Reading Passage 3

You should spend about 20 minutes on **Questions 27-40**, which are based on Reading Passage 3.

FORGETTING

When a memory of a past experience is not activated for days or months, forgetting tends to occur. Yet it is erroneous to think that memories simply fade over time—the steps involved are far more complex. In seeking to understand forgetting in the context of memory, such auxiliary phenomena as differences in the rates of forgetting for different kinds of information also must be taken into account.

It has been suggested that, as time passes, the physiological bases of memory tend to change. With disuse, according to this view, the neural engram (the memory trace in the brain) gradually decays or loses its clarity. While such a theory seems reasonable, it would, if left at this point, do little more than restate behavioral evidence of forgetting at the nervous-system level. Decay or deterioration does not seem attributable merely to the passage of time; some underlying physical process needs to be demonstrated. Until a neurochemical basis for memory can be more explicitly described, any decay theory of forgetting must await detailed development.

A prominent theory of forgetting at the behavioral level is anchored in the phenomenon of interference, or inhibition, which can be either retroactive or proactive. In retroactive inhibition, new learning interferes with the retention of old memories; in proactive inhibition, old memories interfere with the retention of new learning. Both phenomena have great implications for all kinds of human learning.

In a typical study of interference, subjects are asked to learn two successive verbal lists. The following day some are asked to recall the first list and others to recall the second. A third group learns only one list and is asked to recall it a day later. People who learn two lists nearly always recall fewer words than those in the other group. Theorists attribute the loss produced by these procedures to interference between list-learning tasks. When lists are constructed to exhibit varying differences, the degree of interference seems to be related to the amount of similarity. Thus, loss in recall will be reduced when two successive lists have no identical terms. Maximum loss generally will occur when there appears to be heavy (but not complete) overlap in the memory attributes for the two lists. One may recall

LIVEWORKSHEETS

parts of the first list in trying to remember the second and vice versa. (This breakdown in discrimination may reflect the presence of dominant attributes that are appropriate for items in both lists.) Discrimination tends to deteriorate as the number of lists increases, retroactive and proactive inhibition increasing correspondingly, suggesting interference at the time of recall.

In retroactive inhibition, however, not all of the loss need be attributed to competition at the moment of recall. Some of the first list may be lost to memory in learning the second; this is called unlearning. If one is asked to recall from both lists combined, first-list items are less likely to be remembered than if the second list had not been learned. Learning the second list seems to act backward in time (retroactively) to destroy some memory of the first. Much effort has been devoted to studying the conditions that affect unlearning, which has become a major topic in interference theory.

Retroactive and proactive effects can be quite gross quantitatively. If one learns a list one day and tries to recall it the next, learns a second list and attempts recall for it the following day, learns a third, and so on, recall for each successive list tends to decline. Roughly 80 percent recall may be anticipated for the first list; this declines steeply to about 20 percent for the 10th list. Learning the earlier lists seems to act forward in time (proactively) to inhibit retention of later lists. These proactive phenomena indicate that the more one learns, the more rapidly one forgets. Similar effects can be demonstrated for retroactive inhibition within just one laboratory session.

Such powerful effects have led some researchers to speculate that all forgetting is produced by interference. Any given memory is said to be subject to interference from others established earlier or subsequently. Interference, theoretically, may occur when memories conflict through any attributes. With a limited group of attributes and an enormous number of memories, it might seem that ordinary attempts at recall would be chaotic. Yet, even if all of the memories shared some information, other attributes not held in common could still serve to distinguish them. For example, every memory theoretically is encoded at a different time, and temporal attributes might serve to discriminate otherwise conflicting memories. Indeed, when two apparently conflicting lists are learned several days apart, proactive inhibition is markedly reduced. Assuming that memories are multiply encoded, interference theory need not predict utter confusion in remembering.

LIVEWORKSHEETS

Sources of interference are quite pervasive and should not be considered narrowly. For example, all memories seem to be established in specific surroundings or contexts, and subsequent efforts to remember tend to be less effective when the circumstances differ from the original. Alcoholics, when sober, tend to have trouble finding bottles they have hidden while intoxicated; when they drink again, the task is much easier. Some contexts also may be associated with other memories that interfere with whatever it is that one is trying to remember.

LIVEWORKSHEETS

Questions 27 – 31

Complete the summary using the list of words and phrases, **A-J,** below.

Write the correct letter, **A-J,** in boxes 27-31 on your answer sheet.

People tend to forget their past experience if they do not think of it often. In fact, the forgetting process is, however, much more **27**..... than that. One theory suggests that the neural engram will decay if it is **28**..... for a long time, so we forget things. Another theory attributes the forgetting to the phenomenon of inhibition, in which our memory is **29**..... by that established earlier or later.

In terms of retroactive inhibition, old memory is forgotten to memorize new knowledge, but this is not **30** ..... to the conflicts taking place at the moment when we recall. It is just when we learn something new. Regarding proactive inhibition, things are **31** .....

A. Simple

B. Lost

C. Interfered

D. Disused

E. Predictable

F. Contrary

G. Attributed

H. Complicated

LIVEWORKSHEETS

Questions 32-37

Do the following statements agree with the information given in the Reading Passage 3?

In boxes 32-37 in your answer sheet, write

YES	*If the statements agree with the claims of the writer*
NO	*If the statements contradict with the claims of the writer*
NOT GIVEN	*If it is impossible to say what the writer thinks about this*

32. In our brain, the memory trace deteriorates mainly when a long time has passed.

33. When humans acquire new knowledge, the existing one is negatively impacted as a result of a phenomenon called retroactive inhibition.

34. In the study of interference, volunteers who learned one verbal list could remember more words than those asked to learn two lists

35. To minimize the number of words forgotten, more similar words should be added in the list-learning task.

36. The more lists of words people learn within one day, the faster they can recall them.

37. People can better remember past experiences when the contexts are slightly modified.

Questions 38-40

Choose **NO MORE THAN THREE WORDS** from the passage for each answer.

Write your answers in boxes 38-40 on your answer sheet.

38. Apart from time, what else needs to be present to result in the deterioration of the neural engram?

39. In retroactive inhibition, what is the name of the process of forgetting old things to absorb new knowledge?

40. What can be avoided when people learn two conflicting lists of words in two different times?

LIVEWORKSHEETS