

Psychology 2020

Unit 1 The Scientific Approach to Knowledge

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The Science of Psychology

- Psychology is a very broad subject that covers:
 - Human behavior
 - Nonhuman behavior
 - Physiological processes and structures related to behavior
 - Conceptual processes used to explain behavior
- A scientific approach is used in Psychology to advance our knowledge of the subject matter.

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Scientific and Nonscientific Approaches

- Scientific approaches emphasize gaining knowledge through direct observation and experimentation.
 - This is the "empirical" approach
- Nonscientific approaches rely on intuition, inference, hearsay etc. rather than direct observation and experimentation.

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Scientific and Nonscientific Approaches

- Scientific approaches are skeptical and critical and emphasize the following in their data collection methods:
 - Systematic and controlled observations
 - Accurate and precise measuring instruments that produce valid and reliable measurements
 - Testable hypotheses involving clear, operationally defined terms
 - Unbiased and objective reports of research findings

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Scientific and Nonscientific Approaches

- Nonscientific approaches are accepting and uncritical. They often involve
 - Casual, uncontrolled observations
 - Inaccurate and imprecise measuring instruments that produce invalid and unreliable measurements
 - Untestable hypotheses involving ambiguous terms
 - Biased and subjective reports of the phenomena being studied.

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The Advantages of using a Scientific Approach in Psychology

- The scientific method provides specific rules for gathering, reporting and evaluating information.
- This method encourages objectivity through replication.

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Goals of Science

- Description of behavior
 - *"Jurors judge attractive defendants more leniently than unattractive defendants"* .
- Prediction of behavior
 - *"High school seniors with higher SAT scores will have higher college GPAs"* .
- Determining Causes of behavior
 - *"Gamblers play slot machines because sometimes they win money"*.
- Explanation of behavior
 - *"Exercise reduces hunger because blood flow is directed to the muscles rather than the digestive organs"* .

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Determination of Cause

- Temporal precedence
 - The causal event must come before the event it causes.
- Covariation of cause and effect
 - When the causal event is present we see the effect more often than not.
- Alternative explanations have been eliminated.
 - It has been determined that nothing other than the causal event could be responsible for the observed effect.

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