If a theory is able to withstand rigorous tests of its validity, the question then becomes one of application. Can such a theory be applied without giving rise to inconsistencies?

**WHAT IS A THEORY?**

Will such a theory help us to achieve some useful purpose?

Is such a theory needed at all?

Considerations for Evaluating a Theory:

1. Descriptive adequacy. Does the theory accord with the available behavioral, physiological, neuroscientific and other empirical data?

2. Precision and interpretability: Is the theory described in a sufficiently precise fashion that other theorists can interpret it easily and unambiguously?

3. Coherence and Consistency: Are there logical flaws in the theory? Does each component of the theory seem to fit with the others into a coherent whole? Is it consistent with theory in other domains (e.g. the laws of physics)?

4. Prediction and Falsifiability: Is the theory formulated in such a way that critical tests can be conducted which could reasonably lead to the rejection of the theory?

5. Postdiction and Explanation: Does the theory provide a genuine explanation of existing results?

6. Parsimony: Is the theory as simple as possible?

7. Originality: Is the theory new or is it essentially a restatement of an existing theory?

8. Breadth: Does the theory apply to a broad range of phenomena or is it restricted to a limited domain?

9. Usability: Does the theory have applied implications?

10. Rationality: Does the theory make claims about the architecture of mind that seem reasonable in light of the environmental contingencies that have shaped our evolutionary history?

If a theory can pass these crucial tests, then the theory can be compared with other competing theories to see if the current theory represents a replacement or extension of theories currently in use.

A new theory can be justified if it has the potential to explain things that other theories cannot.

HYPOTHESIS: A hypothesis is an attempt to explain phenomena.  It is a proposal, a guess used to understand and/or predict something.

THEORY: A theory is the result of testing a hypothesis and developing an explanation that is assumed to be true about something.  A theory replaces the hypothesis after testing confirms the hypothesis or the hypothesis is modified and tested again until predictable results occur.

Empiricism: the belief that accurate knowledge can be acquired through observation.

Empiricism is the essential element of the scientific method.

Scientific Method: a set of principles about the appropriate relationship between ideas and evidence.

Rule of Parsimony: when a theory starts as a simple one.

A theory explains why and how things work the way they do.

If you say you should not eat too much bacon because it decreases longevity—you say should and this is really your hypothesis.

This hypothesis is known as a falsifiable prediction made by a theory.

We develop theories-🡪 derive hypothesis from them -🡪 test the hypotheses by gathering evidence to modify the theory.