Questions

■ Q1: What is the main difference between Tolman's purposive behaviorism and the classical behaviorism and why is it an important difference

■ Q2: Explain the term prägranz and what consequences on memory it might have
Chapter six
A transition to modern cognitivism
part 2

Tolman and the gestaltists

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but you can call me
얄말
Tolman
- His (new) behavioristic view
- Two of his experiments and findings
- Summary of his theory

Gestalt Theory (gestalt = shape or figure)
- The founders and main concepts
- Gestalt laws
- Learning and memory
- Legacy and critique
The American Edward Chace Tolman (1886-1959) was a behaviorist but challenged the traditional view in behaviorism. He created a intermediate step between behaviorism and cognitivism. He purposed that behavior is never simply the result of mindless Stimuli-Response connection. He claimed that all actions are directed toward some goal by cognitions, cognitions being labeled as intervening variables* that could be a observed behavior. There should be some purpose.

Tolman: “Mental processes are to be identified in terms of the behaviors to which they lead” (1932). This is still a behavioristic view.

* is used to explain relationships between observed variables (more easy explanation will follow)
Setup
1. A rat is released into a maze with several different paths to the goal and is allowed to run freely until it has learned the maze.
2. Then a barrier is placed at either Block A or Block B, or no barrier and the rat gets to start again.
3. The idea is that the hungry rat wants to reach the goal as quick as possible.

Result
Case 1. When there is no block almost all rats select Path 1
Case 2. When Block A is present 93% of the rats select Path 2
Case 3. When Block B is present most of the rats select Path 3

Discussion: S-R theory predicts that in Case 3 the rat should take Path 2 because the entrance to it is not blocked. How can the rat know that Block B also serves as a Block for Path 2? Has the rat developed some cognitive map of the maze? Tolman says YES, that is exactly what we should assume.
Setup
1. A rat is released into maze 1 and learn how to reach the goal where the food is.
2. The rat is then placed in maze 2 which looks similar but the path to the goal in maze 1 is blocked.

Result
In maze 2 the rat chooses a path that has about the same direction to the goal as in maze 1.

Discussion: Behavioristic theory predicts that the rat should choose one of the paths close to (path 10 or 9) the rewarded path in maze 1 because they are the most similar. In maze 1 the rat did not learn a series of responses (like left and right) but a place. Again the rat uses a cognitive map to find the way.
Summary of Tolman's system

- **Behavior is purposive**
  - The purpose that guides the organism’s behavior is the expectation of a reinforcing outcome.

- **Behavior is cognitive**
  - Cognitions – the organism’s awareness of possible/probable connections between certain actions and certain outcomes.

- **Reinforcements establishes and confirms expectancies**
  - Reinforcement learning connects stimuli and expectancies

- **A theory of purposive behaviorism is molar, not reductionist**
  - Behavior is viewed as large units of behavior that are unified by a single purpose
Gestalt psychology

- The fathers of Gestalt psychology
  - Kurt Koffka (1886-1941)
  - Wolfgang Köhler (1887-1967)
  - Max Wertheimer (1880-1943)

- Main concepts
  - Problems are solved by insight (not trial and error)
  - Behavior is molar not molecular (same as Tolman)
  - The whole is greater then the sum of its parts
  - Prägnanz (Good form) – the brain wants to see the best form possible

- The laws of perception can be used to summarize
  - IMPORTANT! Gestalt psychologists consider the laws to be applicable to both perception and thinking
Principle of closure
Principle of continuity
Gestalt Laws (3/4)

Principle of Similarity
Principle of proximity

There are a few more Gestalt Laws...
Just for fun
Learning and memory

- Learning is the result of formation of memory traces. Due to prägranz what we remember is not always what we perceive.
- Furthermore (due to the gestalt laws), what is perceived is not always the correct physical reality.

- There are three tendencies in organization of memory, *Wulf* (1938):
  - Leveling – a tendency to make things more symmetric and tone done abnormalities or peculiarities.
  - Sharpening – emphasizing the distinctiveness of an object.
  - Normalization – modification to conform with previous memories.
Gestalt psychology is considered the beginning of contemporary cognitive psychology for two reasons:

- Concerns perception, awareness, problem solving, and insight
- It rejected behaviorism for being too mechanical

Some critique:

- Gestalt theory can be rather vague when defining concepts such as “whole” or “part”
- Not very useful in explaining or predicting behavior, they show that some rules exist but doesn't give an explanation of why
THE END
Questions

Q1: What is the main difference between Tolman's purposive behaviorism and the classical behaviorism and why is it an important difference?
A1: The role of purpose and the belief in cognitions. It is important as a step between behaviorism and cognitivism.

Q2: Explain prägranz and what consequences on memory it might have.
A2: Its the rule of “good form”, the brain wants to interpret things in an as good way a possible. So it changes things. What we remember is a changed perhaps “better form” of the original stimuli/memory.