SENSURVEILEDNING

Emnekode og navn: PSY1012/PSYPRO4112	Semester / År / Eksamenstype: H2019/ Skriftlig eksamen, 4 timer

Oppgave: Answer two of the following three questions:

1. How to humans understand words and sentences in language? Hvordan forstår mennesker ord og setninger i språk?

2. Describe the role gestalt psychology had on our knowledge of perceptual organisation. Beskriv hvilken rolle gestaltpsykologien hadde på vår kunnskap om perseptuell organisering.

3. What influence do the properties of working memory and of long-term memory have on how we solve problems? Hvilken innflytelse har arbeidshukommelsens og langtidshukommelsens egenskaper på hvordan vi løser problemer?

Relevant pensumlitteratur:

Cognitive Psychology. E. Bruce Goldstein, Johanna (Hannie) C. Van Hooff (newest edition).

Eksamenskrav:

Løsningsforslag oppgave 1:

Language can be described in different ways, but some of the commonalities between different languages that they are communicative, rule-based and creative. The different levels in studying language may be mentioned, like phonetic, morphemic level etc.

The units we are most aware of in language are words, the units that contain and transfers meaning from one person to another. Understanding words is vital to good language processing, as is being able to put words together to form sentences. The process of perceiving words requires the perception of smaller units but meaning will always affect the perception of sounds/phonemes in oral language as well as letters in written language.

The phonemic restoration effect shows this by demonstrating how our perception covers lacking sounds based on meaning of a word. Contextual meaning also plays a role in perceiving written letters in written language.

The word frequency effect and lexical ambiguity may be discussed, as may the word superiority effect, demonstrates that a letter is more easily recognised when part of a word compared to when it is part of a non-word or when appearing alone. Lexical effects are highly relevant for answering the question, as is knowledge about how syntax and semantics guide word processing.

Understanding sentences depends on how semantics and syntax work together, and neuropsychological studies are relevant to answer it. In discussing syntactic effects, parsing is important.

Minstekrav for bestått besvarelse 1.

To pass the exam there must be some kind of explanation of what language is, either by a short definition or by describing the different levels and/or characteristics.

The question is intentionally wide and can be answered in very many ways. Therefore, the only thing needed to pass is to have some discussion of how words may be processed and how sentences may be processed from a cognitive perspective.

The depth of the discussion and the level of detail will increase the quality of the answer and lead to a better grade.

Løsningsforslag oppgave 2:

According to Gestalt psychology, apparent movement, for example, happens because our minds fill in missing information. This belief that the whole is greater than the sum of the individual parts led to the discovery of several different phenomena that occur during perception.

The law of closure is another example of a Gestalt law of perceptual organization. According to this principle, things in the environment often tend to be seen as part of a whole. In many cases, our minds will even fill in the missing information to create cohesive shapes.

Gestalt psychology was founded by German thinkers Max Wertheimer, Wolfgang Kohler and Kurt Koffka and focused on how people interpret the world. The Gestalt perspective formed partially as a response to the structuralism of Wilhelm Wundt, who focused on breaking down mental events and experiences to the smallest elements. Max Wertheimer noted that rapid sequences of perceptual events, such as rows of flashing lights, create the illusion of motion even when there is none. This is known as the phi phenomenon. Motion pictures are based on this principle, with a series of still images appearing in rapid succession to form a seamless visual experience.

According to Gestalt psychology, the whole is different from the sum of its parts. Based upon this belief, Gestalt psychologists developed a set of principles to explain perceptual organization, or how smaller objects are grouped to form larger ones. These principles are often referred to as the "laws of perceptual organization."

However, it is important to note that while Gestalt psychologists call these phenomena "laws," a more accurate term would be "principles of perceptual organization." These principles are much like heuristics, which are mental shortcuts for solving problems.

Minstekrav for bestått besvarelse 2.

To pass the exam the student needs to have explained what gestaltpsychology is and to explain the principle of at least one law of organization. To have mentioned Max Wertheimer, Wolfgang Kohler and Kurt Koffka is an advantage, but is not required to pass.

The depth of the discussion and the level of detail by more than one law and also describing the phi phenomenon will increase the quality of the answer and lead to a better grade.

Løsningsforslag oppgave 3:

The components of working memory are the central executive, visuo-spatial sketchpad, phonological loop and episodic buffer. Phonological loop and visuo-spatial sketchpad process auditory (especially language) and visual information respectively. The episodic buffer binds

together information in different modalities. All of these components have capacity to hold and process only a small number of chunks of information. What exactly constitutes a chunk depends on experience, and thus information in long-term memory. For example, experts typically can chunk together several steps of a problem-solving procedure, and so reduce their working memory load when solving a problem in their areas of expertise.

Relevant properties of long-term memory are that it stores information in a meaning based as well as a visual code, that it efficiently retrieves relevant information, and that it is good at pattern matching. Efficient retrieval of relevant information combined with limited capacity for information processing should bias people towards reasoning based on past experience and pattern matching. A suitable example would be that expert chess players do not differ from less expert players in short-term memory capacity when remembering random arrangements of chess pieces. However, when remembering positions from real games, the more expert players remember larger chunks, indicating that they recognize familiar patterns. The quality of expert players' looking ahead in a game is not much affected by time constraint, again indicating reliance more on pattern matching than brute force calculation. This is only an example of a possible approach, not something that is required. Another example would be that when people are to evaluate the logical validity of all four combinations of believable, unbelievable, valid and invalid syllogisms, they accept c. 90% of believable syllogisms, regardless of validity. Of the unbelievable syllogisms, they reject 90% of the invalid and 50% of the valid. It seems people simply do not bother to reason logically when conclusions are believable. This may be interpreted as a sign of poor reasoning, or else a strategy of efficiently focusing mental effort on cases that conflict with prior knowledge. What makes such a strategy efficient is that long-term memory is good at retrieving relevant information, while working memory has very limited capacity. Checking even what is believable would waste precious resources. What I want students to understand is that some apparent weaknesses may be seen as working with the strengths of human cognition and avoiding the weaknesses.

Minstekrav for bestått besvarelse 3:

To pass the exam the student needs to have explained both working memory and long-term memory. In addition, she needs to have drawn a line between how these memory structures work and how humans solve problems.

Minstekrav for å bestå eksamen:
To pass the exam (to get an E) the student needs to have covered "minstekrav" for two of the questions.

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