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**Intro to Psychology**

Asking “Testable” Questions

Through its reliance on the scientific method, psychology studies questions that can be tested in a *precise*, *objective*, and *verifiable* way. The first step in “doing” psychology scientifically is learning how to ask testable questions.

**Which of the following questions can be tested scientifically? If the question can’t be tested, rewrite it in a way that makes it more *precise*, *objective*, and *verifiable*.**

1. Do infants dream?
2. Do college students who take more courses develop more efficient study habits?
3. Does caffeine make people anxious?
4. Are our dreams an indication of our unconscious desires and conflicts?
5. Do apes have a self-concept?
6. Is psychotherapy more beneficial than psychiatric medication?
7. Are some people born evil?
8. Do college students consume more beer than other age groups?
9. Do students remember information longer after preparing for essay exams than for multiple choice exams?
10. Does memory get worse in old age?

**Answers**

**Do infants dream?**

This question is not testable because we do not know what the infant experiences in his or her mind when asleep. But one solution is to look for behaviors and physical signs that indicate dreaming in adults and then see whether they also occur in infants. Sleeping adults go through stages of sleep and in one stage, called REM sleep, the sleeper's eyes flutter beneath the closed lids. When adults are awakened during this stage, they frequently (about 80% of the time) report that they have been dreaming. Therefore, rapid eye movements during sleep are often cited as a physical sign of dreaming. Newborn babies (and fetuses) have periods of rapid eye movement sleep. But we still do not know for sure whether they are associated with dreaming because infants have no way of reporting dreams.

**Do college students who take more courses develop more efficient study habits?**

This question is testable but needs to be more precise. What type of college students? What type of courses? What is meant by efficient study habits? A better question would be, "Do second year psychology students spend less time cramming the night before the midterm, than they did when they were in first year?

**Does caffeine make people anxious?**

This question is testable but it needs to be more precise. Is the dosage of caffeine critical? Does the same dosage of caffeine affect some people but not others? What is anxiety? Research questions in psychology must be stated in very specific terms so that they can be interpreted objectively and so that other researchers can ask the same question and replicate the study.

**Are dreams an indication of our unconscious desires and conflicts?**

This question is not testable. In order to test this question, we would need an objective measure of our unconscious desires and conflicts.

**Do apes have a self-concept?**

This question is testable but needs to be more precise. What type of apes? What is meant by self-concept? One aspect of self-concept is self awareness. A method, developed to see whether human infants are self aware, can be used with chimpanzees. The experimenter puts a dot of bright rouge on the chimp's face and then observes the chimp looking at his face in a mirror. Self aware chimps (and human babies) finger the spot on their face; those who are not self aware finger the reflection. An exciting challenge in psychology is inventing new methods so that previously untestable questions become testable.

**Is psychotherapy more beneficial than psychiatric medication?**

This question is testable but is too general. What type of psychotherapy? What type of psychiatric disorder? What type and dosage of medication? A better question would be, "Do mildly depressed women, as assessed on the Beck Depression Inventory, improve more after 4 months of cognitive therapy or 4 months of Prozac?" Studies in psychology set out to answer tightly defined questions. The conclusions from a study are limited to the scope of the question addressed. Sweeping, all-or-none claims, such as therapy is better than psychiatric medication, are rarely warranted from scientific studies in psychology. Instead, psychology sets out to determine under what conditions therapy, medication, or a combination of the two are better for the treatment of particular symptoms and disorders.

**Are some people born evil?**

This question is not testable because there is no way to measure evilness in newborns. Perhaps in the future, neuroscientists will identify biological markers (such as chemicals or structures in the brain) for evilness that could be measured even in newborns. This question can be explored in philosophy, though, and many theories in psychology are greatly influenced by philosophical assumptions.

**Do college students consume more beer than other age groups?**

This question is testable but needs to be more precise. What age of college students and what are the comparison age groups? Under what conditions?

**Do students remember information longer after preparing for essay exams than for multiple choice exams?**

This question is testable but needs to be more precise. What type of students? What type of information? Under what conditions?

**Does memory get worse in old age?**

This question is testable but needs to be more precise. What types of memory? What ages? Are people with diseases, such as Alzheimer's, excluded from the study? Are memory tests biased to favor performance of one age group over another? (If an older person writes more slowly because of arthritic fingers, or has trouble hearing or seeing, will this detract from their performance on a memory test?)