

Free-Response Question 2

One of the most useful generalizations in psychology is that "behavior is adaptive." Explain this generalization and then identify each of the following and describe how each could be adaptive.

- A. Repression
- B. Conformity
- C. Imprinting
- D. Displaced aggression
- E. Loss of information from short-term memory

Question 2 Scoring Guide (Total of 11 points)

- A. Explain the generalization "Behavior is adaptive." (1 point)

In order for a behavior to persist in an organism, the behavior must serve some useful function; i.e., the behavior must allow the organism to survive.

- B. Identify each concept below (1 point) and describe how each could be adaptive (1 point).

CONCEPT	IDENTIFY (DEFINE)	ADAPTIVE FUNCTION
Repression	Putting traumatic or ego threatening events into the unconscious (motivated forgetting) — the notion of the events or memories being "out of consciousness" is acceptable.	Protects self against harmful, painful, crippling memories, unacceptable thoughts, and allows for effective functioning — permitting the organism to continue with life — to move on.
Conformity	Going along with the dominant norms, mores or behavior of the group.	Allows individual to be accepted by the group, to feel part of the group, to function more efficiently because of the group, to fit in, to increase the individual's chances of survival by belonging to the group. There is the understanding that there is a personal gain.
Imprinting	Following the 1st object the organism is exposed to during critical period early in life. The mention of imitation is never sufficient in itself unless linked to a notion that conveys the idea of a critical period.	Allows behaviors to develop toward parent ensuring physical survival, or activity necessary for survival — i.e., feeding, protection.
Displaced aggression	Aggressing against an object or person instead of directly against the source instigating the aggression — the notion of displacing anger without a clear indication of a source of the anger not accepted.	Allows the individual to vent aggression on a less threatening object or person while continuing a relationship with the instigator (protecting oneself or others).
Loss of information from short-term memory	Information does not enter long-term memory store. Loss is due to the limited storage capacity of STM or lack of rehearsal or processing.	Protects long-term memory from being cluttered, overloaded, or overwhelmed (creating retrieval problems). The loss allows new information to enter short-term memory.

Sample Student Responses

Student Response 1 (Excellent)

Because this essay did not copy clearly, it is transcribed on page 39 for your convenience.

The concept of behavior being adaptive is not a new one, it has existed in biology for hundreds of years. To put it simply, it means that certain behaviors or body functions exist because they help the person or creature survive. In biology this concept is applied to the different structures of organisms but in biology it is used to explain how we act in a survival context.

^{The unconscious forgetting of painful events}
Repression could be adaptive by allowing us to live our lives without dwelling on past bad experiences. Without repression, you would remember your most painful past events, which would not allow you to function normally due to the depression and anxiety they may cause. Without repression basically bad experiences would stay at the surface, creating tension that could disrupt our lives. Getting rid of this tension is the adaptive quality of repression.

Becoming part of the group, and doing what they do and acting how they want you to act is called conforming. Conforming can be considered adaptive for many reasons. First, for protection. If you conform you are more likely to be accepted by a group, and if you are part of the group you are more protected from the outside environment. Also, conforming allows you to get accepted, which is also emotionally good for you. Feelings of acceptance and a high self-esteem can be gained by conforming to what a group wants you to do, because normally you would gain praise for it.

^{The taking on the first seen moving objects "in front"}
Imprinting is an important adaptive device. It allows animals to immediately recognize its mother which is very useful seeing as the mother is its only source of food and protection until it matures.

subtlety. Without imagination, it would be difficult for the children to know how or from whom to receive food. Since there was no other way to determine who their mother is.

The adaptive qualities of displaced aggression are very useful. The ability to "take it out" on something other than the target of your anger is very useful, especially if the target is more powerful than yourself. In that case, it can be ~~seen~~ thought of as even life-saving. It also helps us relieve stress, by taking out our aggression on an inanimate object, therefore helping ourselves feel better and protecting others from our aggression.

Finally, the loss of ~~some~~ information from short-term memory can be considered ~~an~~ adaptive. If we did not lose information, it would all go ~~into~~ to long term memory. This is not desirable because many things stored in short term memory are trivial or useless. Therefore, it is easier to release what we ~~do~~ wish to remember than to have our mind cluttered with useless bits of information.

The concept of behaviour being adaptive is not a new one; it has existed in biology for hundreds of years. To put it simply, it means that certain behaviours or body functions exist because they help the creature survive. In biology this concept is applied to the different structures of organisms but in biology it is used to explain how we act in a survival context.

Repression, the unconscious forgetting of painful events, could be adaptive by allowing us to live our lives without dwelling on past bad experiences. Without repression, you would remember your most painful past events, which would not allow you to function normally due to the depression and anxiety they may cause. Without repression, basically bad experiences would stay at the surface, creating tension that could disrupt our lives. Getting rid of this tension is the adaptive quality of repression.

Becoming part of the group, and doing what they do, and acting how they want you to act is called conforming. Conformity can be considered adaptive for many reasons. First, for protection. If you conform you are most likely to be accepted by a group, and if you are part of the group you are more protected from the outside environment. Also, conforming allows you to get accepted, which is also emotionally good for you. Feelings of acceptance and a high self-esteem can be gained by conforming to what a group wants you to do, because normally you would gain praise for it.

Imprinting, the taking on the first seen moving object as "mother" is an important adaptive device. It allows lower animals to immediately recognize its mother, which is very useful seeing as the mother is its only source of food and protection until it matures sufficiently. Without imprinting, it would be difficult for the children to know how or from whom to receive food, since they have no other way to determine who their mother is.

The adaptive qualities of displaced aggression are very useful. The ability to "take it out" on something other than the target of your anger is very useful, especially if the target is more powerful than yourself. In that case, it can be thought of as even life-saving. It also helps us relieve stress, by taking out our aggression on an inanimate object, therefore helping ourselves feel better, and protecting others from our aggression.

Finally, the loss of information from short-term memory can be considered adaptive. If we did not lose information, it would all go to long term memory. This is not desirable because many things stored in short term memory are trivial or useless. Therefore, it is easier to rehearse what we wish to remember than to have our mind cluttered with useless bits of information.

Comment: This essay, which earned 11 points, clearly explains the generalization "behavior is adaptive" with the statement, "certain behaviors or body functions exist because they help the creature survive." Repression is identified as "unconscious forgetting of painful thoughts." The definition could have been improved if the student had specified that these thoughts were put into the unconscious. The adaptive function of repression is explained in several ways, but most clearly by the statement that without repression "you would remember your most painful past events, which would not allow you to function normally due to the depression and anxiety they may cause." Conformity is clearly defined and, again, the student provides several cogent examples of its adaptive function. Imprinting is defined. The definition could have been improved by specifying that this occurs during a "critical" period. The student's description of the "survival" value of attachment to the mother is a nice illustration of imprinting's adaptive function. The student points out that if there were no loss of information from short-term memory, then such information would go to long-term memory and much of such information would be trivia. The statement that the result would "have our mind cluttered with useless bits of information" demonstrates an understanding of the adaptive function of this phenomenon.

One of the most useful generalizations in psychology is that "behavior is adaptive." The reason this theory is so common is people cope daily with all sorts of traumas, fears, and other events in their lives.

Repression is a type of defense mechanism often developed by abused and mentally harmed people. Repression allows an individual to forget or hide the memories of a traumatic experience. By utilizing repression to continue with life, a person adapts to living with pain and anguish.

When humans are in a group, they tend to follow along with what "everyone else is doing." As Asch's experiments proved, people conform because it is easier than not. A person's behavior, even morals and ethics, can be altered, or rather adapted, to deal with peer pressure or stress.

At birth, a special bond is formed between mother and baby known as imprinting. Because a baby is so helpless and dependent, it ~~adapts~~ ^{attaches} to his mother. The baby learns that it must have its mother to survive, so it adapts for necessity.

Free-Response Question 1

Design an experiment to determine whether a new drug that is supposed to reduce hyperactivity in children actually does. Your essay should include an identification and description of all of the components of your experimental design, including sampling, independent and dependent variables, controls, and the method that you would employ to evaluate the outcome.

Question 1 Scoring Guide

There are five components to this question in experimental design: (1) Sampling; (2) Independent variable; (3) Dependent variable; (4) Controls; and (5) Method of evaluating outcome. Each of these components can earn up to 2 points — 1 for “identification” and 1 for “description.” The specific criteria for the 10 points follow:

SAMPLE:

- (1) The subjects must be identified as hyperactive children — although points will not be taken off if sample is described as including normal children as well, as long as hyperactive children are in both the experimental and placebo (or control) group.
- (2) There must be some indication of a sampling (selection) procedure, e.g., an indication of whether subjects will be selected randomly, or be representative, any notion of subtest of a larger group is acceptable. Control: Demographics not scored in this context.

IV:

- (3) The IV is identified as the drug/drug treatment.
- (4) The treatment is described, e.g., division of sample into at least one experimental and at least one other group, e.g., one that receives a placebo, other level of the drug, different drug or no drug.

DV:

- (5) The DV is identified as hyperactive behavior or a change in hyperactive behavior.
- (6) The specific hyperactive behavior to be measured or the method used to determine change (e.g., a scale of 1-100, observation of specific behaviors that may indicate hyperactivity of physical index). “Measuring hyperactivity”: not enough.

CONTROLS:

- (7) References made to a placebo (or other drug) within the context of a control.
- (8) Reference made to other control techniques, e.g., random assignment to treatment groups, double (or single) blind procedures, demographics, drug vs. non-drug groups — in the context of controls.

EVALUATION:

- (9) a) Indication that statistics will be used to evaluate difference between groups or b) other approach to determining reliability and/or validity of findings (e.g., replication).
- (10) Indication that groups will be compared to determine effectiveness of drug or indication that groups will be significantly different (not necessary to say “statistically significant”).

Sample Student Responses

Student Response 1 (Excellent)

An experiment to determine whether a new drug actually reduces hyperactivity in children would begin by randomly sampling within a group of children with certified hyperactivity to control for unknown confounding variables. Then the children would be randomly assigned to either the control or experimental groups. The experimental group is the group receiving the new drug while the control group would not. The independent variable would be the drug and ~~the~~ the dependent variable would be the hyperactive behavior. ~~The control group, however, will receive a placebo to ensure that the administration of any substance is not the determining factor in behavior altering. A double blind will be used - the experimenter will not know which children were given the placebo or the actual drug to ensure no biasing in his/her evaluation. The children will also be uninformed of the nature of whatever substance is being administered so that their actions will not be governed by knowing the effects of the substance. The evaluator will observe the children in a naturalistic observation through naturalistic observation using unobtrusive measures to ensure that his presence does not affect the subjects' behavior. The outcome would be evaluated by~~ The control group, however, will receive a placebo to ensure that the administration of any substance is not the determining factor in behavior altering. A double blind will be used - the experimenter will not know which children were given the placebo or the actual drug to ensure no biasing in his/her evaluation. The children will also be uninformed of the nature of whatever substance is being administered so that their actions will not be governed by knowing the effects of the substance. The evaluator will observe the children in a naturalistic observation through naturalistic observation using unobtrusive measures to ensure that his presence does not affect the subjects' behavior. The outcome would be evaluated by

the experimenters comparing the behaviors of the control and experimental groups to determine if the drug was correlated with a decrease in hyperactivity. Inferential statistics would then be used to determine if the results occurred by chance.

Comment: This essay, which earned 10 points, shows a clear grasp of experimental design and methodology. The faculty consultants were particularly impressed by the student's awareness of the need for experimental controls. The student also has excellent writing skills and expresses himself or herself in a clear and organized fashion.

The student's opening sentence gains 2 points on the issue of sampling. The student recognizes that this study should be done on hyperactive children (not all essayists did). The student also knows that the subjects in this experiment should be selected by sampling to control for "unknown confounding variables." The student proposes a solid experimental design, dividing the subjects into two groups: an experimental group which receives the new drug, and a control group which does not. The student shows awareness of the need to assign the subjects to the two groups on a random basis — one of several indications of this student's grasp of experimental control. The independent variable is explicitly identified as the drug and the dependent variable as the hyperactive behavior. The student recognizes the critical need for a placebo control in this type of research and is able to state why such a control is necessary. The student also recognizes the need for a double-blind design as a further control and clearly describes such a procedure. The student describes a way of measuring the dependent variable "through naturalistic observation using unobtrusive measures." This excellent essay could have been made even better if the student had described some means of objectifying or operationally defining these measurements. The student recognizes the need to compare the two groups to determine the effectiveness of the medication and that statistical treatment would be necessary to evaluate the outcome.

Student Response 2 (Good)

Fifty hyperactive children take part in an experiment to determine whether a new drug that is supposed to reduce hyperactivity in children actually does. Twenty-five of the children are given the new drug for a three month period. The other twenty-five children are not given the drug and represent the control group of the experiment. All fifty children have similar environments throughout the experiment, in an attempt to decrease the number of variables which would affect the outcome. 11.

The independent variable in the experiment, ~~assuming~~ that all environmental variables are eliminated, is the new drug. The variable that is dependent on this new drug is hyperactivity. At the end of the three month period the behavior of both groups of children is observed in a controlled environment. Data is taken and several graphs (bar) are drawn comparing the hyperactivity of the children who took the drug to the hyperactivity of the children who didn't.

If the hyperactivity of the group tested, or of the children who took the drug, has noticeably decreased when compared with the children that didn't take the drug, then the new drug should be tested further and eventually administered to all hyperactive children. If the hyperactivity of the tested group is the same as the hyper-

activity of the control group than the drug is not doing what it's supposed to do and should not be administered to other hyperactive children. Further experimentation would also be valuable in the second outcome.

Comment: The student recognizes that the study should be done on hyperactive children but does not describe any way of selecting the children for this particular study; i.e., the student does not fully deal with the sampling issue. The experimental design properly divides the subjects into two groups, the experimental group which receives the medicine and the control group which does not receive the medication. The final sentence of the first paragraph begins to address the need for various experimental controls. The student correctly identifies the independent variable and the dependent variable and demonstrates good understanding of these concepts. The student merely says that "data are taken," but does not state how the behaviors on which the data is based will be objectified (operationally defined) to ensure accurate and reliable measurement of the dependent variable. Because of the powerful effects of subjects' expectations and their belief in the efficacy of any medication, particularly a new medicine, a placebo control is necessary in virtually all research on the effectiveness of a particular treatment approach (medical or psychological). The student fails to provide this vital experimental control, and loses the point. The student compares the outcome measures (hyperactivity) of the two groups appropriately and does so with "several graphs (bar)," a descriptive statistical treatment. A stronger essay would have described some use of inferential statistics. The need to do further experimentation, stated in the last sentence, is another way of evaluating the outcome and also would have gained the point. This essay scored a total of 7 points.