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The effect of humour and mood on memory recall

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Abstract

The research presented here attempted to investigate the effect of humour on memory recall, while taking into consideration the mood of the participants. Participants were divided into two groups; neutral and dysphoric group. Both groups viewed humorous video clips which included displayed words and were asked to recall as many words from the videos. Findings showed that both groups had higher recall of words. Thus, the enhanced memory due to humour or humour effect can occur not only to individuals in a neutral mood, but also those in dysphoric mood.

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1. Introduction

The usage of humour is both common and diversified. Yet, this light-hearted subject has gained serious attention among 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 [1, 2]. Similarly, the usage of humour by medical providers includes positive benefits such as reducing embarrassment about awkward procedures, rapport building, as well as calming and reassuring patients about medical procedures [3]. 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. The advertising industry spends vast amounts of money on producing humorous adverts, as research has shown that humorous adverts increase viewers' attention, leading to greater advert memorability [4, 5]. 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 [6]. And 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, the humorous advert. If the humour effect occurs when individuals are in a neutral mood, would the same occur for individuals in a dysphoric mood? 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 nondysphoric individuals. If it is found that recall is enhanced in dysphoric individuals, the implications could be seen in educational as well as therapeutic settings.

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1.1. Review of literature

Humour, and its accompanying laughter has psychological benefits. According to Garner [7], psychologically, the effects of humour and laughter have been shown to reduce anxiety, decrease stress, enhance self-esteem, and increase self-motivation. In education, humour is widely encouraged as a teaching tool and students show increased participation and interest in classes where humour has been controlled and manipulated. [8] cites 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 is humorous examples that were related to the material covered during the lecture, and second is humour that was not related to the content of the lecture. The results from that study showed that humour that was related to the lecture material was recalled better than the nonrelated humour. That study demonstrated that humour can be an effective learning tool in the classroom, but only when the humour is related to the material being taught.

It is often believed that emotional states can influence the way people remember, interpret, and evaluate events. Mood states can influence cognitive processing so that an individual's thoughts and memories match that mood state [9]. According to Bower [10] positive moods bring about positive interpretations of events and pleasant thoughts and memories. Negative moods, however, elicit negative interpretations, thoughts, and memories. Evidence exists to support the effect of mood-congruency in various cognitive operations, including judgement, attention and perception, as well as different types of recall and recognition procedures. This can be seen from studies that, following the induction of a positive mood state, participants show greater memory for pleasant material, and participants who underwent a negative mood induction procedure showed greater memory for unpleasant material [11].

The focus of investigation in the present study is on whether the mood of the participants can influence their memory recall. A group of participants was experimentally-induced to experience dysphoria using Velten Mood Induction Procedure (VMIP). The other group was referred as neutral group or a group with the absence of the VMIP. The humorous stimuli in this study were operationally defined as the humorous video clips that have been rated as funny prior to the study. The dependent variable referred to the number of words a participant recalled in a 10 minute free recall task.

1.2. Ethical consideration

Particular ethical consideration was taken in this study because part of the experiment included inducing a negative mood to the participants in the Dysphoria group. Prior to beginning the study, informed consent was obtained from all participants. They were provided with information regarding the experimental procedures, the expected duration, as well as the potential risk or harm of participating in the study, particularly for those who will undergo the negative mood induction. To protect the participants' anonymity, no identification data was collected, and they will be assured that any information or data obtained will be kept confidential. As a screening procedure, the Depression Anxiety Stress Scale (DASS) was administered to all participants. Any individual who obtains a score exceeding the 'mild' category (i.e. a score of 14, 10, or 19) in any of the three subscales (Depression, Anxiety, and Stress) will be excluded from the study. Participants were also required to indicate whether they are currently on any anti-depressant medication. The reason for these screening procedures is because any individual who is already depressed or anxious may have a severe reaction to the negative mood induction compared to others, and would not be included in the study. For participants in the 'dysphoria' group who underwent the negative mood induction procedure, positive mood induction statements were provided for them before they leave the study to counteract the negative feelings they experienced during the experiment.

2. Method

2.1. Participants

87 undergraduate students (males = 17 and females = 70) participated in the study. They were all first and second year Psychology students from the Kulliyah of Islamic Revealed Knowledge and Human Sciences, IIUM. The age range was between 19 and 23 years old. These participants were not currently on medication for depression or

anxiety disorders, or obtain a score on the DASS-21 in the ‘mild’ range held before the experiment. Informed consent was obtained from the participants prior to the commencement of the study.

2.2. Stimuli

2.2.1. Humorous videos

Humorous videos consisted of 5 clips taken from comedy shows publicly available on the Internet. All clips were in English, taken from a mixture of popular British and American television shows. The average length of each clip is between two and three minutes. All clips were presented to the participants via a Powerpoint presentation. During each clip, a total of five words were displayed in white, Albertus Medium font in the centre of the screen. These words were chosen from the dialogue of the current scene, and were displayed every ten to twenty seconds, depending on the length of the clip. These words served as the to-be recalled material at the end of the experiment. All humorous material was rated prior to the experiment by a sample of students (not participating in the experiments) on how funny (1=*not at all funny* to 5=*very funny*) each clip is. Only humorous materials rated 5 i.e. very funny were selected to become the experimental stimuli.

2.2.2. Velten Mood Induction Procedure Statements (VMIPS)

The Velten mood-induction procedure was originally designed to be administered orally and individually to participants [12]. Participants are asked to read each of 60 mood-related statements (on cards), first to themselves, then aloud, at the rate of one card per 20 seconds. The statements begin rather neutrally and become progressively more elated or depressed in content, depending on the particular induction which in the present study employed the “sad” mood induction with the aim of producing experimentally-induced dysphoria. However, in the present study, a modified version of the VMIP statements was used [13]. This modified technique is used when administering to large groups while maintaining the individual as the unit of analysis.

In the present study, all 60 statements were displayed one at a time on Powerpoint slides at a rate of one every 10 seconds. Each statement was displayed with black Calibri font, centred on a white background. Participants were asked to read and focus on each statement silently. Instructions designed to facilitate incubation of the mood were presented to the participants to read by themselves, and they were given three minutes to build on their sad mood. According to [13], the incubation period is included to increase the duration of the induction as it can intensify the experience of an affective state.

2.3. Procedure

Participants completed informed consent forms and were then given verbal instructions for the subsequent experimental procedures. Part of this included explaining the response sheets that were to be completed. Participants were also provided with an opportunity to ask questions or to clarify their role in the experiment. Once the experiment began, all instructions were displayed as part of the Powerpoint presentation.

As a convenient sample was used, one group of participants was assigned as the Dysphoric Group (DG), and the other as the Neutral Group (NG). Both groups underwent the same experimental procedure, except that the former received a mood-induction procedure (MIP) based on the Velten Mood-Induction Procedure (VMIP) and the other group did not. Prior to the mood-induction, participants were asked (via the presentation) to read each statement carefully, to focus their attention on each of them, and try to internalize them as best they could. Each statement was presented one at a time as part of a Powerpoint presentation at a rate of one every 10 seconds. The font chosen was Calibri, size 24 in black on a white background to maximize visual clarity. This MIP lasted around 10 minutes. In the mood-induction phase participants viewed the 60 statements. They were asked to concentrate and build upon their induced sad mood, and that they were given three minutes to do so.

The mood-induction and subsequent incubation period was followed by the humorous video presentation. Participants viewed a series of humorous video clips. During each clip, a total of five words (that were extracted from the dialogue from that particular clip), were displayed one at a time, and participants were asked to pay attention to these words. The rate at which each word appeared depended on the length of the clip, but it was

designed so that the timing of each word was evenly spaced throughout the clip. For example, during a two minute clip, a word would appear every 20 seconds. Each word was displayed for two seconds and this timing was held constant throughout all the clips. All words were centred in white Alberta Medium font. The words were intended to be large enough to be seen clearly, but not too large as to completely distract from the scene in the clip.

The final part of the experiment was the free recall phase. During this phase, participants were given 10 minutes to list down as many of the displayed words as they could recall in any order. Lastly, participants in the Dysphoric group were given a positive mood-induction, using the same method but with positive statements, before completing the experiment.

3. Result

Following the mood induction procedure, a decrease in mood rating was predicted in the Dysphoric group. Table 1 shows the mean mood rating between the Dysphoric group ($M = 4.267$) and the Neutral group ($M = 6.024$). As expected, the Neutral group had a significantly higher mean mood rating than the Dysphoric group, $t(85) = 5.974$, $p < .001$.

Table 1: Means and Standard Deviations for Mood Rating between Groups

Group	N	Mean	SD
Neutral	42	6.024	1.240
Dysphoria	45	4.267	1.483

Table 2 shows the means and standard deviations of the number of words recalled by the Neutral and Dysphoric groups. The analysis showed that participants in the Dysphoric group recalled a lower number of words than participants in the Neutral group but the difference between the two groups was not significant, $t(85) = 1.391$, $p > 0.05$.

Table 2: Means and Standard Deviations of Number of Words Recalled from humorous video

Video	Mood	Mean	SD	N
Humorous	Neutral	13.429	4.748	42
	Dysphoria	12.067	4.382	45

4. Discussion

The usage of humour in everyday life is quite varied. Humour can be utilised in educational settings, advertisements, as well as a tool to ease awkward social interactions (e.g. [7]; [14]; [15]. A number of studies (e.g. [16]; [8] provide support for the phenomenon known as the humour effect [5]; [9]. In other words, that humorous material is recalled better than non-humorous material. Mood can also influence memory [10], such that we are more likely to remember events and material that matches our current mood. Positive moods should facilitate the recall of positive information, and negative moods should facilitate the recall of negative information. Consequently, it could be assumed that individuals in a negative mood would recall less humorous material than individuals in a neutral mood because the humorous material would not be congruent with their mood. The findings in the present study showed that both groups were able to recall humorous material and their ability to recall did not differ significantly. Thus it can be interpreted that participants in both groups experienced the positive effect of humour on memory. In other words, humour does enhance the memory of words and this can be seen not only among individuals in a neutral mood, but also those in a dysphoric mood. Thus, it can be said that it was the funniness, or humour per se of the clips that resulted in the positive effect on memory especially on the dysphoric group. Future study should examine what other aspect of humour could contribute to its effect, or what specific type of humour plays a role in its advantageous recall. It can also be investigated whether there is any gender differences in the perception and appreciation of humour, and how that may affect the recall of humorous material. In the

present study, mood was measured only before the presentation of the humorous material. Perhaps future researchers could measure participants' mood after being exposed to the humorous material to determine whether their mood increased as a result of being exposed to humour, and whether that may contribute to the humour effect on memory. The generalizability of the findings in the present study is however limited as the dysphoric mood state was experimentally induced, and it remains to be seen if the humour effect occurs among naturally dysphoric or clinically depressed patients too. In relation to this, an interesting study by Antikainen, Hanninen, Honkalompi, Hintikka, Koivumaa-Honkanen, Tanskanen, and Viinamaki [18] deserves mention. They investigated the relationship between mood and memory complaints in depressed patients. The patients received either antidepressive medication or psychotherapy in order to improve their mood. After a 6-month follow-up, it was found that patients' mood improved, and that improvement was associated with a decrease of memory complaints. Thus, future research could investigate whether humour in some form could be used as a part of a treatment to improve patients' mood to the extent that it could also decrease their memory problems. For example, patients could be encouraged to read their favourite comics or watch comedy programmes as part of homework tasks assigned by their therapist. The therapist could test patients' memories on those materials in order to strengthen their memory abilities, and once their mood has improved along with the help of other treatments, the therapist can help patients in recalling other important information in their lives.

5. Conclusion

The present study investigated the positive effect of humour on memory by comparing recall of words from humorous video in groups that have different mood. Both groups did not differ in the number of words recalled. In conclusion, the humour effect can occur not only in individuals in a neutral mood, but also those in a dysphoric mood.

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