SUMMARY
Memory issues are extremely important to communication inquiry. Conversational interaction requires participants to utilize their memory for a great variety of tasks. Everyday people meet, converse with each other, and depart with memories of their interactions. These memories affect future interactions, feelings about others, and even judgment of self and others.

Stafford and Daly (1984) highlighted the demands made upon memory in conversation: “A critical requirement for successfully completing any interaction is a functioning memory that permits people (1) generate relevant topic from the store of memories they have from previous interactions with others involved in the current exchange; (2) access and use diverse psychological schemes that hold and integrate both general and specific topical information; (3) recall general rules of social interaction and mesh them with the particular conversation; (4) adjust to new messages that arise as the conversation progress within the frame of remembered materials; (5) devise expectancies and trajectories for likely directions the conversations may take; and (6) Store in some suitable fashion, impressions and memories of the conversation for future use”.

It has been observed that sentences spoken in natural conversation convey to fundamentally different type of information: propositional information and pragmatic information. Propositional information is characterized as information about the objects and events referred to by the sentence. Pragmatic information is defined as information about the contents of the sentence in the social interaction, including information about the
speaker and his intentions, beliefs and his relations with the speaker. Sentences that convey a lot of pragmatic information referring to the speaker-listener interaction are said to be rich in interactional content. It has been found that sentences with high interactional content were remembered much better than sentences with low interactional content (Keenan, McWhinney, and Mayhew 1977).

Since interactions must be capable of storing and retrieving a great deal of information from memory in order to engage in communication, theories of interaction must be sensitive to the capabilities and limitations of memory. An exemplar is Capella and Folgar (1981) account of inconsistencies in attitudes and behaviours which is based on the distinction between semantic and episodic memory. Cognitive theories of communication appear promising (Planalp and Hewes, 1982) but will require careful consideration of the cognitive capacities of human beings, including their ability to retrieve information from memory to guide their own behaviors and interpret the behavior of conversational partners. Planalp and Hewes (1982) argued that retrieval issues have for reading implications for the communication scholars.

Moreover, an adequate conception of memory is also critical for communication research, which frequently employs verbal reports as a form of data. Limitations of subject’s ability to remember information bear directly on the veracity of verbal reports. Self report data is quite common in our literature. For example we ask subjects to reflect on their relationships, recall their viewing habits, remember critical incidents, or rate how likely they are to use various compliance gaining strategies. Despite the importance of the verbal report data to communication inquiry we know
little about human information retrieval capacities or the accessibility of particular kinds of information.

**Conversation Memory**- The information we acquire about people or environment is often conveyed in informal conversations. A person may tell us about someone he met or we may listen to people exchanging anecdotes about mutual acquaintance; later we may be called to convey our own impression of the individual who was described. We presumably do this on the basis of cognitive representation we had formed of the person while listening to the conversation. So conversation memory may be defined as “The ability of an individual to correctly recall or recognise the contents of the conversation either verbatim or semantic”.

Stafford and Daly (1984) investigated the conversational memory of the participants in conversation. They used free recall and reported that only 10% of all ideas units in the conversation were recalled by participants (The best subject only 40%), prompting the conclusion that people abilities to recall something as complex as conversations are limited.

However other researches obtained results showing higher recall of conversation than Stafford and Daly’s results. MacWhinney, Keenan and Reinke (1982), using both participants and observers as subjects, reported that recognition memory ranged from 71% to 82%. Kintsch and Bates (1977) indicated that students were able to recognise a considerable amount of information from a lecture even after 5 days. Benoit and Benoit (1986) employing a recognition test reported that conversation interactants were able to remember over 90% of specific verbal communicative behavior. These studies demonstrated that a considerable amount of conversational
information is stored in memory and subjects are able to retrieve it accurately.

The obvious difference between these studies that carried out by Stafford and Daly (1984) and that of other studies is that Stafford and Daly used a form of recall (free recall), whereas other researchers used recognition test and hence reported a great amount of retention of conversation. Recognition tests are generally accepted to be more sensitive than recall, as Bahrick (1964) notes “It has been found in most instances that recognition performance is superior to recall performance of the same target items.” The free recall procedure employed by Stafford and Daly (1984) instructed the subjects at the end of their conversation “to write down (or orally report) everything that he or she could remember about the conversation. Stafford and Daly argued recognition tests are less useful because memory structures are not isomorphic with the form of these tests. They suggested that free recall procedures “more clearly tap mechanisms that operate during everyday Conversation”. Because interactants must access information quickly by drawing “freely from his or her store of memories”.

Irrespective of the differences in the findings obtained by different researches, the importance of conversation memory can not be underestimated. In fact conversation memory has for reaching implications in the social network. Some of the major implications and significance of conversation memory may be summarized as follows:

1. Conversation memory for various aspects of conversation is an important component of social interaction. Impression:
often formed and social judgement made on the basis of what is remembered from verbal interactions.

2. Conversation memory may play a crucial role in social bonding, exchanging and concurring on reactions and prospective probably makes an interaction more enjoyable and a partner more likeable.

3. The descriptive studies of conversation memory (Edward & Middleton, 1986a, b; Tenny, 1986) support the importance of personal reactions; exchange of personal information, teach others about what the person is: What one likes, dislikes, cares about etc.

4. The purpose of conversation memory is to search for meaning to learn about others and explain ourselves; and to build and maintain social bonds.

Verbal communication is a central and ubiquitous features of social interaction, and researchers have paid increasing attention to the social psychology of language in recent years (e.g. Clark, 1985; Higgins 1981; Kraut and Higgins, 1984).

A consideration of language is important because, as Kraut and Higgins (1984) have suggested, verbal communication represents a rich intersection of social and cognitive processes. The social cognitions of speakers and listeners play a crucial role in many different aspects of language use. For example, the successful use of referential expression depends on social knowledge that is shared by the interlocutors (Clark and Carlson, 1982; Clark & Marshall, 1981; Krauss, Vivekananthan and Weinheimer, 1968). Moreover, social cognition also plays an important role
in the interpersonal aspects of language use. Speaker often talks differently as a function of various aspects of the social situations (Blom and Gumperz, 1972; Giles & St. Clair, 1979) and certain characteristics of the listeners such as relative status (Cansler and Stiles, 1981) and age (DeFaulo and Coleman, 1986). Thus various features of language use may reflect the speaker's view of his or her relationship with the listeners and situation they are in.

To address the question of what is remembered from a conversation, it is first necessary to consider what is potentially memorable from a conversation. In other words, it is necessary to first delimit some of the dimensions of language use. One important distinction is often made between the surface structure of a sentence (i.e. the exact wording) and the underlying meaning or propositional content. When people talk, they are trying to do the things with their words (e.g., requesting, informing, promising etc) that is, they are performing what are commonly referred to as speech acts. Thus, speech acts can be regarded as an important dimension of language.

An important point about speech acts is that, depending on the context, the same speech act (e.g., to request x) can be performed with different syntactic forms (e.g. declarative - "I would like x"; imperative - "Give me x") and with utterances having different propositional content (e.g. "I need x," "I would like x" etc).

Hence, Grice's (1975) theory suggests that the ability of speakers to mean more than they say (i.e. convey non literal meaning) depends on
shared knowledge regarding a set of maxims for how conversation should proceed.

It has been suggested that there are a numbers of dimensions of language (Brown and Levinson, 1978; Clark and Shunk, 1980; Ervin-Tripp, 1976; Lakoff, 1973). Among these dimensions, assertiveness, politeness, request, humorous, congruent and incongruent may be regarded as social dimension of language.

Much of early work on memory for verbal material has suggested that memory for the surface structure of sentences is poor relative to memory for the underlying content (Jarvella, 1971; Sachs, 1967, 1974). In other words, there is a strong tendency for individuals to remember what was said (Prepositional Content) but not how it was said. Later research has suggested a number of exceptions to this general finding. For example, memory for wording of remarks can be quite good if subjects are forced to attend to this dimension (Graesser and Mandler, 1975) or if the remarks (e.g. jokes or insults) have interactional value (Bates, Kintsch, Fletcher and Giuliani, 1980; Bates, Masling and Kintsch, 1978; Keenan MacWhinney and Mayhew, 1977).

There is substantial body of evidence suggesting the existence of systematic biases in memory for the wording of remarks (Bock and Bower, 1974; Brewer and Hay, 1984; Wertsch, 1975). For example, Brewe and Hay (1984) had subjects read a text that had been written in one of five different styles (e.g. academic, business etc) subjects were later asked to recall the text. One of the major findings was that subjects did not recall the material verbatim but did produce items that were consistent with the style of the
presented text. Brewer and Hay interpreted this as evidence for reconstructive processes. This study along with others (e.g. Wertsch 1975) demonstrated the importance of Contextual factors in memory for surface structure. Consistent with a suggestion made by Neisser (1967), this work suggests that memory for verbal material is a synthesis of the actual trace of the verbalization and more general information as well.

As stated earlier there are a numbers of dimensions of language. More specifically verbal information may be expressed using different version of the language. These versions may be categorized as assertive version, request version, humorous versions and congruent-incongruent version. There are considerable researches which have demonstrated the effect of assertive and request version of conversation on conversation memory. Holtgrave, Srull & Socall (1989) carried out three experiments, to examine the effect of information about a speaker’s status on memory for assertiveness of his or her remarks. The findings of their study clearly demonstrated that information does affect conversation memory for the assertiveness of his or her remarks, i.e. under certain conditions the remark of the high status speaker were remembered as more assertive than the same remarks uttered by low status speaker. Subject in the high status speaker condition recalled both the assertive and non-assertive remarks as more assertive than did subjects in equal status condition. These investigators also found that subjects recalled assertive version of remarks more than non-assertive version of remarks. Though these findings provided evidence for the existence of relation between one’s speech form (assertiveness) and interpersonal variable (speaker’s status), the result cannot be taken for granted as these investigators have ignored two important variables i.e.
listener’s (subjects) status and listener’s emotional mood. Thus it is possible that if the listener himself has high status, he might have not remembered the remarks of high status speakers as more assertive. In other words conversation between high status speaker and a low status addressee is heard by a person who also occupies high status, his conversation memory might have been affected in different way i.e. he might have not recalled, the assertive and non-assertive remarks as more assertive since social cognitions of both speakers and listener play a crucial role in the memorization of conversational remarks. Hence, Ahmad (1997) studied conversation memory as a function of listener’s emotional mood, status, version of conversation and speaker status. The main finding of our concern was that emotional state of the listener had differential effect on conversation memory. He found that depressed subjects have better conversation memory than elated subjects. However, Schmidt (1994) found that humorous sentences are better remembered than nonhumorous sentences. These conflicting findings obtained by Ahmad (1997) and Schmidt (1994) infact motivated the present author to undertake this investigation.

There is substantial body of evidence to the effect that humorous stimulus material influence memory to a great extent. Hence conversation memory is not likely to remain unaffected by humorous stimulus material.

Thus, it has been found by numerous researchers that humorous material is retrieved in greater amount than nonhumorous material. For instance Kintsch and Bates (1977), Duncan, Nelson and Frontzak (1984), Gelb and Zinkhan (1989) and Schmidt (1994), have reported positive effect of humor on memory. However, there are some studies which have found just opposite results. For instance, Kaplan and Pascoe (1977) and Zillmann
et al. (1980) have found negative effect of humour on memory. The findings of these investigators, though conflicting, make it crystal clear that humorous material has an effect on memory. It is therefore, logically assumed that conversation memory is also likely to be affected by humorous version of conversation. It is one of the objectives of the present investigation. More specifically, the present study is designed to explore how humorous version of conversation affects conversation memory.

Another consideration that motivated the present researcher to undertake this study is substantial body of evidence showing significant impact of incongruity not only on learning and memory but also on the formulation of impressions about other persons which in turn affect the development of interpersonal relationship. Since conversation and retention of conversation also affects interpersonal relationship, it becomes highly significant to investigate the effect of incongruity on conversation memory.

Hastie and Kumar (1979) published their classic paper in which they demonstrated that expectancy-incongruent items of information are recalled with higher probability than expectancy-congruent items. Hastie (1980) introduced an associative network model to account for these findings. This model was further developed and enormous researches were carried out to test the model (Srull, 1981; and Srull & Wyer, 1980). This model provided an elegantly simple account of why incongruent items are better recalled. The model has remarkably specified about underlying processes. In particular, the model specified effects that occur during information encoding, it detailed the consequences of those effects for how information is represented in memory and it described the process by which stored items
are retrieved from memory. The model also makes very specific statements about the cognitive processes that underlie social information processing.

However, Crocker and Vitkus (1983) have observed that impressions of people are resistant to change. Information that contradicts an initial impression of a person has relatively little impact on impression (Schneider, Hastrof, and Ellsworth, 1979). At the same time, research on memory for social information indicates that information that contradicts an impression of another person is particularly likely to be recalled; information that violates our impressions of another is more likely to be recalled than information that confirms an impression.

Prior theorists have suggested two basic types of distinctiveness effects: those due to primary distinctiveness and those due to secondary distinctiveness (Schmidt, 1991). Primary distinctiveness effects occur when the properties of an item deviate from the properties of other items in a given study list. Such distinctiveness effects have been demonstrated by isolating physical features, such as font size or color of an item, from other items in a list (e.g., Fabiani & Donchin, 1995; Kishiyama & Yonelinas, 2003) or by isolating an item from other items in a list via membership in a semantic category (Fabiani & Donchin, 1995; Geraci & Rajaram, 2004; Hunt & Lamb, 2001; Schmidt, 1985; von Restorff, 1933). In these cases, the isolating feature was contrasted with other homogeneous features in the experimental context. Secondary distinctiveness, on the other hand, occurs when the properties of an item deviate from the properties of items in one's semantic memory, or long-term store. Thus, this type of distinctiveness effect occurs when deviance can be defined in terms of dissimilarity of an inherent characteristic of an item relative to the characteristics of a class of
items or a particular study list. An example of this type of distinctiveness effect is the memory advantage of orthographically uncommon/exceptional words over regular words (Hirshman & Jackson, 1997; Hunt & Elliott, 1980; Rajaram, 1998). Given this characterization of distinctiveness effects, font fan effects may be thought of as an instance of primary distinctiveness.

One central question in the literature on distinctiveness effects is the extent to which the memory advantage for distinctive items derives from encoding-based processes (e.g., salience or enhanced attention; Fabiani & Donchin, 1995) or retrieval-based processes (e.g., item-specific processing used to access details of an encoding episode; Hunt & McDaniel, 1993). Whereas the literature on distinctiveness effects in recall has generally suggested that retrieval processes must play at least some role (Schmidt, 1991), the literature on distinctiveness effects in recognition memory has been less clear on the mechanisms involved.

Reder et al. (2002) attributed fan effects, and by association, font distinctiveness effects, to retrieval-based processes. Hunt and his colleagues (Dunlosky, Hunt, & Clark, 2000; Hunt, 2003; Hunt & Lamb, 2001; Hunt & McDaniel, 1993; Hunt & Smith, 1996; Smith & Hunt, 2000) have consistently argued that distinctiveness functions to separate items in memory from one another at retrieval. Further, Hunt (2003) has recently argued that distinctiveness can play a role both to enhance recollection of studied items as well as to reject familiar, unstudied items. Rajaram (1998) argued that distinctiveness is critical to the experience of recollection phenomenology, whereby items that contain perceptually or conceptually distinctive features give rise to the experience of recollection. Thus, these three perspectives would all argue that font fan effects are a product of
retrieval-based processes. On the other hand, Kishiyama and Yonelinas (2003) have suggested that distinctiveness influences recognition memory due to processes occurring at both encoding and retrieval. In particular, Kishiyama and Yonelinas argue that distinctiveness influences both recollection and familiarity-based recognition memory. Furthermore, these authors argue that the effect of distinctiveness on recollection is produced by encoding-based factors, whereas the effect of distinctiveness on familiarity is produced by retrieval-based factors. Finally, many standard views of distinctiveness effects largely attribute the memorial advantage of distinctiveness to encoding-based processes, such as enhanced attention (e.g., Jenkins & Postman, 1948) or salience (e.g., Green, 1956; Schmidt, 1991).

Related to concept of incongruently is the construct known as distinctiveness. The constructs of incongruency and distinctiveness may be used interchangeably in the memory literature. Distinctiveness has been variously defined as the property that separate items or events that share few rather than many features with other items in memory (Nelson, 1979). According to Hunt and McDaniel (1993) and Schmidt (1996) distinctiveness emerges due to differences rather than similarities among items. In the opinion of Hunt and Mitchell (1982) distinctiveness arises from presentation of isolated items in the context of background items. Moreover, Schmidt (1991) says that distinctiveness characterizes events that are incongruent with active conceptual frameworks or that contain salient features not present in active memory. These definitions of distinctiveness make it crystal clear that there is a common thread among these definitions: the differences among items that presumably uniquely specify some items or the
salience of items that make them standout from among the background items.

It has been observed that distinctiveness has different effects on memory performance, depending on how it is defined; suggesting that concept of distinctiveness has been over applied. Theoretical explanations of the effect of distinctiveness on memory fail to specify what the different definitions of distinctiveness have in common and fail to compass adequately the broad range of phenomena to be explained. In view of this theoretical problem, incongruity hypothesis was developed as a refinement of the distinctive hypothesis (Eysenck, 1979; Hunt and Elliott, 1980). Since the concept of distinctiveness has been difficult to define and clear operational definition of distinctiveness has not offered, the incongruity hypothesis was proposed. Unlike, distinctiveness, incongruity has been clearly defined. Incongruity results from a mismatch between features present in working memory and features activated by an item. The incongruous items lead to an orienting response and, as a result, receive extra attention during encoding and increased storage of individual item information (Schmidt 1991). These processes are thought to be automatic in the sense that they are not the result of an intentional strategy and do not deprive other cognitive processes of attentional resources.

The theoretical construct of distinctiveness/incongruity emphasize that the presentation of unique properties enhance memory (Hunt and Elliott, 1980; Hirshman and Jackson, 1997). The isolation or von Restorff, effect is perhaps the best known demonstration of the distinctiveness effect in memory and refers to the finding that people tend to have very good memory
for unusual or incongruent items (Hunt, 1995; Geraci and Rajaram, 2004; Brandt, Gardinar and Macrae, 2006; Park, Arndt and Reder, 2006).

As stated earlier, while dealing with the processing of congruent and incongruent information, Crocker and Vitkus (1983) observed that impressions of people are resistant to change while information that contradicts an initial impression of a persona is recalled better than the information that confirms an impression (Hastie and Kumar, 1979; Hastie; 1980; Srull, 1981). Hence there was an apparent paradox of person perception. The researchers suggested three ways to resolve this paradox. The first was that the information recalled about a persona and the impression one has of him or her may be independent. The second possible resolution was that the process of integrating incongruent information into an impression, people may link the incongruent information to the information they have that fit their initial impression. Thus, the additional thought given to incongruent items may actually strengthen the existing links to congruent information in memory, and reinforce the initial impression. The third possible solution, as suggested by Crocker and Vitkus (1983), stems from the findings that people generally attribute behavior that is inconsistent with their impression of a person to situational causes (Bell, Wicklund, Macko and Larpin, 1976; Deaun and Emswiller, 1974; Feldman-Summers and Kiesler, 1974; Hayden and Mischel, 1976; Kulik, 1983). Behavior that is attributed to situational causes is irrelevant to an impression of what the person is like. Thus, when incongruent behavior can be attributed to situational causes the behavior may be recalled but it should have less impact on impression. Crocker and Vitkus (1983) provided an
empirical support, for all three of the possible resolutions of paradox of person perception.

Though Crocker and Vitkus (1983) obtained empirical support for their all the three resolutions, their findings may be subjective to alternative explanation. First, it may be possible that incongruent information commanded greater amount of attention leading to more rehearsal as compared to congruent information. Thus, this attention–rehearsal mechanism may be responsible for greater recall of incongruent information as compared to congruent information. Secondly, the mood of the subject may be a critical factor in determining whether an information is perceived as congruent or incongruent, for example if a subject is in an elated mood than humorous information mixed with nonhumorous information may not be perceived as incongruent information whereas a subject with depressed mood may perceive the same information as incongruent. The present study is designed to test these assumptions in the area of conversation memory, for it is a conversation memory that play vital role in the formation of impression about the other persons.

Still another important consideration that motivated us to undertake this proposed research is the existence of substantial body of evidence demonstrating mood biasing effect in memory. While studying the relation between different emotional states and memory, subjects are induced to feel happy or sad while learning list of words. They recall those lists better if they are induced to the same mood at the time of recall than if they are induced to a different mood, an effect usually called mood dependents retrieval (Bower et al., 1978; Bartlet et al., 1982; & Schare et al., 1984). The mood dependent retrieval effect is also demonstrated by the tendency of the
subjects to show better recall performance when they experience same mood during encoding and retrieval as compared to when they experience different moods during encoding and retrieval. (Teasdale & Fogarty 1979; Taylor 1981; Natale & Hantas, 1982; Snyder & White, 1982). Thus Schmidt (1994) studied memory for humorous and nonhumorous version of sentences. Subjects recall performance was affected by their emotional states. Those who were in elated mood remembered humorous sentences more than nonhumorous versions of sentences. But those who were in depressed mood recalled more nonhumorous version of sentences than humorous version of sentences.

The above mentioned well established findings make it crystal clear that emotional mood of the subjects is a potent determiner of memory and hence, conversation memory is not an exception.

A topic of major theoretical interest within cognitive psychology pertains to the bidirectional relations among cognitive and emotional processes. In the existing literature, most attention has been focused on memory phenomena of various kinds (Blaney, 1986; Bower; 1981; Ellis & Ashbrook, 1987, 1988; Johnson & Magaro, 1987). And almost without exception, the research has focused on “conscious” or explicit memory: the person’s conscious, intentional recollection of some previous episode most commonly reflected in standard tests of recall and recognition. So, for example, congruence between the individual’s mood states at encoding and retrieval appears to affect the accessibility of memories (Eich & McCalfe, 1989). The effects of mood on memory fall into three general categories: (a) Mood-dependent memory effects, where retrieval is facilitated by a match between encoding and retrieval mood states; (b) Mood-congruent memory
effects, where mood at time of encoding or retrieval facilitates retrieval of affectively congruent material; and (c) resource allocation effects, where extreme or negative mood states at encoding or retrieval impair processing. All these effects have been documented in studies of explicit memory, employing conventional tests of recall or recognition. Moreover, it is important to recognize that mood is not just a state, like sleep or hypnosis that alter perception or induces a kind of amnesias. Mood is also a contextual cue, like other cues, that is processed when memories are encoded and guides the course of retrieval. In an effort to understand the apparent unreliability of context dependent memory, Eich (1980, 1989) has argued that state-dependent memory is a cue-dependent phenomenon that critically depends on the nature of the cues available at retrieval. From his point of view, a primary reason for inconsistency in the results of studies on context-dependent memory findings is the tendency for other stronger cues to overshadow the usually weak context cue. These potentially stronger cues may include experimenter presented or subject generated cues. So, for example, state dependent effects on memory are greatest under conditions of free recall, as opposed to cued-recall or recognition tests (Eich, 1980, 1989). And environment-dependent memory effects are abolished when subjects are instructed to imagine the environment in which the items had been studied (Smith, Glenberg & Bjork, 1978).

The foregoing analysis suggests two conditions under which chances of finding mood dependency would be increased: (a) if the link between the subjects' mood and the list items is strengthened; and (b) if other potentially superseding cues are eliminated, thereby highlighting the mood cue. With respect to the mood-item link, there is no reason to think that this association
is encoded automatically (Kihlstrom, 1989). Rather, it seems likely that the mood-item connection will most likely be made if subjects actively attend to their moods.

In contemporary psychology, the cognitive processing of emotional information has been assigned a special status. An important idea is that emotion-relevant information has a high priority in demanding attention because of its high motivational relevance (Lang et al. 1997): threat signals danger to be dealt with; happiness signals opportunities for elaboration, social bonding, mating behavior, etc. At the same time, the ability to selectively attend and respond to relevant stimuli is of crucial importance to display adaptive behavior and depends on our ability to focus on relevant information and inhibit irrelevant or distracting information.

In the past decades, a wealth of studies has examined selective attention for emotional information. These studies have most frequently used emotional modifications of cognitive-experimental tasks, with the emotional Stroop task (Stroop 1935) as the best-known example. The typical finding in the emotional Stroop task is that patients are often slower to name the colors of words associated with concerns relevant to their clinical condition (Williams et al. 1996). These results have been interpreted in terms of selective attention for and reduced inhibition of emotional information. A problem of the majority of the cognitive-experimental tasks used to investigate selective attention is that they only provide a coarse measure of attentional processing: attention is conceived as a unitary concept, whereas several models suggest that selective attention involves multiple components (e.g., Posner et al. 1987). Hereby, at least two different mechanisms can be distinguished: active selection of relevant information and active inhibition
of irrelevant stimuli (Hasher and Zacks 1988). In most tasks, it is not possible to distinguish between those two aspects. For instance, in the emotional Stroop task the task-relevant (color of the word) as well as the task-irrelevant informations (semantic content) are presented within the same stimulus presentation, which causes difficulties in disentangling the contribution of activation and inhibition mechanisms. A paradigm that offers a more valid operationalization of the mechanisms underlying the inhibition of attention to emotional information is an affective modification of multi-stimulus task named negative priming (Tipper 1985; Wentura 1999; Joormann 2004). This selective attention task allows measuring attentional inhibition of affective information. A complete trial in the negative affective priming paradigm (NAP) includes two separate trials: prime trial and a probe trial. Prime as well as probe trials consist of a stimulus pair consisting of a distracter and a target (e.g., pictures of emotional faces). The participant is instructed to evaluate the target (e.g., picture in a black frame) as positive or negative, while ignoring (inhibiting) the distracter (e.g., picture in a grey frame). In the experimental condition the valence of the distracter in the prime trial corresponds with the valence of the target in the probe trial. In the control condition there is no such similarity between prime and probe. Effective inhibition of the stimulus valence of the distracter in the prime trial leads to a slowdown in responding to the target in the probe trial when this target shares the same valence. This slowdown is called the Negative Affective Priming (NAP) effect and can be considered as a valid index of inhibitory function towards affective material (Wentura 1999).

Positive affective states are generally related to a more intuitive, generative and "loosening" or broadening cognitive processing style
associated with an increased cognitive elaboration and flexibility (Fiedler 1988; Isen 2001; Aspinwall 1998). An interesting framework within this context is the broaden-and-build theory of Fredrickson (2001). This theory states that positive emotions are characterized by a broadening of the thought-action repertoire, expanding the range of cognitions and behaviors that come to mind. One prediction of this model is that positive emotions widen the scope of attention. Several studies have shown that individuals in a positive mood display a global, holistic attention processing (e.g., Gasper and Clore 2002; Fredrickson and Branigan 2005). Other research could prove that positive mood leads to an increased cognitive flexibility that is accompanied by an increased distractibility (Dreisbach and Goschke 2004). Reduced inhibitory functioning in a positive mood might explain the observed broadened “thought-action” repertoire as well as the observed increased distractibility during positive mood (Seibert and Ellis 1991). Yet, research on the role of attentional inhibition processes under positive affect is rather scarce. Kuhl and Kazen (1999) demonstrated that Stroop interference disappeared under induction of positive affect. Based on the above-mentioned argumentation, they hypothesized that inhibitory function during a positive mood will be significantly reduced as compared with a neutral mood condition.

Recently, the NAP-task has been applied to investigate inhibition of positive and negative emotional stimuli in dysphoric students (Joormann 2004) and depressed patients (Goeleven et al. 2006a). In those studies, results revealed that participants with elevated depression scores failed to inhibit mood-congruent information (reduced NAP-effect), showing that depression is associated with a specific inhibitory deficit for negative
information. At present an important question remains whether this observed inhibitory deficit is a vulnerability factor related to a stable trait or a variable component associated with emotional state. Based on the existing literature, arguments can be found for both ideas. An indication for the trait hypothesis is that high levels of rumination, which are observed in depressed individuals and related to its maintenance (Nolen-Hoeksema 1991), have been linked to dysfunctional inhibition mechanisms (e.g., Linville 1996; Joormann 2006). However, the inhibition concept also fits with the general assumption that a negative mood impairs the amount of available cognitive capacity that can be allocated to a certain task as a consequence of intruding irrelevant information in attentional sources (Ellis and Ashbrook 1988). Indeed, it has been found that induced stress reduces inhibition function by using a non-emotional negative priming task (Braunstein-Bercovitz 2003; Skosnik et al. 2000).

The most recent study was carried out by Goeleven, DeRaedt and Koster (2007) in which they demonstrated that the ability to inhibit affective information plays a major role in efficient cognitive processing. In this study the effect of mood induction on inhibitory processing of emotional material was investigated. In Experiment 1, performance on a negative affective priming task (NAP) following negative and positive mood induction (MIP) was compared to a neutral mood condition. Results revealed that, as compared with the neutral mood condition, inhibitory function for affective material was unaffected by negative MIP. However, after the positive MIP, inhibitory processes were significantly impaired. In Experiment 2, they replicated and extended the findings on positive affect and inhibition. The
data concerning positive mood fit with the general findings that positive mood often leads to a "loose, flexible" processing mode.

As far as effect of mood on memory is concerned, it has been widely investigated by numerous researchers. The main interest of these researchers was mood dependent memory and mood congruent memory: Some researchers demonstrated dependent memory in implicit memory but not in explicit memory (Mathews, Mogg, May, and Eysenck, 1989), whereas other researchers found just opposite results i.e. they demonstrated mood dependent memory in explicit memory (Teasdale and Fogarty 1979; Taylor 1981; Natale and Hantas, 1982; Snyder and White, 1982). However, mood congruent memory has been demonstrated consistently by large number of investigators (Gilligan & Bower, 1984; Laird, Wagner, Halal, and Szegda, 1982; Madigan & Bollenbach, 1982; Snyder & White, 1982; Teasdale & Fogarty, 1980; Teasdale & Taylor, 1981; Teasdale & Russell, 1983).

The foregoing discussion highlights the facts that mood is an important variable in memory studies. Like physiological state and environmental surround, mood is a feature of an event that can be encoded along with other aspects of a memory and serve as a potential retrieval cue. Like the physiological states induced by psychoactive drugs, it can affect the deployment of attention towards some features of environment as oppose to others. Thus it is established beyond doubt that emotion evoking qualities of stimulus have a profound impact on memory processes. It is evident from the publication of large numbers of journal articles and books on memory processes and emotion. The "Handbook of Emotion and Memory: Research and Theory" by Christianson (1992) is a recent addition in the existing literature on memory and emotion.
Further more, the mood and memory research induces a new, intriguing variable to the memory equation. Though, since the time of Aristotle cognition and affect have been assumed to be radically different so different that they might have little to do with each other. However, recent work in mood and memory has made it crystal clear that emotions affects memory processes in the same way as other cognitive activities are affected. Generally a question is raised: How can two such different things as emotions and cognitions have such similar affect? The answer of this question was scientifically given by Ellis and Ashbrook (1989) and Bower (1981) who believed that it is the feelings, not some other component of emotional episode which produces memory affects. According to them a normal emotional episode consists of at least six easily distinguished components: the eliciting event, the appraisal of that event, patterns of autonomic response, expressive behavior, instrument action, and the feeling. Ordinarily, all these components occur together. Consequently, any of these components could mediate the memory affects. Thus, Laird, Wagenert, Halal and Szegda (1984) have demonstrated that only the feelings affect cognitive processes. In short, the theories identify the emotional feeling as that which affect memory.

A few studies have investigated the effects of emotional state on the retrieval of personal experiences, such as early childhood memories or more recent personal events (Goldstein & Ellis, 1983; Siegal et al., 1979; Madigan & Bollenbach, 1982; Teasdale & Fogarty, 1979; Teasdale et al., 1980). The evidence has been rather inconsistent with regard to mood effect on these memories. For instance, some investigators have obtained findings which are consistent with a mood congruency effect on the recall of personal memories.
(Forgas, Bower, & Krantz, 1984; Madigan & Bollenbach, 1982, Teasdale & Fogarty, 1979; Teasdale et al., 1980). Other researchers have been unable to support a mood congruency effect on the recall of early childhood memories (Siegal et al., 1979).

Whereas the network theory would suggest a facilitation of the mood with regard to the recall of personally-relevant events which are associated with one’s prevailing mood (Bower, 1981), the resource allocation model predicts the recall of personal memories which are highly integrated in the memory system to be relatively impervious to the effects of emotional states (Ellis & Ashbrook, 1988). Clearly, more research needs to be conducted focusing on the effects of moods on the recall of personal memories to resolve these inconsistent findings evidenced in the literature. Hence the present study is designed to explore how listeners’ mood affects conversation memory. In short in the light of existing findings regarding mood dependent memory and mood congruent memory, it is highly logical to assume that if the listener is in a state of elated mood then he may recall humorous content of the conversation more than nonhumorous content of the conversation. Further more it may also be assumed that if the listener is in a state of depressed/sad mood, he may recall humorous content of the conversation less than the subject with elated mood. It is further hypothesized that both subjects with elated mood and subjects with depressed/sad mood are likely to recall incongruent content of the conversation more as compared to congruent content of the conversation. The present study is designed to test these assumptions also. The findings of the present study will not only open a new area of research in memory but will also provide significant information about the development of
interpersonal relations and will highlight the process of impression formation. Furthermore, the findings of the present study may also be applied in education settings like preparing syllabai and teaching methods.

The main objectives of the study were (1) to investigate the impact of humorous-nonhumorous version of conversation on conversation memory, i.e. to what extent humorous and nonhumorous versions of conversation facilitate or inhibit conversation memory; (2) to investigate the influence of congruent-incongruent version of conversation on conversation memory, i.e. to what extent congruent and incongruent versions of conversation facilitate or inhibit conversation memory; (3) to investigate the effect of listener's mood on conversation memory, i.e. to what extent elated, depressed, and neutral mood of the listener facilitate or inhibit the conversation memory; and (4) to examine the various interactional effects of independent variables i.e. humorous-nonhumorous, congruent-incongruent versions of conversation and mood on our dependent variable i.e. conversation memory. To be more specific the present study was designed to answer the following questions:

(1) Does humorous-nonhumorous version of conversation influence conversation memory?
(2) Does congruent-incongruent version of conversation influence conversation memory?
(3) Does listener's mood influence conversation memory?
(4) Is there an interactional effect between humorous-nonhumorous and congruent-incongruent versions of conversation on conversation memory?
(5) Is there an interactional effect between humorous-nonhumorous version of conversation and listener's mood on conversation memory?

(6) Is there an interactional effect between congruent-incongruent version of conversation and listener's mood on conversation memory?

(7) Is there an interactional effect among humorous-nonhumorous, congruent-incongruent versions of conversation and listener's mood on conversation memory?

In order to answer the above questions, a 2X2X3 factorial design in which two task variables (two versions of conversation i.e. humorous-nonhumorous and congruent-incongruent) and one personality variable (listener's mood) were used in this experiment. The third variable i.e. personality variable was varied in three ways and the two task variables were varied in two ways. The three values of personality variable i.e. listener's mood were (a) elated mood, (b) depressed mood and (c) neutral mood. The two values of first task variable were (a) humorous version of conversation and (b) nonhumorous version of conversation. Similarly the two values of second task variable were (a) congruent version and (b) incongruent version. Thus there were twelve groups of subjects as given below:
Group I  Elated mood, Humorous and Congruent versions of conversation.
Group II Elated mood, Humorous and Incongruent versions of conversation.
Group III Elated mood, Nonhumorous and Congruent versions of conversation.
Group IV Elated mood, Nonhumorous and Incongruent versions of conversation.
Group V Depressed mood, Humorous and Congruent versions of conversation.
Group VI Depressed mood, Humorous and Incongruent versions of conversation.
Group VII Depressed mood, Nonhumorous and Congruent versions of conversation.
Group VIII Depressed mood, Nonhumorous and Incongruent versions of conversation.
Group IX Neutral mood, Humorous and Congruent versions of conversation.
Group X Neutral mood, Humorous and Incongruent versions of conversation.
Group XI Neutral mood, Nonhumorous and Congruent versions of conversation.
Group XII Neutral mood, Nonhumorous and Incongruent versions of conversation.

The design of the experiment is diagramatically given in Table I.
<table>
<thead>
<tr>
<th>Groups (G)</th>
<th>Listeners (subject) Emotional Mood</th>
<th>Version of Conversation</th>
<th>Style of conversation</th>
<th>Presentation of fictional conversation</th>
<th>Retention Interval</th>
<th>Test of Retention</th>
</tr>
</thead>
<tbody>
<tr>
<td>G I</td>
<td>Elated</td>
<td>Humorous</td>
<td>Congruent</td>
<td>Each subject was asked to read a fictional conversation (FC) ten times. It may be humorous-congruent, humorous-incongruent, nonhumorous-congruent, and nonhumorous-incongruent.</td>
<td>After the presentation of FC, subjects were asked to perform a distractor task for 5 minutes. It was introduced to prevent rehearsal of the stimulus materials i.e. FC</td>
<td>After retention interval, the subjects were asked to recall the remarks of Mr. Ahmad. Subjects were also instructed to use as much as original words as possible in recall. Ten minutes were given to complete the recall task.</td>
</tr>
<tr>
<td>G II</td>
<td>Elated</td>
<td>Humorous</td>
<td>Incongruent</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G III</td>
<td>Elated</td>
<td>Nonhumorous</td>
<td>Congruent</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G IV</td>
<td>Elated</td>
<td>Nonhumorous</td>
<td>Incongruent</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G V</td>
<td>Depressed</td>
<td>Humorous</td>
<td>Congruent</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G VI</td>
<td>Depressed</td>
<td>Humorous</td>
<td>Incongruent</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G VII</td>
<td>Depressed</td>
<td>Nonhumorous</td>
<td>Congruent</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G VIII</td>
<td>Depressed</td>
<td>Nonhumorous</td>
<td>Incongruent</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G IX</td>
<td>Neutral</td>
<td>Humorous</td>
<td>Congruent</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G X</td>
<td>Neutral</td>
<td>Humorous</td>
<td>Incongruent</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G XI</td>
<td>Neutral</td>
<td>Nonhumorous</td>
<td>Congruent</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G XII</td>
<td>Neutral</td>
<td>Nonhumorous</td>
<td>Incongruent</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
180 subjects were used in the present study. More specifically there were 15 subjects in each group. These 180 subjects were randomly selected from undergraduate students, Faculty of Social Sciences A.M.U, Aligarh. All the subjects were matched on all relevant variables like age, education, physical and mental health and sex.

A fictional conversation (see Appendix I) was prepared by the author which was used in the present study. This fictional conversation consisted of large number of statements forming conversation between two persons (Mr. Ahmad and Mr. Sharma). The content of conversation focused on two issues namely health and business deal. The conversation on the issue of health was so prepared that either the conversation was humorous or nonhumorous. The conversation on the issue of business deal was so prepared that it was totally nonhumorous. These conversations on the issues on ‘health’ and ‘business deal’ were given to a group of 50 subjects who were asked to rate humorousness and nonhumorousness of each statement on five point rating scale. On the basis of these ratings only those statements were retained which were rated either as humorous or as nonhumorous. The mean rating of humorous statement was 4.0, whereas the mean rating of nonhumorous statements was 1.25. It is important to mention that this group of subjects did not participate in the actual experiment.

Humorous-Congruent version of conversation was prepared by using all the statements which were humorous in nature and were on the same issue i.e. ‘health’. Humorous-Incongruent version of conversation was prepared by using the statements half of which were humorous (on the issue of health) and the remaining half were nonhumorous (on the issue of business deal). Nonhumorous-Congruent version of conversation was
prepared by using all the nonhumorous statements about one issue i.e. ‘business deal’. Nonhumorous-incongruent version of conversation was prepared by using the statements half of which were concerned with the issue of health and remaining half were concerned with the issue of business deal and both types of statements were nonhumorous.

In each four versions of conversation 20 statements were considered as target statements uttered by Mr. Ahmad. These were the statements which were to be recalled by the subjects.

Modified Velten Mood Induction Technique (MVMIT) developed by Sinclair et al. (1994) was used to induce different shades of mood i.e., elated, depressed, and neutral to form the above mentioned twelve groups of subjects.

As dictated by the design of the experiment, each group of subjects namely elated, depressed, and neutral, read the conversation ten times and recalled 20 target statements uttered by Mr. Ahmad after a retention interval of 5 minutes which was filled with a distractor task.

To be more specific, a rapport with the subject was made, then either elated, depressed, or neutral mood was induced by Modified Velten Mood Induction Technique. Immediately after the induction of mood, subject was given ten trials on one of the four forms of fictional conversation that was followed by a 5 minutes distraction task. The purpose of distraction task was to prevent the subjects from rehearsing the stimulus material i.e. fictional conversation. Immediately after distraction task, the subject was instructed to recall in writing as many of Mr. Ahmad’s statements as she could. The subject was also instructed to use wording as close to the original as
possible. Subject was given 10 minutes to complete the recall task. In short the data were collected groupwise but conversation memory was tested individually. For example all the 15 subjects of elated group with humorous-congruent conversation were tested individually on conversation memory. Then all the 15 subjects of elated group with humorous-incongruent conversation were tested individually on conversation memory. Next all the 15 subjects of elated group with nonhumorous-congruent conversation were tested individually on conversation memory and then all the 15 subjects of elated group with nonhumorous-incongruent conversation were tested individually on conversation memory. The same procedure was used to test the conversation memory of the remaining groups of subject's i.e. depressed group and neutral group.

After collecting data on twelve groups of subjects, the recall protocols of the subjects were coded by two coders. These two coders worked independently to code the protocols for the presence of target items, i.e. whether a statement recalled by subjects was one of the twenty targets. Coders were instructed to use a gist or general meaning criterion. That is, a recalled statement was to be coded as one of the targets if it conveyed the general meaning of the target, regardless of the wordings. Thus all of the recall protocols were scored for the number of the target correctly recalled (regardless of the recalled wording). The numbers of target correctly recalled, as given by the two coders, were added and divided by 2 to get mean number of target correctly recalled. This was done to remove any discrepancy if it exists between two coders with respect to the number of targets correctly recalled.
The data so obtained was tabulated groupwise and statistically analyzed by three way analysis of variance to draw necessary inferences.

The F-ratio for humorous-nonhumorous variation is 7.41 which is significant at 0.01 level indicating that humorous and nonhumorous versions of conversation has differential effect on conversation memory. Disregarding other variables i.e. congruent-incongruent version of conversation, and mood, the mean of the means for humorous version of conversation groups is 12.98 (i.e., 11.50 + 12.77 + 13.43 + 13.70 + 14.07 + 12.40/6) and mean of means for nonhumorous version of conversation groups is 11.10 (i.e., 10.94 + 9.37 + 10.60 + 10.64 + 12.54 + 12.54/6). Since the mean of the means for humorous version of conversation groups of subjects (i.e. 12.98) is higher than the mean of the means for nonhumorous version of conversation groups of subjects (i.e., 11.10), it can safely be concluded that the variation in humorous-nonhumorous version of conversation has differential effect on conversation memory. More specifically, the results make it crystal clear that humorous version of conversation is better remembered than nonhumorous version of conversation. In other words, conversation memory was found better when version of conversation was humorous rather than nonhumorous.

The F-ratios, for congruent-incongruent variation is 3.10 which is very slightly statistically insignificant (for significant at .05 level, F-ratio of 3.89 is required). The result weakly suggests that congruent and incongruent version of conversation has no differential effect on conversation memory. However, if probability level of .08 is accepted then the F-ratio for congruent-incongruent variation becomes significant. Ignoring humorous-nonhumorous version of conversation and mood variables, the mean of the
means for congruent version of conversation group of subjects is 11.43 and mean of the means for incongruent version of conversation group of subjects is 12.65. Since there is perceptible difference between these two means of the means, it is, therefore, concluded that congruent version of conversation and incongruent version of conversation have differential effect on conversation memory. More specifically, it is found that conversation memory for congruent version of conversation is lower than conversation memory for incongruent version of conversation. In other words, incongruent version of conversation is better remembered than congruent version of conversation.

The F-ratio for mood variation is 0.28 which is also insignificant at .05 level. The result reveals that subjects with elated mood, depressed mood and neutral mood do not differ with respect to conversation memory i.e. all the three groups of subjects show same conversational memory performance. Disregarding humorous-nonhumorous and congruent-incongruent variables the mean of the means for the subjects with elated mood is 11.69, the mean of the means for the subjects with depressed mood is 12.18 and mean of the means for the subjects with neutral mood is 12.24. Since there is a negligible difference among the mean of the means for these groups of subjects, it is, therefore, concluded that mood variation has no differential effect on conversation memory. More specifically, conversation memory performance was found more or less the same among elated, depressed and neutral subjects. In other words mood variation has no differential impact on conversation memory.

The F-ratio for interaction between humorous-nonhumorous and congruent-incongruent version of conversation is 0.30 which is also insignificant. F-ratio for interaction between humorous-nonhumorous
versions of conversation and mood is 0.20 which is also insignificant. The F-ratio for interaction between congruent-incongruent version of conversation and mood is 0.56, which is also insignificant. The F-ratio for the interactional effect among humorous-nonhumorous, congruent-incongruent version of conversation and mood is 1.39 which is also insignificant.

The findings of the present research are given below:

1. Humorous and nonhumorous informations have differential effect on conversation memory. More specifically, conversation memory for humorous version of conversation was found much superior than for nonhumorous version of conversation.

2. Congruent and incongruent versions of conversations have differential effect on conversation memory. In other words, conversation memory for congruent version is lower than for incongruent version of conversation.

3. Mood has no impact on conversation memory. More specifically, listener’s mood be it elated, depressed or neutral has no differential effect on conversation memory.

4. No significant interactional effect was found between humorous-nonhumorous and congruent-incongruent versions of conversation on conversation memory.

5. No significant interactional effect was found between humorous-nonhumorous and mood on conversation memory.

6. No significant interactional effect was found between congruent-incongruent versions of conversation and mood on conversation memory.
7. No significant interactional effect was found among humorous-nonhumorous, congruent-incongruent versions of conversation and mood on conversation memory.

The first finding of the present research, i.e. conversation memory for humorous version of conversation was found much superior than for nonhumorous version of conversation, is in consonance with the findings obtained by numerous researchers. For instance, Kaplan and Pascoe (1977), Johnson (1990), Schmidt (1994), Kher, Molstad and Donahue (1999), Berk (2000), Powers (2005), Bacay (2006), and Berk (2007) have consistently demonstrated that humorous information facilitates learning speed, solving problems and memory. Numerous explanations may be offered for the beneficial effect of humorous version of conversation on conversation memory. First humorous information reduces anxiety, tension and stress (Berk, 1997, 1998c, 1999, 2000, and 2007) which in turn prepares a fertile ground for the enhancement of memory. Secondly humor promotes an objectivity that buffers the negative response (Galloway and Cropley, 1999) and provides a sense of empowerment over the testing situations (Sherman, 1998; Thorson 1985; and Wooten, 1996) that can improve subject's mental functioning and performance. A bulk of research evidences, on the psychological benefits, thus, concentrate on three outcomes: first, anxiety reduction (Cann, Holt, and Calhoun 1999; DeSpelder and Srickland, 1983; Doris and Fierman, 1956; Dworkin and Efran, 1967; Liechty 1987; Neeu, Nezu and Blissett, 1988; Singer 1968; Yovetch, Dale, and Hudak 1990); second, tension reduction (Brill 1940; Goodheart 1994; O'Connell 960; Wooten 1996) and third is stress reduction (Bizi, Keinan, and Beit-
Hallahmi, 1988; Dixon, 1976, 1980; Labott and Martin 1987; Lefcourt et al.
1995; Lefcourt and Martin 1986; Lefcourt and Thomas 1998; Martin et al.
1993; Martin and Lefcourt, 1983; Nezu et al. 1988; Prerost 1988; White and
Camarena, 1989; and Wooten 1996). Moreover, Berk (2000) and Berk et al.
(2006) who carried out six year study, found that humor is effective in
reducing anxiety and making it possible to perform best on examina ions.

The first finding of the present research may also be explained in terms
of improved immune system. It has been demonstrated by numerous
researchers that laughter generates an increase in positive emotion
(Backorowski and Owren, 2001) and produces self-reported improvements
in immune system functioning (Mahoney, Burroughs and Lippman, 2002).
Importantly, the effect of laughter on the self-reports of immune system
functioning is mediated by subjective experiences of positive emotion,
especially for older adults (Mahoney et al. 2002). This suggests that positive
emotions produced by the behavior of laughing may be important in
predicting healthy outcomes for the immune system. Positive emotions
mediate the effects of coping with humor and immune system functioning
(Dillon, Minchoff, and Baker, 1985-1986). Laughter (a behavior) is often
associated with humor (a cognitive construct). Individual vary in the content
to which they use humor to cope with stressful situation. Those with greater
tendencies to cope with humor report greater daily positive mood (Di lon et
al., 1985-1986). Consequently, in response to stress, those with greater
propensities to cope with humor show increases in levels of salivary
immunoglobulin A (S-Ig A), a vital immune system protein, which is the
body’s first line of defense against respiratory illnesses (Dillon et al., 1985-
1986). Corroborating work in an experience-sampling study show that self-
reported positive emotions (vs. negative emotions) predict increases in S-Ig levels, thereby enhancing immune functioning (Stone, Valdimarsdattir, Jandorf, Cox, and Neale, 1987). These findings indicate that persons who are able to regain and maintain positive emotional states when faced with a stressful life experience (e.g., via laughter, coping with humor) can show improvements in immune function. In short humor improves immune system which in turn improves physical and mental health. It is an open secret that health increases the efficiency of cognitive activities including memory. The first finding of our research, i.e. humorous version of conversation is better remembered than nonhumorous version, provides strong empirical evidence to the contention that humor strengthens immune system which in turn strengthens physical and mental health leading to enhancement of memory.

The first finding of our research also provides strong empirical evidence to the hypothesis proposed by McGhee (1983). According to his hypothesis humor produces physiological arousal. McGhee noted increased heart rate and respiration rate in response to humor and argued that these responses were indicative of activation of sympathetic nervous system. A number of researchers have demonstrated that physiological arousal enhances memory of the subject (Craik and Blankstein, 1975; Ellis, Dettman, Runcie, MaCarver, and Craig, 1971; Maltzman, Kantor, and Langdon, 1966; Walker and Tarte, 1963; Bohannon, 1988; Brown and Kulik, 1977; Christianson 1989; Pillemer, 1984).

Another potential explanation for our first finding may be found in “differential rehearsal hypothesis”. According to this hypothesis, subjects intentionally rehearse humorous material at the expense of nonhumorous
material and this increased rehearsal is responsible for increased retention (Atkinson and Shiffrin, 1968).

Apart from “differential rehearsal hypothesis”, “differential attention hypothesis” also received empirical support from our finding under discussion. According to this hypothesis, humorous sentences receive more attention than nonhumorous sentences and this increased attention is responsible for increased retention (Bandes, 1988; Bryant et al., 1979; Wandersee, 1982; Gorham and Christophel, 1990; Schmidt, 1991; Bobek, 2002; Friedman, Halpen, and Salb, 1999; McLaughlin, 2001; Power, 2005).

Our first finding may also be explained in terms of “surprise hypothesis” or retrieval strategies. This hypothesis asserts that subject may not expect to read humorous material as part of an experiment and subject may develop a bias toward retrieving humorous material (Schmidt, 1994). Thus, the first finding of our research provides empirical support to these hypotheses.

A survey of literature reveals that the theoretical background of humor is varied and controversial (Levine, 1969; Morreall, 1987; Nahemow, MaCluskey-Fawcett, and McGhee, 1986). Hundreds of theories of humor were proposed by early philosophers and theorists (Liechty, 1987). Initially these theories were grouped into three categories namely incongruent, superiority and tension reduction (DeSpelder and Strickland, 1983; Lefcourt and Martin, 1986; Liechty, 1987). However, later on the nomenclature of these three categories of theories were changed and were labeled as cognitive-perceptual, social-behavioral and psychoanalytical theories of humor (Davies, 1977; Levine, 1969; Sullivan and Deane, 1988). Among these
theories, psychoanalytical theory is considered as the best theory that provides best explanation for the use of humor to teach sensitive topics. This theory views humor as a mechanism for releasing fears and constantly associated with difficult situations (Liechty, 1987). Humor is seen to enable release of internal tensions and to provide the needed mechanisms for coping with misfortunes. Moreover, humor is emotional chaos remembered in tranquility. The first finding of our research strongly supports the psychoanalytical theory of humor by demonstrating significantly higher conversation memory for humorous material than for nonhumorous ones. This higher conversation memory for humorous material is due to the fact that humorous material reduced stress and anxiety as advocated by psychoanalytical theory.

Somewhat recently a scientific discovery is reported in a reputed newspaper in which it has been reported that researchers at the University and Imperial College in London played a series of sounds to volunteers while measuring their brains response using a functional MRI scanner. Some of the sounds were positive such as laughter while others were unpleasant like screaming. They found that hearing laughter produced a greater response in the premotor cortical region of a listener's brain—an area which is activated when one smiles. It should be noted here that cortex also play important role in the storage of memories. This report not only demonstrates the existence of an actual physical mechanism which facilitates the spread of humor but implicitly suggests that this mechanism may also facilitate retention of humorous material (The Time of India, New Delhi, Monday, December 18, 2006, pp.14). Our first finding is consistent with this report.
The second finding of our research i.e. incongruent version of conversation shows higher conversation memory than congruent version of conversation, is in line with the finding obtained by numerous researchers (Eysenck, 1979; Humphreys, 1976; Hunt and Eistein, 1981; Jacoby and Craik, 1979; Hunt, 1995; Hunt and McDaniel, 1993; Hunt and Smith, 1996; Rajaram, 1998; Smith and Hunt, 2000; Hunt, 2003; Geraci and Rajaram, 2004; Brandt, Gardiner, and Macrae, 2006; Park, Arndt, and Reder, 2006). This finding not only provides empirical support to numerous researchers just mentioned but also helps in resolving the controversy regarding the influence of congruent-incongruent information on memory. A number of researchers have also shown that incongruent information is unlikely to be remembered (Cantor and Mischel, 1977; Cohen, 1981; Hamilton, 1979; Markus, 1977). Since more impressive evidences are available to the effect that incongruent information is better remembered than congruent information, the finding of our research strongly strengthens further these evidences.

The second finding of our research, however, apparently appears inconsistent with the finding obtained by Hunt and Elliott (1980) who found that meaningfulness was directly related to recall but orthographic distinctiveness (incongruent) has no reliable effect on recall. Hunt and Elliott (1980), however, found higher recognition memory for orthographic distinctiveness than for common words. This finding clearly demonstrated that distinctiveness or incongruency influences memory depending on the type of memory measures. In this light it is logical to argue that our finding under discussion is not conflicting with the findings obtained by Hunt and Elliott (1980).
The second finding of the present research, i.e. conversation memory is higher for incongruent version of conversation than for congruent version of conversation, may also be explained in at least two ways. As suggested by Fiske (1980) incongruent information receives more attention and more weight. This mechanism may be responsible for better conversation memory when incongruent information is used. Similarly, Crocker, Hannah, and Weber (1983) argued that incongruent items should be more informative than congruent items when they are attributed to dispositional causes. Consequently, incongruent, dispositionally-attributed items may receive more attention and be better recalled (Taylor and Fiske, 1978).

Another potential explanation of our finding under discussion may be found in the concept of pathways or links. According to Hastie and Kumar (1979) incongruent behaviors spend more time in working memory because they must be explained and integrated. While in working memory, incongruent items are linked to other items also present in working memory. Consequently, incongruent items are linked to more other items than congruent items. Since the probability of retrieving an item depends on the number of pathways or links to that item, incongruent items are particularly likely to be found in a search of memory. The second finding of our research provides empirical evidence to this suggestion made by Hastie and Kumar (1979).

Still another possible explanation of the finding under discussion may be that incongruent items might have served as discriminative cues which in turn helped in enhancing memory (Hirshman and Jackson, 1997).
Distinctive processing may also provide explanation for the second finding of the present research. Distinctive processing has been defined as unique processing of an item at encoding that enhances discriminability of that item at retrieval (Jacoby and Craik, 1979; Lockhart, Craik, and Jacoby, 1976). Continuing research along this line has refined the definition of distinctive processing to the processing of differences among elements that are similar on some dimension, a definition that explicitly states the relativity of distinctive processing (Hunt and McDaniel, 1993). Thus distinctive processing is not the absolute processing of differences but is processing that marks something as different from other things that are related on some dimension. Such processing then facilitates accuracy because the combined processing of similarity and difference is highly diagnostic of a particular item (Hunt, 2003). These ideas may be applied to the encoding and retrieval processes of memory. The finding under discussion provides empirical support to these ideas.

Perhaps the best explanation of the second finding comes from the isolation or von Restorff effect (1933). It refers to the finding that the people tend to have very good memory for unusual or incongruent item. In other words the isolation effect refers to the finding that people have superior memory for an item when it is different from the other items in the list than when it is not (Geraci and Rajaram, 2004). Our finding is in total agreement with this contention.

It is highly logical to describe briefly the “distinctive-fluency framework” proposed by Rajaram (1996). According to her framework manipulations that encourage distinctive or elaborate processing would to the elicitation of “remember” responses. On the other hand, items that were
processed more on the basis of fluency would yield a preponderance of "know" responses. This framework received empirical support from Wickham, Morris, and Fritz (2000) and from the studies carried out by Brandt, Macrae, Schloerscheidt and Milne (2003) and Brandt, Gardiner, and Macrae (2006). Our second finding also provided undisputed support to Rajaram’s framework by showing that incongruent (or distinctive) items are better remembered as compared to congruent (or non-distinctive) items.

Though Berk (2007) was mainly interested in the influence of humor on memory but he also developed an interesting incongruent formula which according to him, is the foundation of most all types of jokes. Accordingly it is the juxtaposition of the “expected” with the unexpected when we expect everything to be serious, the unexpected twist not only creates humor but also incongruity which in turn leads to better recall of humorous or incongruent information. Our second findings totally agree with this contention.

The third finding of the present research, i.e. different shades of mood (elated, depressed and neutral) have no differential effect on conversation memory, is not in the expected direction. However, many explanations may be offered. First, it may be recalled that different shades of mood were induced by Modified Velten Mood Induction Technique (MVMIT). Though this technique is widely used by researchers for inducing mood, the technique is not free from criticism. For instance, Frost, Graf, and Becker (1979) failed to support the hypothesis that depressed mood are induced by reading self-devaluative statement. They further noted that reading self-devaluative statements did not induce more depressed mood among subject than subject in the neural condition. If it is so, it is logical to assume that
reading uplifting mood statements may not induce as strong elated mood as desired by the experimenter. Thus non-existence of differential effect of different shades of mood on conversation memory may be attributed to this contention. This contention was further strengthened by Riskind, Rholes, and Eggers (1982) who failed to find a correlation between changes produced by the VMIP in mood ratings and memory latencies. This finding suggests that mood cannot account for the memory results and that VMIP statements may have a direct cognitive priming effect on the availability of memories (Teasdale and Fogarty, 1979).

Second, there are conflicting results regarding the effect of arousal on memory. Craik and Blankstein (1975), Pettigrew (1978), and Zajonc (1980), for instance, have shown facilitative effect of arousal on memory whereas other investigators, on the other hand, have argued that consolidation and retrieval may depend not so much on arousal as on the importance of the consequences for subsequent interaction (Brown and Kulik, 1977; MacWhinney, Keenan and Reinke, 1982). MacWhinney et al. (1982) made it crystal clear that arousal, as measured by Electrodermal response (EDR), is not a good predictor of long term memory for natural conversation. They found that though EDR is a useful indicator of people's immediate reaction to conversation, it does not appear to be a major determinant of the processing and storage of sentences for long term retention. They admitted that arousal may be important in the initiation of rich memories for perceptual detail but retention of these memories depends on their consequences for subsequent interactions. Since mood whether elated or depressed increases arousal level, the third finding of our research may be explained in terms of interactional content of the sentences used in
conversation. Our finding is also in agreement with the finding obtained by Clark, Milberg and Ross (1983) who demonstrated that enhanced arousal is not necessary for positive mood to cue positive material from memory.

Third, absence of differential effect of different shades of mood on memory indirectly provides empirical support to those studies which failed to demonstrates the existence of mood congruent memory (Bower, Gilligan, and Monteiro, 1981; Bower and Mayer, 1985; Bower, Monteiro, and Gilligan, 1978; Brown and Taylor, 1986; Clark, Teasdale, Broadbent, and Martin, 1983; Coleman, 1975; Gerrig and Bower, 1982; Gotlib and McCann, 1984; Isen, Shalker, Clark, and Karp, 1978; Mecklenbrauker and Hager, 1984; Siegel, Johnson, and Sarason, 1979; and Parrott and Sabini 1990). This empirical evidence becomes relevant as stimulus material used in the present research may be considered as having positive (humorous) and negative (nonhumorous—totally dry discussion) valence. Moreover, the third finding of our research is totally in agreement with the finding obtained by Bower, Monteiro, and Gilligan (1978) and Gotlib and McCann (1984) who also found no effect of mood on recall.

Fourth, a closely related phenomenon of mood congruence is mood dependent memory. The mood dependent memory was first of all demonstrated by Bower, Monteiro, and Gilligan in 1978, in which subjects showed better recall when the mood at retrieval matches with the mood at encoding. However after few replications of these findings, numerous researchers failed to find mood dependent memory (Bower and Mayer, 1985a, 1989). These inconsistencies in the findings forced Bower (1985) to generate a hypothesis known as “causal belongingness”. According to this hypothesis what is needed for mood dependent retrieval to occur is for mood
related structures (schemas) to be created at the time of presentation in storage. If such mood related structures are not created, mood dependent retrieval does not occur. The third finding of our research may be explained interns of absence of mood related structures. As pointed by Eich, Macaulay and Ryan (1994) the more one relies on external resources rather than on internal resources, the more likely is one’s memory for the events to be mood independent. Thus if two individuals—one happy, the other sad—are shown, say, a ‘rose’ and after some retention interval if these individuals are asked to identify and describe what they had seen before retention interval, both individuals are apt to say much the same thing and to encode the ‘rose’ event in much the same fashion. In other words, a ‘rose’ is a ‘rose’ regardless of whether it is seen with through a happy or sad eye. Our third finding provides empirical support to this “do-it-yourself principle” proposed by Eich, Macaulay and Ryan (1994). Thus the subjects of our study who were under positive, negative and neutral moods might have relied heavily on external resources rather than internal resources. hence they did not differ with respect to their memory performance.

Fifth, somewhat recently Fredrickson and Branigan (2005) published a research paper entitled “positive emotions broaden the scope of attention and thought-action repertoires” in which they provided empirical support to “broaden-and-build theory” of emotions. The broaden-and-build theory was originally proposed by Fredrickson (1998, 2001). The ‘broaden-and-build theory’ of positive emotion is based on two hypotheses--- broaden hypothesis and narrow hypothesis. Broaden hypothesis states that positive emotions broaden the scope of attention, cognition and action, widening the array of percepts, thoughts and actions presently in mind whereas narrow
hypothesis assert that negative emotions have opposite effects on attention, cognition and action, narrow the array of percepts and thoughts. Though these hypotheses have received empirical support from the studies carried out by Fredrickson and Branigan (2005), the third finding of our present research, i.e. positive and negative mood have no differential effect on conversation memory, does not provide any support to these two hypothesis generated from ‘broaden-and-build theory’ of positive emotion, rather our finding provides empirical support to ‘opponent-process theory of emotion proposed by Solomon (1980). According to this theory when an environmental stimulus (e.g., a stressor) elicits an initial emotional reaction (e.g., distress), this emotion in turn elicits an opponent emotion (e.g., happiness or well being). The theory further advocates that at any given time, a person’s emotional state is the sum of the initial and opponent emotion. If a stressful event occurs, the initial negative emotional response will be dominant while the stressor lasts. After the stressful event ends, however the opponent positive emotion will dominate, and a person will be in a better mood than usual. This mechanism, perhaps, is responsible for the absence of differential effect of positive and negative mood on conversation memory.

Sixth plausible explanation of the third finding of our research lies in the phenomenon widely known as inhibition of emotional information. It has been demonstrated by Goeleven, DeRaedt and Koster (2007) that as compared with a neutral mood, negative mood state did not lead to inhibitory dysfunction of emotional information whereas positive mood results in a reduction or absence of inhibitory functioning as compared with a neutral mood condition. They further found that positive mood is
associated with increased distractibility, causing poor performance on inhibition depend processes suggest deductive reasoning (Oaksford et al. 1996) and might cause intrusions and memory lapses (Hasher et al. 2007). Like Joormann (2004) and Goeleven et al. (2006a), Goeleven et al. (2007) concluded that reduced inhibition of affective (or negative) information is not linked with negative mood state itself but seems to be due to a rather stable cognitive vulnerability factor of depression. Thus our third finding is in agreement with the above mentioned findings.

Finally, our third finding provides empirical support to both associative network theory in particular and to Resource Allocation Model (Ellis and Ashbrook, 1987) in general. So far as associative network theory is concerned, it predicts that mood dependent and mood congruent effects should be symmetrical—that is, the shifting from happiness to sadness should have the same effect as shifting from sadness to happiness; and the effects of sadness on negative material should be the same as the effects of happiness on positive material. So far as resource allocation model is concerned, it asserts that both positive and negative moods alike should induce extra-task processing, reduce attentional capacity, and impair performance on effortful cognitive tasks. In other words this model predicts that positive and negative moods should have same effect on performance. Here it is important to note that our finding, i.e. positive and negative moods have same effect on conversation memory, may be explained by both associative network theory and resource allocation model.

The first interactional effect of humorous-nonhumorous and congruent-incongruent versions of conversation on conversation memory is insignificant. This insignificant interactional effect suggests that
conversation memory of humorous and nonhumorous versions is independent of congruent and incongruent versions of conversation. The finding reveals that though humorous-nonhumorous and congruent-incongruent versions of conversation influence conversation memory when considered separately but when both variables are combined, its interaction becomes insignificant.

The remaining three interactional effects, i.e. interaction between humorous-nonhumorous version of conversation and mood; interaction between congruent-incongruent versions of conversation and mood; and interaction among humorous-nonhumorous, congruent-incongruent versions of conversation and mood on conversation memory, are insignificant. These insignificant interactional effects may also be explained in the same way as we have explained the first insignificant interactional effect.

The overall findings of the present research not only open new area of research in memory but also highlight a new mechanism underlying interpersonal attraction, interpersonal relationship and impression formation. Moreover, the findings of present research may also be applied in educational setting like preparing syllabi and teaching methods.

The fact that humorous and incongruent versions of conversation was better recalled reveals that subjects encoded humorous and incongruent information more effectively which, in turn, helped in better memory performance. Now a question arises why humorous and incongruent information was encoded more effortfully and effectively and was better recalled? From social point of view it may suggested that subjects found more attraction and interest in humorous and incongruent versions of
conversation hence they paid more attention to humorous and incongruent versions of conversation. This mechanism might have contributed to higher conversation memory for these two types of versions of conversation. It is an open secret that if we like conversation of a person than we not only like the person but also developed positive impression about that person. The findings of our research lead us to emphasize that in order to develop interpersonal attraction or good interpersonal relationship, we must use humorous statement in our conversation with others. It is interesting to note that incongruity usually itself creates humorous context. It is very common experience that humorous statements attract us toward the person who has uttered them and we developed a strong urge to meet that person again and again. Thus frequent meeting with the person may sow the seed for the development of interpersonal attraction and interpersonal relationship. Thus the findings of our study may be considered to contribute not only in the area of experimental psychology but also to the area of social psychology particularly area of interpersonal attraction and impression formation.

We firmly believe that findings of our investigation, if applied in educational settings, would be highly beneficial not only for academic performance of the students but would also be helpful in the development of a rapport between teachers and taught. Early studies have also demonstrated this fact. Twenty-six studies identified humor as one of the quality of effective teachers (Ford, 1978). Moreover Hildebrand (1973) found that those faculty members who possess dynamism/enthusiasm receive high rating among students. Similarly, Highet (1958) identified humor as one of the most important qualities of a good teacher. He saw the true purpose of humor to be the establishment of a link between students and teachers.
through enjoyment. It has been found that humor helps students to be attentive, presents a true picture of subjects and establishes rapport in a classroom setting and produces a relaxed, positive atmosphere conducive to better learning; promotes increased comprehension and retention; aiding cognitive development; manages undesirable behavior; build self confidence; and enhances the lives of both teachers and taught (Öesberg, Henschel, Marshall, and McGhee, 1981; Hunsaker, 1988; Hyman, 1974; MacAdam, 1985; Powell and Andresen, 1985; Watson and Emerson, 1988; Ziv, 1988; and Schmidt, 1994). Powers (2005) has cited a very interesting as well as important quote of Baughman (1979). The quote is “one of the greatest sins in teaching is to be boring”. Powers (2005) has advocated that effective use of humor can help teacher engage students and establish rapport with them, maintain their attention, create an open classroom atmosphere, and even ease distress during examinations.

It has been further advocated that if teachers want students to learn, then they should consider making learning more palatable, even enjoyable. This contention not only supports the use of humor in the classroom, but humor should be incorporated across all academic levels (White, 2001; Torok, et al., 2004; and Bacay, 2006). The same point is emphasized by learner-centered psychological principles of the American Psychological Association (2006).

The above findings vindicate our contention that findings of our research, if implemented, would contribute a lot in raising the academic standard and academic excellence in educational settings.
Though we have attempted to provide best possible and most satisfactory explanations of our findings but an element of doubt still haunts our mind with regard to the effect of mood on conversation memory. In fact we were expecting different magnitude of conversation memory under different shades of mood. The third findings of our research did not fulfill our expectation rather we found no differential effect of elated, depressed, and neutral mood on conversation memory. As mentioned somewhere else Modified Velten Mood Induction Technique (MVMIT) might have not induced different shades of mood of desired intensity resulting into absence of any differential effect of mood on conversation memory. It is therefore suggested that in future studies on mood and memory, mood should be induced not only by MVMIT but also by other effective and well tested technique like music. If mood is induced by a combination of mood induction techniques it is possible that we can obtain differential effect of different shades of mood on memory. Thus further research is required in this direction so that ambiguity regarding the role of mood in memory may be resolved.