

Effect of Context Upon Accuracy of Recall of Affective Experiences

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The authors examined the effect of context on recall of neutral stimuli that had been embedded in a series of either funny, sad, or fearful stimuli. The stimuli consisted of cartoons and captions. Neutral cartoons were recalled as being funny when they had been embedded in a series of funny cartoons more often than funny cartoons were recalled as being neutral. Fearful cartoons were remembered as being neutral more often than neutral ones were recalled as being fearful. Context had no effect on recall of neutral stimuli that had been embedded within a sad series. The role of defensive mechanisms in neutralizing fearful images in memory is discussed.

The process of memory has long been of central interest for cognitive psychologists, neuropsychologists, personality psychologists, and clinical psychologists alike. This includes how people remember, what they remember, and how memories can be distorted over time. The research reported in this article focuses on a particular aspect of memory: distortion that is based on the category of events with which the remembered event is associated. Some theorists asserted that memories of unhappy events that were embedded within a contextual class of happy events will be distorted so that they are recalled as having been happy (Martin & Abelson, 1969). This putatively defensive reaction is akin to the defense of denial according to Herschel and Wall (1972). This formulation is too simplistic, as Gerber (1980) has pointed out, because it does not explain why pleasant memories that are placed within a context of unhappy events tend to be recalled as unhappy. This, too, could not be considered as denial. Some theorists have tried to explain the phenomenon in terms of schema (Trowbridge,

1990). Memories are fitted into some overall schema. If they are incongruent with the schema, they are altered in a way that makes them fit. Cognitive dissonance theory has been invoked as an explanation by Parador (1987). Dissonant experiences are corrected in memory and the dissonance neutralized.

As an illustration of the phenomenon, Baldwin (1988) wrote, "People remember their years in high school as the best time of their lives. In the bloom of their youth they had no real responsibilities, lots of friends, good times, dances, games, and long vacations. At class reunions, remembrances of happy times dominate the joyful reminiscences of the good old days. Forgotten are the adolescent glooms, the tensions, the awkwardness, the failures, the zits, the rejections, the tests, the powerlessness" (p. 21). In his critique of Baldwin, Farber (1989) wryly observed that those who had a miserable time in high school probably did not attend the reunion. In his rejoinder to Farber (Baldwin, 1989) argued that Farber not only missed the point but unwittingly lent support to it. Non-attenders classified that entire period of their lives as unpleasant. Their unpleasant memories predominate, and even the few pleasant events that happened are distorted in recall.

There is much anecdotal clinical evidence of these kinds of memory distortions (Feldman, 1960; Port & Neufchattel, 1969; Williams, 1963). When it comes from a clinical population, the memories are usually sad or fearful. Patients obviously do not go to therapists in

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NOTE: This is a fictional article to be used solely for purposes of research education.

order to report happy experiences. Memory distortions and memory selectivity are to be expected. The schema that govern their selection and representation of past events are dictated by the setting and the purpose (Mossy, 1975).

Experimental evidence is scarce. What does exist is flawed, as Seltzer (1990) concluded in his astute review and critique of the literature. The purpose of this research was to garner further experimental evidence of this phenomenon. The overall plan was to present a series of different cartoons with neutral captions when embedded in a larger series of cartoons (a) with funny captions, (b) with sad captions, and (c) with fearful captions. These were presented on three different occasions. In three subsequent sessions 1 month later, participants were given a recall task to determine whether they correctly remembered the cartoons that were neutral as neutral or whether they distorted them in memory and recalled them to match the particular series within which they were first embedded.

The hypotheses of this study are as follows:

1. There will be more funny choices than neutral choices in recall of neutral captions of cartoons that were originally presented within the context of a series of funny cartoons.
2. There will be more sad choices than neutral choices in recall of neutral captions of cartoons that were originally presented within the context of a series of sad cartoons.
3. There will be more fearful choices than neutral choices in recall of neutral captions of cartoons that were originally presented within the context of a series of fearful cartoons.

Method

Participants

The participants in this experiment were 48 college juniors (48% women and 52% men) who were enrolled in a class on Communications. (Initially, there were 59 participants, but 11 had to be excluded because they were absent for at least one of the six experimental sessions.)

The class met Mondays, Wednesdays, and Fridays during the spring semester. All were advised that their participation was voluntary and were asked to sign a consent form in which they agreed to participate in a study on cartoons as a communication medium. They were not told that it was a study of memory because conscious effort to remember the cartoons would have confounded the study. The researchers gave them a full explanation of the study at its conclusion and explained the reasons for the deception. The investigators reported the findings to them after the data had been analyzed and led a discussion on the psychology of communication.

Procedure

Funny Stimuli. A series of 21 cartoons with captions¹ were projected on a screen to the assembled class with an exposure time of 30 s each. The investigator introduced them as a series of funny cartoons. Fifteen of them had humorous captions, and 6 had neutral captions. One of the latter, for example, portrayed a man dozing off in front of a TV set. The caption had the announcer saying, "Now for the late night news." The six neutral stimuli were randomly spread throughout the series. One month later, the 21 cartoons were again shown to the class, but without captions. The task of each participant was to recall the original caption. A multiple choice of two captions (one neutral, one humorous) was printed on a pad that was provided to each student. For one cartoon in the example the two choices were:

- _____ Now for the late night news.
- _____ Now for a late night snooze.

The cartoons that were originally humorous were presented at the recall session with the funny caption that appeared in the initial viewing along with a neutral caption as the alternative choice. In the following example, two choices accompanied a *New Yorker*-based cartoon in which a doctor said to a patient:

¹ The full set of all cartoons and captions are available for research purposes. Details about how to obtain them will be furnished upon request.

- I'm sorry I can't help you. You are too sick for managed care.
- I'm sorry I can't help you. You are too rich for Medicaid.

Sad Stimuli. Two days after the first exposure to the set of humorous cartoons, participants were presented with a set of 15 sad cartoons intermingled with 6 neutral ones. They were introduced to the class as a series of sad cartoons. One of the neutral ones was a drawing of a little boy holding out his shaggy-haired poodle to a veterinarian and saying, "Please shave my dog." In the recall exposure 1 month later, participants were asked to select the original caption from among the following two captions:

- Please shave my dog.
- Please save my dog.

The 15 sad cartoons were presented with the original sad caption and an added neutral caption. In one of these, a man is lying in bed and a doctor is taking his pulse but is glancing toward the window. The captions read:

- It looks like he's going.
- It looks like it's snowing.

Fearful Stimuli. Two days after the second series, the group was shown a third series presented as a collection of fearful cartoons. Fifteen had fearful captions, and 6 had neutral ones. By way of example, one of the neutral cartoons portrayed the rear view of a bulky woman whose figure partly obscured a man who was facing her. He was apparently holding something in his hand, but only his raised forearm could be seen. The caption was, "I'm on a diet. I beg you to put that bun away." One month later, when the cartoons were shown again, the students were asked to recall the original and were given the following two captions:

- I'm on a diet. I beg you to put that bun away.
- I don't want to die. I beg you to put that gun away.

An example of an originally fearful cartoon, with a neutral caption added for the recall ses-

sion, was of a dimly lit scene of a large man confronting a woman. The two choices were:

- Let go or I'll scream.
- Let's go for ice cream.

For the funny, sad, and fearful stimuli alike, the two captions that were presented for recall were counterbalanced. Half presented the original neutral caption first, and half led off with the affective caption that they had not seen previously.

Results

The mean percentages of distortions (incorrect choice on recall) were compared in three separate analyses: (a) for the funny series, (b) for the sad series, and (c) for the fearful series. Because there were 15 cartoons used in each of these series to establish the predominant context, but only 6 neutral cartoons embedded in each series, the numbers of incorrect choices were transformed into percentages. These percentages are referred to as the *distortion percentage*, and it is used as the dependent variable criterion measure.

Funny Series

The mean distortion percentage (neutral recalled as funny) was significantly greater than funny cartoons that were recalled as neutral, $t(46) = 2.13, p < .05$. The means were 33.4% for the former and 15.2% for the latter.

Sad Series

A mean distortion score of 20.5% was obtained for cartoons that were originally neutral but which were recalled as sad when intermingled in the sad series. This mean was not significantly different than the mean of 18.1% for cartoons that were originally sad being recalled as neutral, $t(46) = .84, ns$.

Fearful Series

Contrary to expectations, and in distinction to the funny and sad series, the fearful cartoons were recalled as neutral (28.2%) more often

than neutral cartoons were recalled as fearful (17.9%), $t(46) = 2.41, p < .02$.

The three comparisons of funny versus neutral cartoons, sad versus neutral cartoons, and fearful versus neutral cartoons are illustrated in Figure 1.

Discussion

Partial support was obtained for the hypotheses that predicted that neutral stimuli, after having been seen within the context of affective stimuli, tend to be distorted in recall to match the predominant context of the series. This notion held up admirably for a series that was composed of funny cartoons. Context, however, had no effect on recall of neutral stimuli that were originally embedded within a sad series. A contradictory result was obtained for fearful stimuli. Defensive mechanisms apparently operate to neutralize powerful fearful images or at least to wall them off and prevent their spread. They become, in effect, "benighted," as Antonio (1976) has suggested. Funny events become "more so" in recollection and generalize to their surround, fearful ones become "less so" and are contained, and sad events are not changed in recall.

There is no evidence, however, that these relationships remain fixed. In this study, the time interval was 1 month. It is quite possible that shorter or longer intervals might have yielded different results. Further research is needed to determine whether fearful events become progressively weaker in memory over longer periods of time. A second variable that may be a factor is the intensity of the stimulus or event. Different results could be obtained if the sad and fearful events were real, personal, and more intense. Another variable that could well be involved is the personality makeup of the respondent. Some people may have a proclivity to place a sad slant on the recall of events, of whatever kind. Others may slant memories in a fearful direction. We need to be cognizant of the possibility that these four variables—context of the event, intensity of the event, personality of the respondent, and amount of time lag—may be operating singly

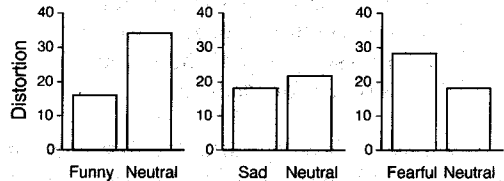


Figure 1. Distortion percentage in funny, sad, and fearful series.

and in interaction with each other to affect recall. There would be considerable value in future research that controlled or accounted for all of these variables.

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