce anxiety, decrease stress, increase mental sharpness, enhance self-esteem, and increase self-motivation (Berk, 2001; Garner, 2006). In educational settings, it is also useful in helping an individual engage in the learning process by creating a positive emotional and social environment in which students are more relaxed and are better able to focus and attend to the information being presented. Additionally, humour can serve as a bridge between educators and students by demonstrating a shared understanding and a common psychological bond. Physiologically, humour and laughter can aid learning through improved respiration and circulation, lower pulse and blood pressure, exercise of the chest muscles, greater oxygenation of blood, and the release of endorphins into the bloodstream (Garner, 2006).

## **2.2 HUMOUR AND MEMORY**

The use of humour as a memory aid is widespread, but despite that, research on humour's positive effect on memory has yielded inconsistent results (Carlson, 2011). Humour is often used in advertising, and researchers have found that consumer comprehension of and positive affect toward an advertisement increases when humour is added to its content. Nonetheless, humour in advertisements does not always improve memory for product information. It has been found that humour reduces

memory for the product by distracting attention from the advertised product, although product liking was enhanced (Summerfelt, Lippman, & Hyman, 2010; Strick et al., 2010b). According to Reisberg and Heuer (2004), humour promotes memory for verbal jokes (e.g. Summerfelt, Lippman, & Hyman, 2010) as well as cartoons (e.g. Schmidt & Williams, 2001). Elaborations of these studies will be provided further on.

In education, humour is widely encouraged as a teaching tool, though primarily as a way to increase positive associations with the class. Students show increased participation and interest in classes where humour is controlled and manipulated, but do not consistently show better memory for class information or obtain higher final grades (Summerfelt et al., 2010). However, Schmidt (2002) cites several studies that demonstrate that humorous examples and jokes told during lectures were better remembered than serious and topical statements from the lectures, and a class taught with humorous examples resulted in better performance compared to a class taught without the humorous examples.

One of those studies is a classic study conducted by Kaplan and Pascoe in 1977. They conducted an experiment to investigate how humour can affect learning during a lecture. Two types of humour were used; first were humorous examples related to the material covered during the lecture (related humour), and second was humour that was not related to the content of the lecture (unrelated humour). They hypothesized that participants would have good recall for the related humour examples, but not for the unrelated humour examples. Participants ( $n = 508$ ) viewed one of four versions of a 20-minute lecture that had been videotaped. These four versions consisted of one serious version and three humorous versions of the same lecture. In turn, the three humorous versions included (1) humour directly related to some concepts in the lecture (concept humour); (2) humour not related to any of the

lecture materials (non-concept humour); and (3) a combination of the two types of humour (mixed humour). The procedure they employed is as follows. Each version of the lecture contained six main concepts. In the 'concept humour' version, all concepts were illustrated using humorous examples. In the 'mixed humour' version, the number of concepts presented as a humorous example was only three. All participants were then given a quiz on the lecture they viewed, which consisted of 11 multiple choice questions. After six weeks, the same quiz was given to test their recall. The results from that study show that humour that was related to the lecture material was recalled better ( $M = 7.15$ ) than the non-related humour ( $M = 6.69$ ). That study demonstrates that humour can be an effective learning tool in the classroom, but only when the humour is related to the material being taught.

Carlson (2011) cites several researchers who have documented a recall advantage for humorous material in education settings. One of the studies that Carlson refers to was conducted by Ziv (1988) who investigated the use of humour in higher education through two experiments. The first experiment used relevant humour in a one-semester statistics course in an experimental group and no humour in a control group. One hundred sixty-one students participated, and the results showed significant differences between the two groups in favour of the group learning with humour. The second experiment was a replication of the first one, using 132 students in a one-semester introductory psychology course. The students were divided randomly into two groups. Humour was used in one, and the same teacher taught the second group without using humour. Again, significant differences were found; the group studying with humour had higher scores on the final exam.

From the studies mentioned so far, there is support for the use of humour in education settings because humour can improve recall of the learned material,

resulting in higher exam scores. However, in these settings, the humour effect is most effective when the humour is related to the material the students are learning.

### **2.2 a) The Humour Effect**

According to Schmidt and Williams (2001), research has established that humour does have a positive effect on memory, including enhanced memory for humorous advertisements, and humorous examples from lectures being recalled better than serious ones. Carlson (2011) points out that the empirical evidence on humour's effect on memory is limited. The inconsistent findings regarding humour and memory may reflect that humour does not have a direct effect on memory. Instead, humour may "work indirectly through other mechanisms, such as rehearsal, surprise, arousal, incongruity, or constraints on the reconstructive process" (Summerfelt et al., 2010: 377).

One of the agreed upon findings in memory research is that people are good at recalling unusual or unexpected events. Imagine, for example, a colleague turning up in a Mickey Mouse costume during a serious business meeting. It is likely that an individual would still remember this incident a month later, whereas they would forget what other colleagues were wearing and what kind of lunch they had after the meeting. A prime example of a distinctive event is when something very humorous happens. Interestingly, enhanced memory for humour often decreases memory for unrelated non-humorous information that was encountered in close temporal proximity. In memory research, the enhanced memory for humour, at the expense of memory for non-humour, has been termed the *humour effect* (Schmidt, 1994; 2002; Schmidt & Williams, 2001).

### **i) The Humour Effect Due To Semantic Incongruity**

Several explanations have been put forth to explain the positive effect of humour on memory. The explanation that is most frequently given as to why humour enhances recall is incongruity (Schmidt, 1994). In the context of humour research, the term incongruity has been used in two distinct ways. Firstly, as a synonym for distinctiveness, as when a piece of information is presented in such a way that makes it distinct within its context and is otherwise known as contextual surprise (Carlson, 2011). Distinctive items are remembered more easily and in certain circumstances, humour may further contribute to the saliency of an already distinctive item. For example, a single joke told during a lengthy and boring speech is incongruent with the rest of the speech, and the joke will be distinct and thus better recalled compared to the rest of the speech. In addition, the joke during the lengthy speech may be better retained than if that same joke was told in a humorous sketch (Schmidt, 1994; Summerfelt et al., 2010). However, Mitchell, Graesser, and Louwerse (2010) obtained results that suggest that jokes presented in a non-humorous context, and therefore incongruent context, (e.g. a lecture) are rated as less humorous than jokes told by a comedian during a comedy routine, suggesting that humour presented in a distinctive context may not necessarily result in better recall.

The semantic incongruity or “incongruity resolution” hypothesis suggests that a joke is often funny when at first it does not make sense but upon further thought it does. In these theories of humour resolving a semantic incongruity is often associated with the experience of humour. In current research on memory the incongruity resolution hypothesis suggests that resolving semantic incongruities (or generating a resolution) creates a memory advantage for humorous materials. Stimuli with an initial incongruity require a semantic search and if a resolution to the incongruity is

found the material will be recalled at higher rates. This hypothesis suggests that the act of generating a resolution creates humour's advantaged recall. Thus, according to this hypothesis, the humour effect is "a specific example of the generation effect, namely the finding that self-generated items are recalled at higher rates than read items" (Carlson, 2011: 23). According to this hypothesis, if non-humorous stimuli contained apparent incongruities that could be successfully resolved (i.e., solutions that could be self-generated) the memory advantage for humorous material would be eliminated (Carlson, 2011).

He (Carlson, 2011) further points out that 'incongruity' and 'perceived humour' are often confounded. The study he is referring to was conducted by Schmidt and Williams in 2001. They investigated incidental memory for three types of cartoons; original cartoons, literal translations of the originals, and 'weird' cartoons created by inserting incongruent elements from unrelated cartoons into the literal cartoons. In Experiment 1, 84 participants viewed a slide presentation of all three cartoon types, with 72 cartoons in total. They were then given a 10 minute surprise recall task in which they had to recall the caption on the slides. In Experiment 2, 128 participants viewed only two types of cartoons (i.e. either original and weird, original and literal, or weird and literal). They too were given an unexpected recall phase similar to that in Experiment 1. In both experiments, participants were asked to rate how humorous they found the cartoons. Schmidt and Williams' (2001) study resulted in three major findings. First of all, humorous original cartoons were better recalled than literal or weird cartoons in both experiments. Second, the humour effect occurs under incidental learning instructions, as well as under intentional learning instructions. Third, cartoon humour led to enhanced recall of cartoon gist, but not increased recall of detailed wording of the cartoon captions.

From Schmidt and Williams' (2001) study, it can be seen that the humour effect is not just the result of incongruent elements in a joke or cartoon. If that were the case, weird and original cartoons would have been remembered equally well, but they were not. This could suggest that it is humour per se that leads to the memory advantage for humorous material. However, that advantage could be limited in some way; we may be able to recall a joke or cartoon, but because we may not remember all the details, we would not be able to re-tell that joke successfully to another person. Similarly, in support of the humour effect occurring in incidental learning instructions, Carlson (2011), reported that when participants were told they will be presented with humorous materials, the humour effect still occurs.

According to Carlson (2011), the 'weird' stimuli that were used in Schmidt and Williams' (2001) study separated incongruity and humour. The stimuli were incongruent, in that they violated participants' expectations, but were non-humorous. The participants tried to make sense of the 'weird' stimuli via semantic searches but the incongruities could not be successfully resolved. Humorous stimuli were recalled at higher rates than the "weird" stimuli. Schmidt and Williams (2001) conclude that elaborate semantic searches resulting from perceived incongruity did not produce the humour effect. Carlson notes that Schmidt and Williams (2001) tested and rejected an incongruity hypothesis but not an incongruity resolution hypothesis. In order to test the incongruity resolution hypothesis, non-humorous stimuli must invoke an elaborate search for a solution that can be successfully resolved.

The three most widely cited hypotheses in explaining the humour effect on memory were tested by Carlson (2011) in an experimental study; namely contextual incongruity, semantic incongruity, and humour per se. To guide his study, he made predictions with regard to each of them. Firstly is the context dependent elaboration