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93405



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OUTSTANDING SCHOLARSHIP EXEMPLAR



Mana Tohu Mātauranga o Aotearoa
New Zealand Qualifications Authority

Scholarship 2025 Psychology

Time allowed: Three hours
Total score: 24

Check that the National Student Number (NSN) on your admission slip is the same as the number at the top of this page.

You should answer ALL the questions in this booklet.

Pull out Resource Booklet 93405R from the centre of this booklet.

If you need more room for any answer, use the extra space provided at the back of this booklet.

Check that this booklet has pages 2–23 in the correct order and that none of these pages is blank.

Do not write in the margins (XXXX). This area will be cut off when the booklet is marked.

YOU MUST HAND THIS BOOKLET TO THE SUPERVISOR AT THE END OF THE EXAMINATION.

Make sure you have the paper Resource Booklet 93405R.

INSTRUCTIONS

You must answer ALL three questions.

The Resource Booklet contains a variety of resources based on a theme: **cognitive psychology**.

The Resource Booklet has resources that relate specifically to Questions One and Two. The resource booklet may be used, but is not required, for Question Three.

Space for planning has been provided after each question.

QUESTION ONE

Ash, an Honours student in Psychology, used the research into how language restructures cognition (**Resource A**) to plan a research study (**Resource B**) investigating whether the processing of navigation instructions is influenced by language.

Find flaws in the current design of Ash's research study, and suggest improvements.

PLANNING

Begin your answer to **Question One** here:

B I U     

Ash's research into restructuring cognition through language, while incredibly solid, must be evaluated properly in order to identify flaws that are bound to exist in research. Through this evaluation, we will be able to improve the research to achieve pristine methodology and reliable data.

While the sample size is rather large for a student's study, with a total of 200 participants divided into two groups, this still remains a relatively small sample size. In order to gain more reliable data from this group of participants on cognitive restructure, there should be an even larger sample size of around 1000 in order to safeguard inaccuracies in data and ensure results are more reliable and valid through natural strength of numbers. Further, with the two groups being comprised of bilingual migrants to New Zealand and monolingual English speakers, it would appear that many effects of cultural bias are mitigated by in the inclusion of migrants rather than bilingual New Zealanders. However, with the study only taking into account participants that have migrated specifically to New Zealand, there is an element of cultural bias there in itself. In New Zealand, migration from non-English speaking nations is largely from Asian nations, primarily China and South Korea, or Pacific Island nations, primarily Samoa and Tonga. With this knowledge, it is incredibly statistically likely that the group of migrant participants is composed of individuals from one of the aforementioned nations, creating incredibly limited results, as migrant participants are unlikely to provide data that is generalisable enough to apply to those of South American, European or African cultures and descent, especially considering that most European migrants to New Zealand are of British descent, meaning they would not qualify for the study. This is a major instance of cultural bias that cannot be overlooked if Ash wishes to achieve reliable results. To mend this would be rather laborious, but still possible. Ash could corroborate their research with similar studies made overseas with European, South American, or African demographics, or alternatively could come up with another method of testing this for overseas demographic in the form of a survey while still conducting their primary research in order to gather broadly applicable data for a culturally diverse selection of individuals. While Ash has eliminated the possibility of known cognitive impairments interfering with a participant's ability to perform this memory test, this does not completely guarantee that all participants will be on an equal playing field. Variety in personality can impact the participant's ability to recall short-term memory in this test, as many people are more easily stressed than others by nature, therefore impairing certain participants' cognitive ability to encode and recall memories through the effects of the stress-memory relationship despite Ash's efforts. While this flaw in research seems unavoidable without manipulating the participants sample, it is worth attempting to combat. Ash could take on precautionary measures to ease the minds of participants to avoid stress influence by creating a soothing environment and reassuring them prior to putting them in a test full of pressure. Alternately, to truly safeguard the reliability of results, Ash could create a compulsory survey for participants prior to the test, wherein they must agree or disagree with several statements pertaining to their personalities and stress responses in order to gauge which participants have the potential of producing less useful data through impairment. While randomly assigning conditions A and B to each participant in their respective groups works well, we can once again improve this through strength in numbers by having each participant complete the maze twice, under separate conditions each time, with the path they take in the maze differing between attempts in order to keep the results accurate. Not only would this improvement make the data naturally more reliable by requiring a larger number of participants to complete the maze under each condition thereby providing an abundance of data, this would also create more reliable data, as the factor of stress impairment is less likely to affect results, since the possibility of more stress-prone individuals being assigned one particular condition and obstructing the data will be safeguarded and wholly prevented by this extra step for participants. Furthermore, this study's real world application, while extremely useful in terms of understanding human cognition, still

requires a higher level of generalisability as aforementioned, particularly in terms of safeguarding cultural bias. This will further ensure that the results of the research are not only more reliable and generalisable to different cultural backgrounds as previously discussed, but its results will extensively become useful in the field of cognitive psychology through the universality of its application; this is a universality that defines cognitive psychology, thereby making generalisability in this context necessary for practical application. In order to further strengthen the application of this study, it would be appropriate for Ash to record the age of any given participant alongside their time and recall ability, as the method specifies participants are diverse in age. Cognitive ability develops and therefore differs with age, meaning it is important to distinguish the age of the participants that produced each set of data. This is because the difference in cognitive ability between people of different ages is likely to impact speed of maze completion and quality of recall in many instances, meaning that this differentiation will create results that are more applicable to the field of cognitive psychology, as it will reveal how the ability that language has to reform cognition may differ in practical application depending on age. A similar principle can be applied to gender. To create even more applicable results, Ash should further distinguish participants when recording results based off of gender. This is because males are scientifically proven to have slower cognitive development than females, which once again may explain slight differences in results if they come up. This will make the study even more practically applicable, much like the recording of participant age. Ethically this study is largely unproblematic; participants are tasked with criteria meaning they must go out of their way to participate thereby reinforcing informed consent and there is nothing psychologically or physically harmful that the participants must tackle. However, giving the participants a more clear understanding of their rights, particularly in regards to their right to withdraw, would strengthen the study overall and give Ash more credibility as a psychologist, as the study would then strictly abide by all ethical guidelines.

Through examining Ash's research methodology and data collection, we are able to see a myriad of flaws beneath an already holistically strong experiment. Through this, we are able to invent amendments to the study in order to vastly improve it in terms of generalisability, reliability, application, validity, and ethics in order to strengthen Ash's credibility as a psychologist, while creating a study that will produce the best possible results. These are the ways in which we can amend Ash's research in order to infinitely improve it

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QUESTION TWO

Analyse how a selection of **Resources C, D, and E** examine an issue in cognitive psychology. Provide your own insight into possible solutions, using psychological approaches.

PLANNING

Begin your answer to **Question Two** here:

B I U     

The primary issue in a rather dated, yet doubtlessly ambitious field such as cognitive psychology lies in the perpetual struggle the field must wrestle with in order to explain human behaviours through factors of strict biology; these factors being human cognition and its influence on complex human behaviours. Resources C, D, and E examine this unwavering struggle within the field of cognitive psychology through concrete studies which reveal the impossibility of explaining human concerns through basic cognitive functions, no matter how objective they may be.

Cognitive psychology is a field which rose to prominence through the 'Cognitive Revolution' of the 1950's, being partially confounded on beliefs first conceived by philosophical deliberations dating back as far as the 18th century, wherein philosophers such as John Locke were seen preaching the concept of empiricism; the idea that all knowledge is gained from experience. This is something that was adopted within the field of cognitive psychology, as the field posits a strictly biological perspective to processes of human learning, proposing the primacy of human senses in creating knowledge. However, the issue with the field becomes very clear once its straightforward consideration of pure human biology is considered: How, in an continuously evolving human world, can straightforward frameworks remain accurate to explaining human learning? This is an issue examined in depth by resources C and D, and one that we can venture to solve through examining psychological approaches. In cognitive psychology, a key aspect of testing is something called transfer testing, wherein a researcher verifies whether certain cognitive abilities are applicable to contexts outside of the one in which the ability was first developed. In research on memory training published by the American Psychological Association (resource C), issues in transfer testing are examined by the study's lead author, who states that the "analysis shows that simply loading up the brain with training exercises will not lead to better performance outside of the tasks presented within these tests". This is something that aligns with conditional memory, an idea in cognitive psychology that posits that the ability to recall certain information is dependent on the state in which the information was first learned. This study serves as a perfect example of this major issue in the memory aspect of information processes in cognitive psychology, as this excerpt from the study's lead author posits that the participant's working memory improvements and the information that has caused them are only cognitively relevant in the environment the participant's performed their tests in. Furthermore, resource C continues to examine issues in cognitive psychology through its critique of its application to people with ADHD in particular, positing that memory training methods fail for neurodivergent minds specifically. This is an issue of localism that plagues cognitive psychology, as its findings and theories often only apply to a typical design of the minds due its straightforward and reductionist take on human learning. Further, this reveals an outdated element to the field, as it has been unable to progress with the world, as shown by its inability to explain human learning and improve it from a neurodivergent perspective, which is particularly relevant in the contemporary world where neurodivergence is both more common and more recognised than it was at the dawn of cognitive psychology. This element of outdated explanations is further examined by resource D, which highlights the inability of cognitive psychology to apply in a straightforward manner to human learning in the technological age. Tanil and Yong (2020) (resource D) is a study that took two groups of participants, a low-phone salience (LS) and a high-phone salience (HS) group who had no access to their phones and extremely readily available access to phones respectively, with both groups being tested on memory on the condition that they were unable to use smartphones or talk. The results presented a staggeringly low mean memory accuracy for the HS group in comparison to the LS group, showing that the memory aspect of cognitive psychology is impaired in effectiveness by technology in the modern world. This awareness of neurodivergence and changing technological conditions impairing seemingly straightforward learning processes through memory is something that the cognitive psychology field utterly lacks due to the computer framework analogy that has been applied to human learning within the field since its birth. The mind is posited to work like a computer. At the time, this was a simple analogy as computers functions were much simpler than they are now, but the field has not changed with the times in order to keep up with new technological complexities or human complexities, as the factors of neurodivergence and technological barriers are yet to be addressed within the field, as highlighted by resources C and D. This is an issue that can be mended through the application of the behaviourist approach to psychology. While cognitive psychology neglects or focus on human behaviour deliberately in antithesis to other psychological fields, the application of a behaviourist approach may assist the field in understanding what causes humans to respond differently to seemingly universal cognitive learning processes depending on their minds or the era in which they live. This is because the behaviourist approach to psychology posits that human behaviour is a product of the environment, and through examining this behaviour, it becomes clear that unpredictable cognitive behaviour is a product of the contemporary world in large part, as it provides many obstacles in cognitive learning that our minds have been conditioned to. This approach provides a perspective for cognitive psychologists to mend the downfalls of the field's practical relevance in the contemporary world, and opens up a whole new world of cognitive understanding and research possibilities.

In the world of cognitive psychology, explanations of human learning through, perception, memory, and attention through a straightforward lens is what gives the field so much power; it seeks to explain the complexities of the human cognition by simplifying it to a point of comprehension. However, a new issue arises with this simplification; it becomes a field wherein factors external to human biology in cognitive impact are neglected and, therefore, understanding of the contemporary cognitive landscape is more limited than it ought to be. Bornstein & Robicheaux (2009), is a study wherein trauma in the context of memory is explored, and resource E examines this study and the way in which it highlights these reductionist aspects of cognitive psychology. In this study, the stress-memory relationship is examined, as it posits that difficult emotional events often trigger a "subjective and physiological stress response from an eyewitness". The understanding of the stress-memory relationship is shown to be limited and varied within the field of cognitive psychology, as the survey shown in resource E exemplifies this by revealing a survey of 37 eyewitness memory experts, 36 fundamental memory experts, and 109 laypeople responded with an 'agree', 'disagree', or 'don't know' prompt paired with a variety of statements regarding effects of stress on cognitive memory processes and information encoding and retrieval. The general consensus is that the impact is undoubtable, but the three types of memory experts are shown to have staggeringly different perspectives on this impact, showing a potential misunderstanding in general for the stress-memory relationship. This lack of understanding of the stress-memory relationship reveals an issue of cognitive psychology wherein external factors into cognitive functions are seldom acknowledged, with the field reducing these functions to what they are on their own. This is an issue that can be addressed and mended in the contemporary cognitive world by the adoption of behaviourist and psychodynamic theories. The behaviourist approach posits that the environment determines human behaviour, as aforementioned, which is reflected by the stress-memory relationship, wherein one's traumatic experiences with their environment impairs their minds down to the cognitive level. Furthermore, this can be paired with theories under the psychodynamic approach, which posits that the unconscious influences human behaviour. While it may not be realised, stress and fright, even on a level that is not consciously traumatic, impairs our cognition in a way that we are not properly aware or conscious of, revealing that the unconscious mind can in fact influence the process and output of our cognitive abilities. Through applying these approaches, despite their focus on behaviour rather than cognition, we can further understand why cognition works the way it does in certain circumstances through the active acknowledgement of behavioural and unconscious factors, allowing for researchers to study cognition in differing conditions in a way that benefits the field and challenges its reductionist nature.

Through resources C, D, and E, it becomes apparent that the whims of a psychological field which rose to prominence in the mid-twentieth century are bound to lack resonance with a contemporary society wherein humans face unprecedented issues and obstacles that are bound to impact us down to the cognitive level. Through applying the aforementioned approaches to this issue of outdatedness and the many other issues it carries with it, we can come one step closer to solving the major issues within the field of cognitive psychology that are revealed to us and examined through resources C, D, and E.

QUESTION THREE

Select ONE of the statements below. Use your own knowledge of psychology to address the statement, including links to debates within psychology, and provide an analysis of different sides of the argument.

- ☒ (a) Current memory models oversimplify human memory.
- ☐ (b) Learning is best explained by cognitive theories.
- ☐ (c) Your working memory capacity is the best predictor of intelligence.
- ☐ (d) Intelligence is more about adaptability than problem-solving ability.

PLANNING

Begin your answer to **Question Three** here:

B I U     

Since the dawn of the Cognitive Revolution, the scope of the human cognitive landscape has felt far more tangible and comprehensive to psychologists than ever before. Through a vast variety of theories, concepts, and frameworks, cognitive psychologists have aimed to simplify the complexities of the human cognition in order to explain it in a way that we are able to easily digest. But can we truly comprehend these complexities if they are watered down and reduced to independent pieces of an intricate puzzle? The history of psychology across many fields suggests that this is impossible. The notion that current memory models in cognitive psychology oversimplify human memory is one that rings doubtlessly true in the modern world of cognitive psychology, and this restraint is something that is in urgent need of amendment.

Explaining human memory through a select few frameworks and concepts is something that is impossible to do without inevitable omission of important information in the process of summation. Through examining the multi-store model and the Schema theory by which the cognitive concept of memory is supposedly explained, we can see the way in which these explanations provided by cognitive psychology are often oversimplified by exploring limitations of understanding through the reductionism vs. holism debate in psychology. The multi-store model is a framework of human memory which posits that there are three primary types of memories that are stored in the human psyche; these being sensory memory, short-term memory, and long-term memory. While the first two categories of memory seem somewhat similar in function, sensory memory is a highly transient memory storage made to hold recently input sensory information, while short-term memory is essentially a bank for a limited amount of processed information for a limited duration of time. Meanwhile, the long-term memory compartment of this model is focussed on all memories stored from your first ever memory; these memories are not prone to expiration, unlike the ones in the short-term compartment. This framework, while explaining memory capacity in a way that is easy to digest, failed at fully encapsulating types of memories the human cognition processes and stores, reducing this process to three simple categories without including the complexities of human memory. For example, subcategories of memories such as procedural memories or episodic memories do not fit into a binary sensory, short, or long term category of memory, meaning that, while cognitive psychology acknowledges the role of these abstract types of memory, it fails to include it in its primary frameworks for understanding human memory. This is a similar issue we encounter with Schema theory, which posits that all sensed information is similarly organised and compartmentalised by the cognition, with much of this information being assorted right after transduction, the process of converting sensory information into neural impulses for the brain. This theory, much like the multi-store memory model, oversimplifies the brain to a set of binary compartments, where all processed information and memory fits in neatly. These models and theories face heavy criticism from the perspective of the reductionist vs. holism debate, as it exhibits a tendency to take a disadvantageous reductionist stance on human memory. The reductionist stance of the debate posits that human behaviour and, in this case cognitive processes, can be most accurately explained by reducing complex systems down to individual, simpler parts, in order for easy testing and understanding. While this opens up more opportunities for scientific testing, it is also a stance that often greatly oversimplifies the impossibly vast complexities of the human mind, just as we see these current memory frameworks doing in the context of human memory. By framing the human cognition as something simple with binary systems and compartments, the field of cognitive psychology may have made the mind easier to understand, but it has not fostered a completely accurate understanding of the minds by doing this; the mind does not have binary compartments and its systems are not straightforward and constant between every individual. This is the underlying flaw in cognitive psychology's understanding of human memory. By oversimplifying inherently complex systems, we limit our ability to explain and understand human memory holistically and accurately. This is the truth of current memory models.

Universality is a key aspect of human understanding. If something is universal, it becomes easy for each and every individual to identify with, thereby creating better understanding of the universal phenomena in question through widespread identification. In psychology, the concept of universalism is used in application to a broad variety of psychological theories and models in order to provide understanding of the psyche of each individual, regardless of who they are. However, this is something that completely oversimplifies humans by nature, as we are not identical to one another in behaviour or in process. Cognitive psychology, in its reductionist tendencies, take one step further in oversimplification of human memory in a way that is best represented by the universalism vs. localism debate in psychology. In cognitive psychology, it is often posited that the human cognition functions much like an old computer; pieces of sensory information enter the brain and are processed to result in meaningful perceptions cultivated by the mind, which are then stored in binary memory compartments. This straightforward process is one that is argued to be consistent in human cognition universally, but the uninterrupted smoothness of this process eliminates our understanding of cognitive obstacles that impair the way memory is stored, thereby continuing to oversimplify memory through the computer model. ADHD memory training research from the American Psychological Association and Bornstein & Robicheaux (2009) are both contemporarily pertinent psychological studies in the field of cognition that posit that this model is missing unforeseen cognitive obstacles presented to many, with the field neglecting the concept of localised cognitive abilities rather than universal ones. In the ADHD memory training research, we see a primary instance of cognitive oversimplification of memory, and the way in which cognitive memory abilities are more localised and specific to an individual that the universalism of cognitive psychology will have you believe. The study found that individuals with ADHD were unaffected in a positive way by memory training exercise, revealing that the cognitive structure and processes of neurodivergent individuals evidently vastly differ from neurotypical individuals. Seeing as cognitive memory models are applied under the guise of universality to only fit the neurotypical cognitive landscape, it becomes clear that the field's understanding of human memory processes are not universal, but rather localised, as the field's findings only pertain to one demographic of individuals in this scenario. However, this goes unacknowledged by cognitive memory models, once again epitomising the crime of oversimplification for the sake of creating faux ease of understanding and universalism. This is further corroborated by Bornstein & Robicheaux (2009), which posits that "facing difficult, frightening, and emotional events can trigger a subject and physiological stress response from an eyewitness" (resource E). This presents to us the concept of the stress-memory relationship, a severely misunderstood concept in cognitive psychology which posits that cognition is negatively affected and impaired by stress in terms of encoding and recall. Once again, this reinforces the idea that the straightforward current memory models that we have in place to explain memory are not universally applicable in the way that they aim to be, thereby oversimplifying cognition by not only ignoring natural impairments such as ADHD, but environmental impairments such as stress or trauma. These factors significantly complicate cognitive memory processes in a way not properly represented by current memory models. By ignoring the way in which these models are localised to a singular demographic of neurotypical, unstressed individuals, the field of cognitive psychology disingenuously promotes ideas of universality in its memory models, falsely leading many to believe that cognitive memory processes are straightforward for all as posited by oversimplified models. However, it is clear the evidence reveals the opposite of this notion.

Through examining current memory models in cognitive psychology, as well as applying the key psychological debates of reductionist vs. holism and universalism vs. localism, it becomes abundantly clear that, while the field of cognitive psychology promotes accurate understanding of cognitive memory processes, it fails to truly deliver. Even with all its credibility, a field such as that of cognitive psychology is bound to suffer its own unshakable flaws despite the utility of its models and theories. While the field would be far more contemporarily applicable and useful to a wide range of individuals in understanding their own cognition in a perfect world, the evidence strongly suggests that the field of cognitive psychology still suffers from one major flaw; its current memory models, which grossly oversimplify human memory. This is the truth of cognitive memory processes in the field of cognitive psychology.

Outstanding Scholarship

Subject: Psychology

Standard: 93405

Total score: 22

Q	Score	Marker commentary
1	7	The candidate identifies a range of flaws. These focus primarily on participants and the sampling method but procedure and ethics are also covered. Improvements are insightful, realistic and detailed. Additionally, cultural bias is considered in the response.
2	8	This is a highly integrated response. The candidate uses behaviourism and psychodynamic approaches effectively. Personal insight is shown through making the argument that Cognitive Psychology is dated and cannot explain complex individual differences.
3	7	The candidate uses the reductionism-holism debate to analyse oversimplification of memory and integrates psychological theory. Universalism is also included to good effect, and both debates are effectively integrated into the response. The candidate shows independent reflection in the response and comes to a well-argued position. There is a slight lack of consistency in the use of theories, studies and findings.