

Week 13

AP Psychology

Homework bundle for this week

本周作业合集

exercises.lol

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AP Psychology

Name: _____ Score: _____

1. A longitudinal study is the only design that can show...
 - ☐ differences between age groups
 - ☐ change within the same individuals
 - ☐ the average score of a population
 - ☐ a correlation between two variables
2. An agent that can harm prenatal development is called a _____.

3. In the CED's terms, gender refers to...
 - ☐ biological characteristics
 - ☐ the social and cultural expectations attached to them
 - ☐ a person's age group
 - ☐ a stage of cognitive development
4. The support a more capable person gives and gradually removes is called _____.

5. A child saying "goed" instead of "went" is evidence that the child...
 - ☐ is not learning language properly
 - ☐ has extracted a rule and applied it
 - ☐ copied an adult
 - ☐ has not reached the one-word stage
6. A parent who sets firm limits and explains the reasons is best described as...
 - ☐ authoritarian
 - ☐ authoritative
 - ☐ permissive
 - ☐ uninvolved
7. In Pavlov's study, the bell after conditioning is the...
 - ☐ unconditioned stimulus
 - ☐ conditioned stimulus

☐ unconditioned response

☐ conditioned response

8. The confound in cross-sectional research, where age groups also differ by generation, is the _____ effect.

9. The process of learning a society's expectations and roles is called _____.

10. Saying a language's symbols are _____ means nothing about a word resembles its meaning.

AP Psychology

1. **change within the same individuals**

Following the **same** people is what makes within-person change measurable.

2. **teratogen**

Teratogens are the CED's term for harmful prenatal agents.

3. **the social and cultural expectations attached to them**

Sex is biological; **gender** is the social layer built on it.

4. **scaffolding**

Scaffolding is Vygotsky's account of how social interaction produces development.

5. **has extracted a rule and applied it**

No adult models "goed", so the form must come from a **rule** the child worked out.

6. **authoritative**

Authoritative combines high demand **with** warmth and explanation.

7. **conditioned stimulus**

The bell started **neutral** and became the **CS**; salivation to it is the **CR**.

8. **cohort**

The **cohort effect** means the groups grew up in different worlds, not only at different ages.

9. **socialization**

Socialization runs through family, peers, school and media.

10. **arbitrary**

Because the link is agreed rather than natural, language must be learned socially.

3.1 Themes and Methods in Developmental Psychology

Name: _____ Class: _____ Date: _____

Total: 11 marks

KEY WORDS cross-sectional 横断 • cohort effect 世代效应 • sensitive period 关键期 • longitudinal 纵向
• developmental 发展

Objective

Build the skills to answer exam questions on **developmental** 发展 research design.

You must be able to:

- contrast **cross-sectional** 横断 and **longitudinal** 纵向 designs
- state what a **cohort effect** 世代效应 confounds
- describe **stability against change** and **continuity against stages**
- explain what a **critical** or **sensitive period** 关键期 is

1 Worked examples

Study these first. Each one shows the method for a task used later.

■ Two designs

A **cross-sectional** study compares different age groups at one time — fast, but the groups differ in more than age. A **longitudinal** study follows one group over years — it isolates age, but is slow and loses participants.

■ Cohort effects

People born in different decades differ in schooling, nutrition and technology as well as age. A cross-sectional age difference may therefore be a **cohort** difference, and this is the design's central weakness.

■ Two recurring questions

Stability or change: do traits persist across life? **Continuity or stages:** is development gradual, or a sequence of qualitatively different periods?

■ Critical and sensitive periods

A **critical period** is a window during which a particular input is required for normal development. A **sensitive period** is a window in which development is easiest but not exclusively possible.

2 Practice

2.1 State one advantage and one disadvantage of a longitudinal design. [2]

2.2 Explain what a cohort effect is and which design it threatens. [2]

2.3 A study finds 70-year-olds score lower on a computer task than 20-year-olds.

(a) State the design used. [1]

(b) State one alternative explanation besides ageing. [1]

3 Exam-style questions

3.1 To separate the effect of ageing from generational differences, a researcher should use a [1]

- **A** cross-sectional design
- **B** longitudinal design
- **C** case study
- **D** correlational survey

3.2 A window in which language is learned most easily but can still be learned later is a [1]

- **A** critical period
- **B** sensitive period
- **C** cohort effect
- **D** stage

3.3 A researcher must choose between following 200 children for 15 years and testing 200 children of three ages now.

(a) State one practical reason to choose the second. [1]

(b) Explain the cost of that choice. [2]

Solutions

2.1 advantage: it follows the same people, so age effects are not confounded with cohort; disadvantage: it is slow and participants drop out.

2.2 a difference caused by being born in a different era rather than by age; it threatens cross-sectional designs.

2.3 (a) cross-sectional. (b) the older group grew up without computers, so the difference may be a cohort effect.

3.1 B. following one group removes the generational confound.

3.2 B. a sensitive period makes learning easiest without making it impossible later.

3.3 (a) it delivers results now, at far lower cost and with no attrition. (b) age groups differ in generation as well as age, so any difference found cannot be attributed to ageing alone.

Using the source provided, respond to all parts of the question.

1. Your response to the question should be provided in six parts: A, B, C, D, E, and F. Write the response to each part of the question in complete sentences. Use appropriate psychological terminology in your response.
- A. Identify the research method used in the study.
 - B. State the operational definition of high misinformation in the study.
 - C. Describe what the mean indicates for the percentage of correct responses between the high misinformation group and the low misinformation group.
 - D. Identify at least one ethical guideline applied by the researchers.
 - E. Explain the extent to which the research findings may or may not be generalizable using specific and relevant evidence from the study.
 - F. Explain how at least one of the research findings supports or refutes the misinformation effect.

Introduction

This research study explores the effect of being presented with varying amounts of misinformation about a specific event on the memory of that event.

Participants

A total of 127 students at a large university were recruited through the university's research participation system. They participated in the study in exchange for course credit. The final sample of participants was 69% women and 31% men. The race/ethnicity of the participants was reported as follows: 65% Hispanic/Latino/a, 15% Black/African American, 11% White/European American, 4% Asian/Asian American, and 5% Other.¹ The participants ranged in age from 18 to 39 years old (mean age = 21.21, standard deviation = 3.28).

Method

After providing consent, participants viewed a 6.5-minute silent video of a mock crime. The video depicted an electrician entering a house to fix items such as an oven and a light fixture. While he was in the house, he stole some of the owners' possessions. After watching the video, participants completed a 12-minute trivia questionnaire as a distractor task.² Participants completed all portions of the study online.

Participants were then told that eight previous participants had written brief summaries of the robbery shown in the video. They were also told that one of those summaries would be presented to them, along with a profile of the previous participant, to refresh their memory. Unknown to the participants, these "previous participants" were not real people. The researchers created the previous participants' profiles based on the demographics of the population of students on the university campus. The goal was to create believable profiles so that the summaries would be more credible to the participants.

Participants were randomly assigned to one of three conditions to receive a summary with a specific amount of misinformation:

- Low misinformation condition: 8 of 40 sentences (20% misleading information)
- Medium misinformation condition: 20 of 40 sentences (50% misleading information)
- High misinformation condition: 32 of 40 sentences (80% misleading information)

The misleading information changed details about items seen in the video. No information was added. The non-misleading sentences were neutral to avoid strengthening the participant's memory of the target items. For example, a misleading item description was, "He noticed the dresser was covered with a brown cloth." In reality, the cloth was navy blue. The neutral description of that item was, "He noticed the dresser was covered with a cloth."

After reading an entire previous participant's summary, each current participant completed a 5-minute math test as a distractor task. Then, all participants were asked an identical set of 40 multiple-choice questions in random order about the mock crime video. Each question had three answer options:

1. Correct: the correct option corresponding to what was shown in the video (e.g., a navy blue cloth);
2. Misled: an incorrect answer that reflected misinformation provided in the summaries (e.g., a brown cloth); and
3. Incorrect: an incorrect answer containing information that was not portrayed in the video or any summary (e.g., a yellow cloth).

Participants then completed a questionnaire asking about the credibility of the previous participant's summary (e.g., "How good was the quality of the summary?" and "How familiar with the video was the participant who wrote this summary?").

Results and Discussion

The researchers analyzed the results of the questionnaire by comparing participants' correct responses with how participants viewed the credibility of the previous participant's summary. The researchers hypothesized that if participants distrusted the summary, they would be less likely to incorporate the information into their memory of the event, leading to their being less likely to choose an incorrect answer. The results are shown in the table.

Mean Percentages of Correct, Misled, and Incorrect Responses for Each Misinformation Condition

Response Type	Misinformation Condition		
	High Misinformation Group	Medium Misinformation Group	Low misinformation Group
Correct	63%	66%	74%
Misled	30%	27%	19%
Incorrect	7%	7%	7%

The researchers found that within each condition, participants performed best if they distrusted the accuracy of the summary. Participants who were presented with higher levels of misinformation were more likely to report being distrustful, and those who reported being distrustful of the summary resisted more misinformation than those who did not.

Pena, M. M., Klemfuss, J. Z., Loftus, E. F., & Mindthoff, A. (2017). The effects of exposure to different amounts of misinformation and source credibility perception on source monitoring and memory accuracy. *Psychology of Consciousness: Theory, Research, and Practice*, 4(4), 337-347.

- 1: Language referencing racial, ethnic, or gender identities may be outdated or fail to reflect the complexities of identity that participants represent. Race/ethnicity categories reflect those reported in the original research article.
- 2: a task that is unrelated to the primary task that participants are asked to complete before they are asked to recall the target information.

This question has three parts: Part A, Part B, and Part C. Use the three sources provided to answer all parts of the question.

For Part B and Part C, you must cite the source that you used to answer the question. You can do this in two different ways:

- Parenthetical Citation:
For example: "...(Source 1)."
- Embedded Citation:
For example: "According to Source 1..."

Write the response to each part of the question in complete sentences. Use appropriate psychological terminology.

2. Using the sources provided, develop and justify an argument about whether the presence of others improves performance.
- A. Propose a specific and defensible claim based in psychological science that responds to the question.
- B.
- i. Support your claim using at least one piece of specific and relevant evidence from one of the sources.
 - ii. Explain how the evidence from Part B (i) supports your claim using a psychological perspective, theory, concept, or research finding learned in AP Psychology.
- C.
- i. Support your claim using an additional piece of specific and relevant evidence from a different source than the one that was used in Part B (i).
 - ii. Explain how the evidence from Part C (i) supports your claim using a different psychological perspective, theory, concept, or research finding learned in AP Psychology than the one that was used in Part B (ii).

Source 1

Introduction

In this study, researchers attempted to establish whether the presence of others leads people to perform better on a task than when they are doing the task alone.

Participants

Forty-five undergraduate students, all men, received course credit in an introductory psychology course for their participation. Researchers did not report race/ethnicity data for the participants.

Method

As each participant arrived, he was told the following: “In this experiment, you will be part of a group that will perform a task together. It is important that the members of the group have a uniform appearance. To make you as alike as possible, I’d like you to take off your shoes, put these socks over your own socks, and then put on these shoes. They might be a little large, but we need to have a size that fits everyone. Also, put on this lab coat—it ties in the back—over your own clothes.”

Each participant was then given a pair of large athletic socks, a pair of size 12 athletic shoes, and a large, long lab coat. Each participant was led by the researcher to a large waiting room containing tables, chairs, reading material, and some broken equipment.

Each participant was randomly assigned to one of three conditions: alone, audience, or incidental audience.

1. **Alone condition:** The participant was left in the waiting room alone to put on the clothing.
2. **Audience condition:** A confederate of the researcher was already seated in the waiting room as the participant arrived. The confederate sat attentively in the corner and watched the participant put on the clothing.
3. **Incidental audience condition:** A confederate of the researcher sat in a corner of the waiting room facing away from the participant, repairing a broken piece of equipment while the participant put on the clothing.

For all three conditions, the participant was observed by a hidden research assistant who watched him through a narrow opening in the drapes that covered a one-way mirror. The hidden assistant timed the participant as he completed each of the following activities:

1. Taking off his own shoes
2. Putting on the socks given to him
3. Putting on the shoes given to him
4. Putting on the lab coat given to him and tying it in the back

After the participant completed the four tasks, any confederate present left the room, and the participant was left sitting alone. At the end of 10 minutes, the researcher came back into the room. The researcher explained that the other participants had not shown up and that the researcher had called off the experiment because the researchers needed three people to continue.

When the researcher left the room, the participant was again timed by the hidden research assistant while he completed the following actions:

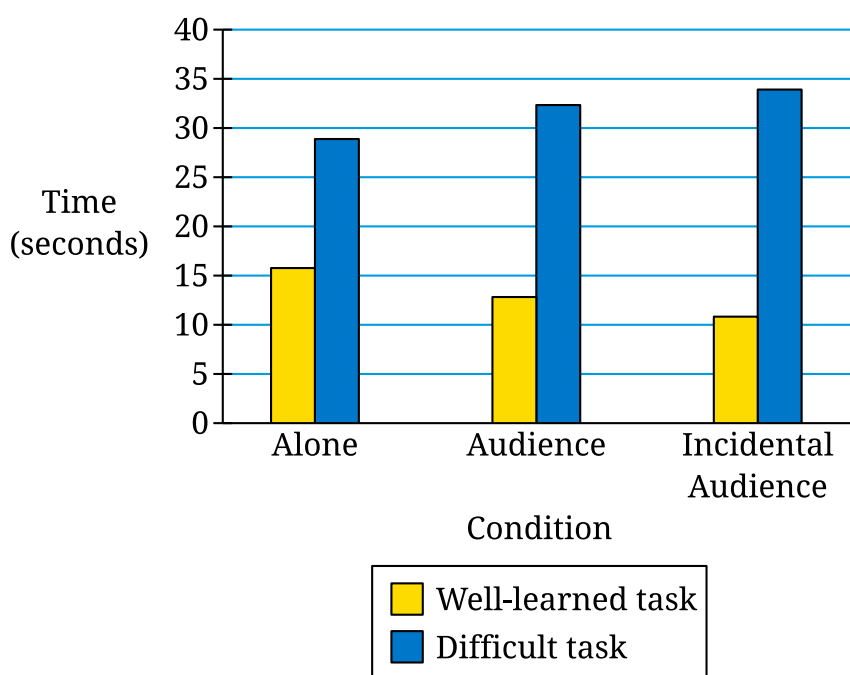
1. Taking off the lab coat
2. Taking off the shoes given to him
3. Taking off the socks given to him
4. Putting on his own shoes

Researchers categorized taking off and putting on their own shoes as simple and well-learned tasks. They categorized putting on and taking off the socks, shoes, and lab coat as difficult and new tasks.

Results and Discussion

Researchers found that performance on the well-learned tasks was faster in the presence of an audience. Performance on well-learned tasks improved both when participants were directly observed (audience condition) and when the confederate was present in the room but distracted (incidental audience condition). When an audience was present, it took the participants longer to complete the new, more difficult tasks. The findings are summarized in the graph.

Audience Condition and Completion Time of Task



For the simple and well-learned tasks, researchers found a statistically significant difference in the amount of time participants took to complete the tasks alone compared with the amount of time it took with an attentive audience.

For the new and difficult tasks, researchers found a statistically significant difference when comparing the amount of time participants took when alone with the amount of time they took when they were in the audience condition or incidental audience condition.

They found no significant difference between the alone condition and the incidental audience condition for either type of task.

Markus, H. (1978). The effect of mere presence on social facilitation: An unobtrusive test. *Journal of Experimental Social Psychology*, 14(4), 389–397.

Source 2

Introduction

In this study, researchers explored how the presence of others influenced the ability of baboons to complete an operant conditioning task.

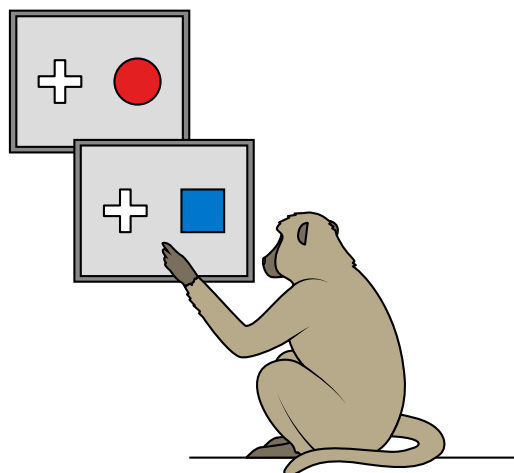
Participants

The study was conducted on 11 baboons (7 male and 4 female; mean age = 5.72 years; standard deviation of age = 1.71; age range = 3–9 years).

Method

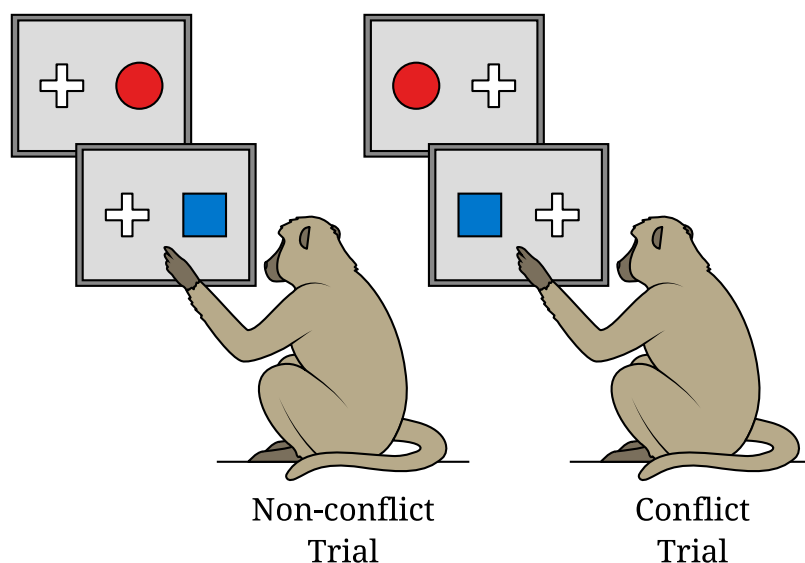
The baboons had access in their enclosure to computers with touch screens, preprogrammed with operant conditioning tasks. When the baboons touched a screen, it triggered the immediate display of a white cross and either a red circle or a blue square. To obtain a food reward, the baboon had to touch the white cross only when the red circle was present. During the non-conflict trials, the white cross was always presented on the left side of the response screen and the red circle or blue square on the right. Incorrect responses produced a three-second time-out.

Figure 1: The Non-Conflict Trial



Baboons performed the task until they correctly demonstrated the rewarded behavior three times in a row.

Once the baboons were trained, researchers increased the difficulty of the task. In 80% of these trials, the baboons were given the setup they were already familiar with, in which the cross was on the left and the circle or square was on the right. But in 20% of the trials, the baboons were presented with an opposite, or a conflicting, setup in which the cross was on the right and the circle or square was on the left. Researchers measured the baboons' response times when presented with the conflicting task versus the nonconflicting task.

Figure 2: The Non-Conflict and the Conflict Trial

During these trials, the baboons were randomly assigned to be either alone or in the presence of other baboons performing the same task. For baboons performing the task in the presence of others, they could see other baboons using a computer, but the design of the test chamber prevented any of the baboons from seeing the touch screens of the other baboons. As a result, the baboons could not see the other baboons' responses to the tests.

Results and Discussion

For the baboons who were in the presence of others during the conflicting trials task, their response time was delayed when compared to baboons who were alone. The researchers found that the delayed reaction time was greatest for male baboons in the presence of older males with a higher social rank.

Huguet, P., Barbet, I., Belletier, C., Monteil, J-M., Fagot, J. (2014). Cognitive control under social influence in baboons. *Journal of Experimental Psychology*, 143(6). 2067-2073.

Source 3

Introduction

Vigilance is the ability to maintain attention for prolonged periods while still being on the lookout for relevant signals in the environment. Vigilance performance involves participants responding to infrequent signals over time. In this study, researchers examined the effect of observers on people's vigilance performance.

Participants

Data were collected from 132 participants (98 women; 34 men).¹ All participants were undergraduate students recruited through the research participation system at a large university in the southeastern United States. All participation was voluntary, and participants received course credit for completing the study. The average age of participants was 18.83 years (standard deviation = 2.23 years; range = 18–39 years). Researchers did not report race/ethnicity data for the participants.

Method

For 24 minutes, participants monitored a computer screen displaying repeated presentations of two numbers. They were instructed to press the space bar when they saw two numbers that differed from one another by zero or ± 1 when subtracted. For example, participants were to hit the space bar when presented with the numbers 43 ($4 - 3 = 1$) or 77 ($7 - 7 = 0$), but not when presented with 73 ($7 - 3 = 4$) or 39 ($3 - 9 = -6$).

Participants were randomly assigned to one of four conditions:

1. Evaluative observer condition (29 women; 4 men): The participant completed the task with a research assistant present and seated behind them. The research assistant was instructed to sporadically take notes on a clipboard to create the appearance of actively evaluating the participant.
2. Merely present observer condition (20 women; 13 men): The participant completed the task in the presence of a research assistant who was seated at an adjacent desk, facing the opposite direction. The observer could not directly watch the participant and was engaged in a secondary task, like reading a book.
3. Electronic observer condition (25 women; 8 men): The participant completed the task in the presence of a webcam that was placed on top of the computer screen. A video recorder was also placed on a tripod in front of the participant. The participant was told that the research assistant used these devices to monitor their performance. These cameras were not actually recording while the participant completed the task, but the participant believed they were.
4. No observer present (control) condition (24 women; 9 men): The participant completed the entire task alone in the room. No social presence, electronic or otherwise, was used during this task.

Results and Discussion

Participants who completed the vigilance task alone detected significantly fewer correct number pairs than those who completed the task in the electronic observer condition or the evaluative observer condition. Interestingly, there was no significant difference in correct detections between those in the no observer present condition and those in the merely present observer condition.

The results suggest that when people feel they are being directly evaluated by either an inperson or electronic observer, they perform better on tasks that require vigilance.

Claypoole, V.L., Neigel, A.R., Waldfogle, G.E., & Szalma, J.L. (2019). Evaluative social presence can improve vigilance performance, but vigilance is still hard work and is stressful. *Journal of Experimental Psychology: Human Perception and Performance*, 45(5), 616-627.

1: Language referencing racial, ethnic, or gender identities may be outdated or fail to reflect the complexities of identity that participants represent.

STOP

END OF EXAM

Using the source provided, respond to all parts of the question.

1. Your response to the question should be provided in six parts: A, B, C, D, E, and F. Write the response to each part of the question in complete sentences. Use appropriate psychological terminology in your response.
- A. Identify the research method used in the study.
 - B. State the operational definition of person-oriented dog behaviors.
 - C. Describe what the mean of the person-oriented behaviors indicates for the laughing trials as compared to the talking trials.
 - D. Identify at least one ethical guideline applied by the researchers.
 - E. Explain the extent to which the research findings may or may not be generalizable using specific and relevant evidence from the study.
 - F. Explain how at least one of the research findings supports or refutes the idea that dogs' expressions of the person-oriented behaviors demonstrate stimulus discrimination in operant conditioning.

Introduction

Dogs often comfort their owners by making visual and/or physical contact when the owners cry or by providing help to their owners when they are sick. The study examined whether a dog's reactions to a person's emotions differ based on the dog's prior experience with the person (owner versus stranger).

Participants

Researchers recruited community members with nonaggressive dogs via email. Of those recruited, 16 dog and owner pairs participated in this study. The owners ranged in age from 25 to 60 years (mean age = 47.06 years; standard deviation = 11.89 years), and the dogs ranged in age from 2 years to 13 years (mean age = 6.87 years; standard deviation = 3.35 years). The length of time the owners had their dogs before the study began ranged from 2 months to 13 years (mean = 5.70 years; standard deviation = 3.69 years). The study included the following dog breeds, with the number of each in parentheses: Lab mix (3), black Lab (1), terrier mix (2), corgi or corgi mix (3), French bulldog (1), Jack Russell terrier (1), miniature pinscher (1), miniature schnauzer (1), Shih Tzu (2), and wirehaired pointing griffon (1).

Method

Each dog owner received and signed a consent form. Researchers tested each dog at their owner's house, and the dogs received dog biscuits as compensation for participation in the study.

All dog and owner pairs participated in all four trials of the study. This is called a "within-subjects" design, which means that researchers observe each participant in every condition of the study so that a participant can be directly compared to themselves across conditions. The "within-subjects" design serves the same purpose as random assignment.

A researcher who was unfamiliar with the dogs before the study played the role of the stranger. Upon entering each participant's home, this "stranger-researcher" ignored the dogs by not interacting with them in any way. The stranger-researcher asked the owner to follow the same set of instructions during each trial:

"When you are asked to cry, please pretend to cry to the best of your ability for 20 seconds. The researcher will tell you when to begin and when to stop. When you are asked to laugh, please pretend to laugh to the best of your ability for 20 seconds. When you are acting, please use approximately the same volume. Also, please do not refer to your dog by name, look directly at them, or initiate or reciprocate physical contact during the study."

The owners and the stranger-researcher stayed seated and moved their bodies naturally while they acted out the different emotional states, but they stayed seated. Each dog participated in four separate 20-second-long trials in which (1) the owner cried, (2) the stranger-researcher cried, (3) the owner laughed, and (4) the stranger-researcher laughed.

The order of these trials was counterbalanced across dogs, meaning that each dog completed the four trials in a randomized order. Before the trials began (baseline), in between each trial, and at the end of the fourth trial, the stranger-researcher and the owner had a light-hearted conversation for 2 minutes to reset the emotional experience for the dogs and the owners.

Results and Discussion

Researchers focused on two different kinds of dog behaviors. Person-oriented dog behaviors included looking at a person (either the owner or the stranger-researcher), making contact with a person (touching the person in some way), approaching a person, and vocalizing at a person (barking, whining, etc.). Non-person-oriented dog behaviors included passive behavior (e.g., lying down or sitting), walking, solitary play, and general vocalizing (not directed at a person). The total number of person-oriented behaviors from the dogs for each trial behavior the owners and researcher-strangers acted out is presented in the table.

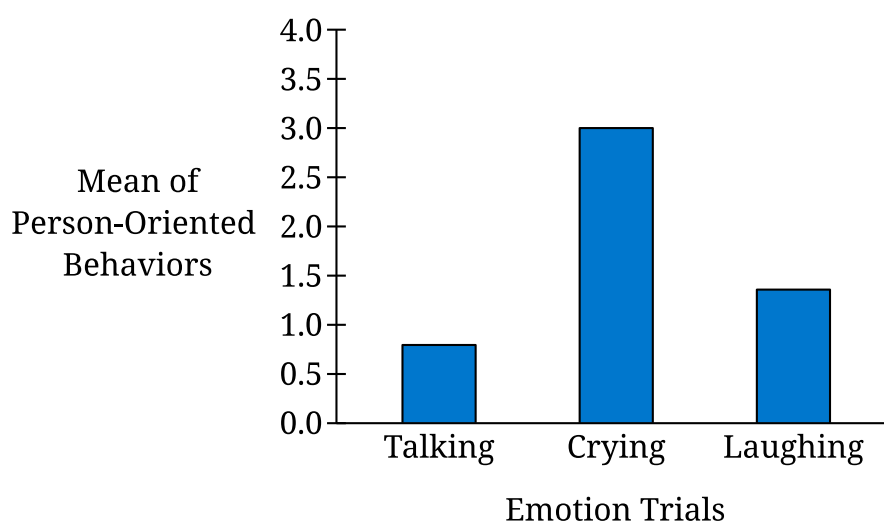
Total Number of Person-Oriented Dog Behaviors for Each Trial

Behavior	Dogs Looking	Dogs Making Contact	Dogs Approaching	Dogs Vocalizing	Total Person-Oriented Behaviors
Baseline	5	3	2	2	12
Owner crying	20	15	6	1	42
Owner laughing	11	2	2	0	15
Stranger crying	24	11	8	3	46

Behavior	Dogs Looking	Dogs Making Contact	Dogs Approaching	Dogs Vocalizing	Total Person-Oriented Behaviors
Stranger laughing	11	7	2	0	20
Totals	71	38	20	6	135

The graph displays the means for the number of person-oriented behaviors for the three types of emotions. The results are statistically significant ($p < 0.0011^1$):

Mean of Person-Oriented Behaviors for Emotion Trials



The results show that the crying trial elicited significantly more person-oriented behaviors than the laughing and talking trials. The mean of person-oriented behaviors when the owner and stranger-researcher were crying significantly differed from the means for laughing and talking, but the means for laughing and talking did not significantly differ from each other. Importantly, dogs primarily engaged with the individual who was crying, regardless of whether they were the owner or the stranger-researcher. In the owner-crying trial, dogs demonstrated person-oriented behaviors 75% of the time, and in the stranger-researcher-crying trial, dogs demonstrated the person-oriented behaviors 73% of the time.

Meyers-Manor, J. E., & Botten, M. L. (2020). A shoulder to cry on: Heart rate variability and empathetic behavioral responses to crying and laughing in dogs. *Canadian Journal of Experimental Psychology / Revue canadienne de psychologie expérimentale*, 74(3), 235–243.

1: p values indicate statistical significance. A p value of less than 0.05 is generally considered significant and increases the likelihood that the difference in means is due to the procedures of the study.

The question has three parts: Part A, Part B, and Part C. Use the three sources provided to answer each part of the question.

For Part B and Part C, you must cite the source that you used to answer the question. You can do this in two different ways:

- Parenthetical Citation:
For example: "...(Source 1)."
- Embedded Citation:
For example: "According to Source 1..."

Write the response to each part of the question in complete sentences. Use appropriate psychological terminology.

2. Using the sources provided, develop and justify an argument about a specific social condition that leads people to be more likely to help another person in an emergency.
- A. Propose a specific and defensible claim based in psychological science that responds to the question.
- B.
- i. Support your claim using at least one piece of specific and relevant evidence from one of the sources.
 - ii. Explain how the evidence from Part B (i) supports your claim using a psychological perspective, theory, concept, or research finding learned in AP Psychology.
- C.
- i. Support your claim using an additional piece of specific and relevant evidence from a different source than the one that was used in Part B (i).
 - ii. Explain how the evidence from Part C (i) supports your claim using a different psychological perspective, theory, concept, or research finding learned in AP Psychology than the one that was used in Part B (ii).

Source 1

Introduction

In this study, researchers investigated environmental factors that may influence whether a person will help in an emergency.

Participants

Students in introductory psychology courses at a university in New York took part in the experiment as part of a class requirement. Fifty-nine of the participants were women and 13 of the participants were men. Researchers did not report race/ethnicity data for participants in the study.¹

Method

When each participant arrived at the laboratory, they were taken to a separate room with a microphone that would allow them to communicate with others. Each participant was alone in their room. Researchers explained to the participants that they would take part in a discussion about problems associated with college life and that the discussion would be held over an intercom system and not face-to-face to preserve the anonymity of the students.

Only one participant's microphone would be on at any given time, and a mechanical switching device would regulate the discussion sequence. During the discussion, one of the other students (who was a confederate of the researchers) pretended to experience a medical emergency in which they at first made a few relatively calm comments and then grew increasingly louder and more incoherent as they spoke. During the medical emergency, participants' microphones were off, so they could hear the confederate but could not speak to other group members to find out what, if anything, they were doing about the emergency.

The independent variable in the study was the number of people the participant thought was included in the discussion group. Researchers told each participant how many other people would be in the discussion, creating three different conditions: a two-person group (participant and victim), a three-person group (participant, victim, and one other), and a six-person group (participant, victim, and four others).

The dependent variable in the study was the speed with which the participants left their room and reported the emergency to the experimenter. If six minutes elapsed without the participant leaving their room, the experiment was terminated. As soon as the participant reported the emergency, or after six minutes had elapsed, the researcher disclosed the true nature of the experiment and debriefed the participant, making sure to address any emotional trauma the experience might have triggered.

Results and Discussion

The number of onlookers that the participant perceived to be present had a major effect on the likelihood that they would report the emergency. Eighty-five percent of the participants who thought they were alone reported the emergency by the time the confederate stopped their scripted performance. Sixty-two percent of the participants who thought one other was present responded by the end of the emergency. Thirty-one percent of those who thought four others were present responded by the end of the emergency. The results are reported in the table.

Effects of Group Size on the Likelihood and Speed of Response

Condition	% Responding by the end of the Emergency	Time in Seconds
2 (Participant and Victim)	85	52
3 (Participant, Victim, and 1 Other)	62	93
6 (Participant, Victim, and 4 Others)	31	166

Darley, J.M., & Latané, B. (1968). Bystander intervention in emergencies: Diffusion of responsibility. *Journal of Personality and Social Psychology*, 8(4), 377-383.

1: Language referencing racial, ethnic, or gender identities may be outdated or fail to reflect the complexities of identity that participants represent.

Source 2

Introduction

In this study, researchers determined how often at least one person intervened in real-life conflicts captured by public surveillance cameras.

Participants

Researchers reviewed 1,225 clips of incidents captured on public surveillance cameras in urban settings in three nations: the Netherlands, the United Kingdom, and South Africa. All public surveillance cameras were located within the entertainment and central business districts of the cities and filmed storefronts, parks, plazas, pedestrian walkways, and public transportation stations. Clips were chosen for the study if they met the following criteria:

- Taken in an urban setting
- Contained a conflict between at least two individuals and did not show another type of incident (e.g., traffic accident, crime being committed)
- Did not include the presence of police or paramedics
- Had a high enough technical quality to allow for effective coding of different behaviors and had no breaks in the interactions recorded.

Researchers examined 219 aggressive public incidents captured by surveillance cameras.

Video access was provided to researchers under the condition that data would be stored securely, shared only for legitimate research purposes (and not with the wider public), and that the identity of the individuals visible in the footage would be protected.

Method

Four trained research assistants rated the 219 video clips. The behaviors observed in the videos were categorized by the type of intervention. “Intervention” was defined as an action by another person toward the perpetrator or victim that would potentially reduce the conflict. This included behaviors such as calming body language, blocking contact between conflict parties, consoling the victim of the aggression, holding an aggressor away from the conflict, or providing help to a victim. For each of the 219 videos, research assistants recorded the total number of interventions.

Results and Discussion

Researchers found that at least one person intervened in 90.9% of the situations, with an average of 3.76 interveners per video (standard deviation = 3.01). Researchers did not find a significant difference in the likelihood that someone would intervene when comparing the different national contexts. Researchers found that a higher number of people present at an incident was positively associated with the likelihood of intervention, and that each additional person present increased the odds that an intervention occurred.

Philpot, R., Liebst, L. S., Levine, M., Bernasco, W., & Lindegaard, M. R. (2019). Would I be helped? Cross-national CCTV footage shows that intervention is the norm in public conflicts. *American Psychologist*, 75(1), 66-75.

Source 3

Introduction

In this meta-analysis, researchers evaluated the conditions under which people are more likely to help others.

Participants

The researchers analyzed a total of 53 articles that examined more than 7,700 participants.

Method

The researchers conducted a meta-analysis of studies on the same topic. The research focused on several variables for situations in which someone needs help:

- Emergency versus non-emergency situations: Emergency situations are viewed as more dangerous than non-emergencies.
- The presence of a perpetrator: The presence of a perpetrator is also viewed as being more dangerous.
- Familiarity among people witnessing a situation: Researchers examined if knowing the others witnessing a situation would affect helping behavior.
- Number of other people present during a situation: Researchers examined whether the addition of one, two, three, four, or five or more other people present would affect the likelihood of helping.

Results and Discussion

The results of this meta-analysis suggest that helping is more likely in the following types of situations:

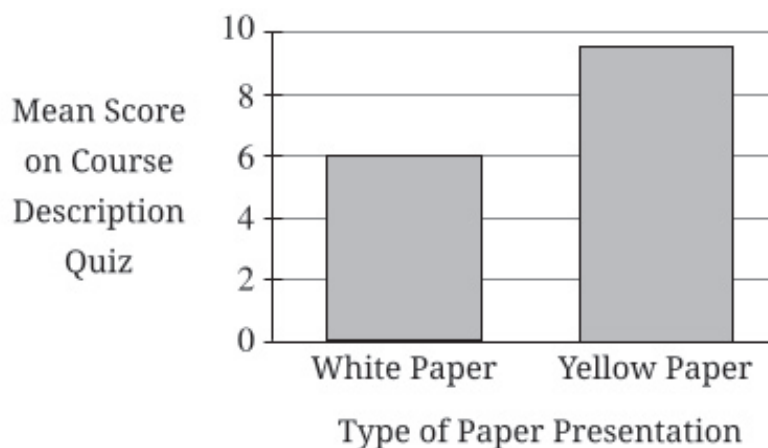
- Emergencies: People who perceived a situation in which a person needed help as an emergency (more dangerous) were more likely to help than when the situation was perceived as a non-emergency.
- When a perpetrator is present: People witnessing a situation in which the perpetrator was present were more likely to help than when no perpetrator was present. This finding is consistent with finding that people are more willing to help if a situation is perceived as dangerous.
- When people witnessing a situation know each other and are not complete strangers: If the people witnessing the event knew one another, whether as friends or acquaintances, they were more likely to help.
- When fewer people witnessing a situation are present: At least one additional person present in a situation leads to a higher likelihood of helping. Groups with three, four, or five or more members were least likely to help in a situation.

Fischer, P., Krueger, J.I., Greitemeyer, T., Vogrincic, C., Kastenmüller, A., Frey, D., Heen, M., Wicher, M., and Kainbacher, M. (2011). The bystander-effect: A meta-analytic review on bystander intervention in dangerous and non-dangerous emergencies. *Psychological Bulletin*, 137(4), 517-537.

STOP

END OF EXAM

2. Professor Gonzalez hypothesizes that students will remember more information from his detailed course description if it is printed on yellow paper than if it is printed on standard white paper. To test this hypothesis, he put the names of all his students into a bowl, then drew out names to assign them to two different groups. He gave one group of the students in his class a course description printed on white paper, and gave the other group of students a course description printed on yellow paper. Students were instructed to thoroughly read the description outside of class in preparation for their next class. In the next class, he gave all students a ten-question quiz asking them about the information found on the course description. Professor Gonzalez then compared the number of correct answers for each group of students. The statistically significant results are depicted in the graph.



Part A

- State the operational definition of the dependent variable.
- Identify the experimental group.
- In addition to the manipulation of an independent variable, identify the procedure Professor Gonzalez used to make this study a true experiment.
- Explain how the data as presented in the graph do or do not support Professor Gonzalez's hypothesis.

Part B

Explain how each of the following might relate to a student's performance on any quiz.

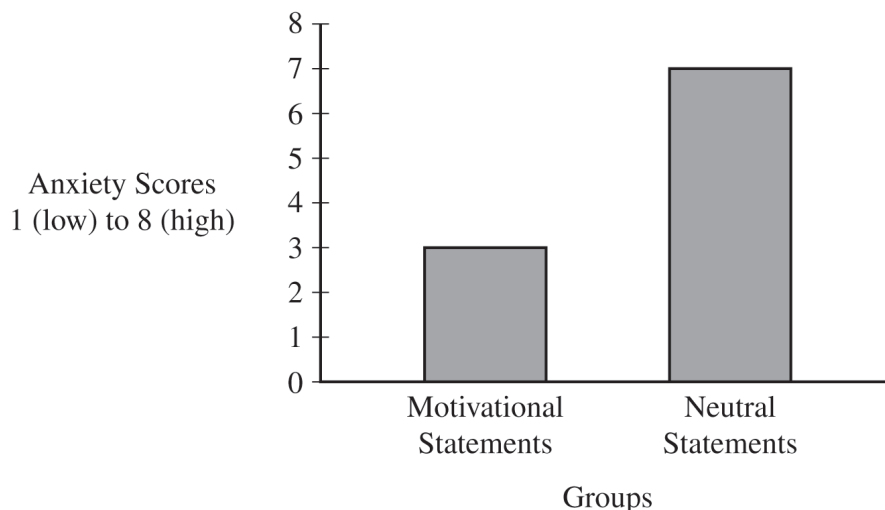
- Context-dependent memory
- Yerkes-Dodson law
- Low level of the Big Five trait of conscientiousness

Begin your response to this question at the top of a new page in the separate Free Response booklet and fill in the appropriate circle at the top of each page to indicate the question number.

STOP

END OF EXAM

2. Dr. Dawson is a psychologist who believes that students who read motivational statements before a test will experience lower levels of anxiety as compared with students who read neutral statements. To examine this belief, he conducted a study. In the study, he randomly assigned half of the participants to read motivational statements and the other half to read neutral statements. Immediately after reading the statements, all of the students completed a survey about their current level of anxiety (1 = low; 8 = high) and then took the test. Dr. Dawson found statistically significant results that are depicted in the graph.



Part A

- State a valid operational definition of the dependent variable in this study.
- Identify the control group in this study.
- Explain why the study would be considered an experiment.
- Explain how the results of the study do or do not support Dr. Dawson's hypothesis.

Part B

The test Dr. Dawson gave was a vocabulary test. Explain how the following terms might relate to the students who performed poorly on the test in this study.

- External locus of control
- Stage one of Selye's general adaptation syndrome
- Crystallized intelligence

Begin your response to this question at the top of a new page in the separate Free Response booklet and fill in the appropriate circle at the top of each page to indicate the question number.

STOP

END OF EXAM

2. Michael is the regional manager for a car company and needs to give a presentation to the president of the company about how different management styles might relate to the total number of sales of the company’s new electric car. He hires an industrial/organizational psychologist to study three stores, each in a different city. Each store’s manager has their own distinct management style:
- In Store A, the manager has a supportive style (open and warm).
 - In Store B, the manager has a strict style (rigid and severe).
 - In Store C, the manager, who is Michael’s good friend, has a distant style (permissive and disengaged).

The number of electric cars sold at each store over a five-month period is shown in the table.

	ELECTRIC CARS SOLD BY STORE		
Month	Store A (supportive style)	Store B (strict style)	Store C (distant style)
January	9	7	3
February	7	8	2
March	9	5	5
April	5	3	4
May	5	2	1

- Explain why this study is not a true experiment.
- Identify the implied dependent variable for the study if the study had been a true experiment.
- Calculate the mean of Store B’s sales.
- Explain why the location of the store is a confounding variable in this study.
- Explain how the halo effect could influence Michael’s interpretation of the findings.
- Explain why the hiring of an industrial/organizational psychologist was appropriate for this study.
- Explain how Michael could use positive reinforcement to help him finish his presentation by the deadline.

Begin your response to this question at the top of a new page in the separate Free Response booklet and fill in the appropriate circle at the top of each page to indicate the question number.

STOP

END OF EXAM

3.2 Physical Development Across the Lifespan

Name: _____ Class: _____ Date: _____

Total: 11 marks

KEY WORDS teratogen 致畸物 • late adulthood 老年期 • adolescence 青春期 • motor 运动 • prenatal 产前

Objective

Build the skills to answer exam questions on **physical development** 生理发展.

You must be able to:

- describe **prenatal** 产前 development and the effect of a **teratogen** 致畸物
- state the sequence of **motor** 运动 development in infancy
- describe the physical changes of **adolescence** 青春期
- state the main physical changes of **late adulthood** 老年期

1 Worked examples

Study these first. Each one shows the method for a task used later.

■ Prenatal development and teratogens

Development proceeds from zygote to embryo to foetus. A **teratogen** is any agent — alcohol, certain infections, some drugs — that can cross the placenta and disrupt development. Effects depend on **timing**: the same exposure does more damage during the formation of the affected structure.

■ Motor development

Maturation gives a broadly fixed **sequence** — sitting, crawling, standing, walking — but the **timing** varies between individuals and cultures. Sequence is biological; pace is not purely so.

■ Adolescence

Puberty brings a growth spurt and reproductive maturity. Brain development continues, with the prefrontal regions supporting planning and impulse control maturing later than the reward-sensitive regions.

■ Late adulthood

Sensory acuity declines, reaction time slows, and muscle mass falls. Well-practised knowledge and vocabulary are typically preserved, while speed-dependent tasks decline first.

2 Practice

2.1 Define a teratogen and give one example. [2]

2.2 Explain why the timing of an exposure matters as much as the dose. [2]

2.3 Two infants walk at 10 and at 15 months.

(a) State what is fixed across infants. [1]

(b) State what varies. [1]

3 Exam-style questions

3.1 In adolescence, the brain regions supporting planning and impulse control mature [1]

- **A** before reward-sensitive regions
- **B** after reward-sensitive regions
- **C** at exactly the same time
- **D** only after age 40

3.2 In late adulthood, the abilities usually best preserved are [1]

- **A** reaction speed
- **B** vocabulary and well-practised knowledge
- **C** hearing acuity
- **D** muscle mass

3.3 A public health campaign targets alcohol use in early pregnancy.

(a) State the reason for targeting that period. [1]

(b) Explain one difficulty in measuring the campaign's effect. [2]

Solutions

2.1 an agent that can cross the placenta and disrupt prenatal development; e.g. alcohol.

2.2 a structure is vulnerable while it is forming, so the same exposure produces different damage depending on when it occurs.

2.3 (a) the sequence of motor milestones. (b) the age at which each is reached.

3.1 B. prefrontal maturation lags behind reward-sensitive development.

3.2 B. crystallised knowledge is typically preserved while speed declines.

3.3 (a) major structures form early, so exposure then does the most damage. (b) self-reported drinking is unreliable and other influences on outcomes cannot be controlled, so any change is hard to attribute to the campaign.

3.3 Gender and Sexual Orientation

Name: _____ Class: _____ Date: _____

Total: 11 marks

KEY WORDS gender 性别 • sex 生理性别 • gender roles 性别角色 • sexual orientation 性取向 • self-report 自我报告

Objective

Build the skills to answer exam questions on **gender** 性别 and **sexual orientation** 性取向 as psychological topics.

You must be able to:

- distinguish **sex** 生理性别 from **gender** 社会性别 as the terms are used in psychology
- explain how **gender roles** 性别角色 are transmitted socially
- state what research indicates about the origins of sexual orientation
- explain why **self-report** 自我报告 data on these topics is difficult to gather

1 Worked examples

Study these first. Each one shows the method for a task used later.

■ Two terms

In psychology, **sex** refers to biological characteristics, and **gender** to the social and psychological categories a culture builds around them. Keeping them distinct is required to state most findings clearly.

■ How roles are transmitted

Gender roles are the behaviours a culture expects of each category. They are learned through observation, reinforcement and the models available in family, peers and media, and they vary across cultures and over time.

■ Origins of sexual orientation

Research indicates that orientation is not chosen and is not readily changed. Evidence points to biological influences, including genetic and prenatal factors, though no single determinant accounts for it.

■ Why self-report is hard here

Where a topic is stigmatised, respondents may under-report. Sampling is also difficult, because the people willing to participate may not represent the population. Both problems bias estimates in the same direction.

2 Practice

2.1 State how psychology distinguishes sex from gender. [2]

2.2 Explain how gender roles are transmitted and give one source. [2]

2.3 A survey estimates the proportion of a population with a given orientation.

(a) State one reason the estimate may be too low. [1]

(b) State one sampling problem. [1]

3 Exam-style questions

3.1 Evidence that gender roles vary across cultures indicates that they are [1]

- **A** entirely biological
- **B** substantially social in origin
- **C** unrelated to expectation
- **D** fixed at birth

3.2 Research on sexual orientation most strongly indicates that it is [1]

- **A** freely chosen
- **B** readily changed by instruction
- **C** influenced by biological factors and not chosen
- **D** determined by a single gene

3.3 A study recruits participants through one advocacy organisation.

(a) State the sampling problem. [1]

(b) Explain how it affects the conclusions.

[2]

Solutions

2.1 sex refers to biological characteristics; gender to the social and psychological categories built around them.

2.2 through observation, reinforcement and available models; e.g. family, peers or media.

2.3 (a) stigma leads to under-reporting. (b) those willing to participate may not represent the population.

3.1 B. variation across cultures points to socially transmitted expectations.

3.2 C. evidence indicates biological influences and no element of choice.

3.3 (a) a self-selected, non-representative sample. (b) the participants may differ systematically from the wider population, so results cannot be generalised beyond that group.

3.4 Cognitive Development Across the Lifespan

Name: _____ Class: _____ Date: _____

Total: 11 marks

KEY WORDS assimilation 同化 • egocentrism 自我中心 • piaget 皮亚杰 • accommodation 顺应 • conservation 守恒

Objective

Build the skills to answer exam questions on **cognitive development** 认知发展.

You must be able to:

- describe **assimilation** 同化 and **accommodation** 顺应
- name the stages of the Piagetian sequence and one achievement of each
- explain **scaffolding** 支架 and the **zone of proximal development** 最近发展区
- state what later research revised about stage accounts

1 Worked examples

Study these first. Each one shows the method for a task used later.

■ Two processes

A **schema** is a mental framework. **Assimilation** fits new information into an existing schema; **accommodation** changes the schema to fit information that will not fit.

■ The stage sequence

Sensorimotor: knowing through action; achieving **object permanence**. **Preoperational**: symbolic thought, but **egocentrism** and failure of conservation. **Concrete operational**: logical operations on concrete material, including **conservation**. **Formal operational**: abstract and hypothetical reasoning.

■ Scaffolding

A more capable partner supports a learner through what they cannot yet do alone — the **zone of proximal development** — and withdraws support as competence grows. Development here is social before it is individual.

■ What was revised

Later work found children often competent earlier than the stage account predicted, and development less uniformly staged: performance depends heavily on how the task is presented.

2 Practice

2.1 State the difference between assimilation and accommodation. [2]

2.2 Explain what the zone of proximal development describes. [2]

2.3 A child says the taller glass holds more water although both were poured from identical glasses.

(a) Name the ability not yet acquired. [1]

(b) State the stage this indicates. [1]

3 Exam-style questions

3.1 Knowing that a hidden object still exists is [1]

- **A** conservation
- **B** object permanence
- **C** egocentrism
- **D** accommodation

3.2 Later research revised stage accounts mainly by showing that children [1]

- **A** develop more slowly than described
- **B** often show competence earlier when tasks are simplified
- **C** never reach formal operations
- **D** do not use schemas

3.3 A teacher gives hints that gradually decrease as a pupil masters a task.

(a) Name the technique. [1]

(b) Explain why withdrawing support is part of the method.

[2]

Solutions

2.1 assimilation fits new information into an existing schema; accommodation changes the schema to fit the information.

2.2 the range of tasks a learner cannot do alone but can do with support; development occurs by working within it with a more capable partner.

2.3 (a) conservation. (b) preoperational.

3.1 B. object permanence is the sensorimotor achievement.

3.2 B. simplified tasks reveal earlier competence than the original stage tests.

3.3 (a) scaffolding. (b) the aim is independent performance, so support must be removed as competence grows or the learner never works unaided.

PSYCHOLOGY**SECTION II****Time—50 minutes****2 Questions**

Directions: You have 50 minutes to answer BOTH of the following questions. It is not enough to answer a question by merely listing facts. You should present a cogent argument based on your critical analysis of the questions posed, using appropriate psychological terminology. You may plan your answers in this orange booklet, but no credit will be given for anything written in this booklet. **You will only earn credit for what you write in the separate Free Response booklet.**

1. Gavin's parents took him to his favorite science museum, and he explored all of the exhibits. One of the interactive exhibits featured glass marbles. He grabbed a large marble and tried to bounce it on the ground. At one point during the visit, he became separated from his parents, and it took a few minutes for them to find him. Later that night, he drew a colorful picture of the exhibits at the museum. The next day, Gavin brought his picture with him to preschool. While his grandmother drove, Gavin talked to her about the picture.

Part A

- Explain how Jean Piaget's concept of assimilation could relate to Gavin's experience with the glass marble.
- Explain how egocentrism could relate to how Gavin interacted with his grandmother in the car.
- Explain how avoidant attachment could relate to Gavin when he was separated from his parents.

Part B

Explain how each of the following terms could relate to Gavin in this scenario.

- Serial position effect
- Motor cortex
- Cognitive map
- Cones in the retina

Begin your response to this question at the top of a new page in the separate Free Response booklet and fill in the appropriate circle at the top of each page to indicate the question number.

3.5 Communication and Language Development

Name: _____ Class: _____ Date: _____

Total: 12 marks

KEY WORDS language 语言 • babbling 咿呀学语 • nativist 天赋论 • overgeneralisation 过度概括化
• language development 语言发展

Objective

Build the skills to answer exam questions on **language development** 语言发展.

You must be able to:

- name the stages from **babbling** 咿呀学语 to sentences
- state what **overgeneralisation** 过度概括化 shows about learning
- contrast a **learning** account with a **nativist** 天赋论 account
- explain the evidence for a **sensitive period** for language

1 Worked examples

Study these first. Each one shows the method for a task used later.

■ The sequence

Babbling includes sounds from many languages and narrows to the ambient one. Then single words, then two-word combinations with consistent order, then longer sentences with grammar.

■ Overgeneralisation

A child who has said “went” begins saying “goed”. This is not forgetting: the child has extracted a **rule** and is applying it too broadly. Errors of this kind are evidence of rule learning rather than imitation.

■ Two accounts

A **learning** account emphasises imitation and reinforcement. A **nativist** account argues that children acquire grammar too fast, from input too incomplete, for imitation alone, and that the capacity is innately structured.

■ A sensitive period

Children exposed to a language early acquire it fully; those first exposed much later typically do not reach the same grammatical mastery. This supports a sensitive period rather than an unlimited window.

2 Practice

2.1 Name three stages of early language development in order. [3]

2.2 Explain what overgeneralisation shows about how children learn grammar. [2]

2.3 A child who said “ran” now says “runned”.

- (a) State whether this is a step backwards. [1]
- (b) Justify your answer. [1]

3 Exam-style questions

3.1 Babbling in early infancy includes [1]

- **A** only sounds of the surrounding language
- **B** sounds from many languages, narrowing later
- **C** no consonants
- **D** complete words

3.2 The nativist argument rests mainly on the claim that [1]

- **A** children imitate adults exactly
- **B** grammar is acquired too fast from too little input for imitation alone
- **C** language is learned only after age seven

- D reinforcement explains all errors
-

3.3 A person first exposed to a language at 30 achieves fluent vocabulary but persistent grammatical errors.

- (a) State what this pattern supports. [1]
- (b) Explain why vocabulary and grammar may differ in this respect. [2]
-
-
-

Solutions

2.1 babbling; single words; two-word combinations and then longer sentences.

2.2 the child is applying an extracted rule too broadly, which shows rule learning rather than simple imitation.

2.3 (a) no. (b) it shows the child has learned the regular past-tense rule and is applying it to an irregular verb.

3.1 B. babbling narrows toward the ambient language over the first year.

3.2 B. the poverty of the input relative to the speed of acquisition is the nativist argument.

3.3 (a) a sensitive period for grammar. (b) vocabulary can be added throughout life as new items, while grammatical structure appears to depend on early exposure.

3.6 Social-Emotional Development Across the Lifespan

Name: _____ Class: _____ Date: _____

Total: 11 marks

KEY WORDS attachment 依恋 • avoidant 回避型 • contact comfort 接触安慰 • strange situation 陌生情境
• authoritative 权威型

Objective

Build the skills to answer exam questions on **attachment** 依恋 and social development.

You must be able to:

- describe the attachment styles identified in the **strange situation** 陌生情境
- state what research on contact comfort demonstrated
- describe the main **parenting styles** 教养方式 and their associations
- state what a **psychosocial stage** account proposes

1 Worked examples

Study these first. Each one shows the method for a task used later.

■ Attachment styles

In the strange situation, infants are observed through separations and reunions. **Secure** infants explore, are distressed by separation and are comforted on reunion. **Insecure** patterns include avoiding the caregiver or being anxious and hard to soothe.

■ Contact comfort

Classic primate research showed infants preferring a soft surrogate to a wire one that supplied food, indicating that attachment depends on comfort and contact rather than feeding alone.

■ Parenting styles

Authoritative: high demands with high responsiveness; associated with the best outcomes. **Authoritarian:** high demands, low responsiveness. **Permissive:** low demands, high responsiveness. These are correlational associations, not proven causes.

■ Psychosocial stages

Development is described as a sequence of social tasks, each posing a conflict — trust, identity, generativity — whose resolution shapes later functioning. The value of the account is the framework, not a fixed timetable.

2 Practice

2.1 Describe the behaviour of a securely attached infant in the strange situation. [2]

2.2 State what contact comfort research demonstrated. [2]

2.3 A parent sets clear rules and explains them, and responds warmly to the child.

(a) Name the parenting style. [1]

(b) State one caution about inferring its effects. [1]

3 Exam-style questions

3.1 An infant who ignores the caregiver on reunion shows [1]

- **A** secure attachment
 - **B** an insecure-avoidant pattern
 - **C** contact comfort
 - **D** generativity
-

3.2 Parenting-style findings are correlational, which means they cannot establish [1]

- **A** that an association exists
 - **B** that the style causes the outcome
 - **C** the direction of the association
 - **D** the sample size
-

3.3 A study finds that children of authoritative parents have better school outcomes.

(a) State one alternative explanation for the association. [1]

(b) Explain what evidence would be needed for a causal claim. [2]

Solutions

2.1 explores while the caregiver is present; is distressed by separation and comforted on reunion.

2.2 infants preferred a soft surrogate to a wire one that provided food, showing attachment depends on comfort and contact rather than feeding alone.

2.3 (a) authoritative. (b) the association is correlational, so the style may not be the cause.

3.1 B. avoiding the caregiver on reunion defines the insecure-avoidant pattern.

3.2 B. correlation cannot establish causation.

3.3 (a) an underlying factor such as family resources may produce both. (b) an experimental or longitudinal design with controls for confounding variables that shows the outcome changing when parenting changes.

PSYCHOLOGY**SECTION II****Time—50 minutes****2 Questions**

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Part A

- Explain how Jean Piaget's concept of assimilation could relate to Gavin's experience with the glass marble.
- Explain how egocentrism could relate to how Gavin interacted with his grandmother in the car.
- Explain how avoidant attachment could relate to Gavin when he was separated from his parents.

Part B

Explain how each of the following terms could relate to Gavin in this scenario.

- Serial position effect
- Motor cortex
- Cognitive map
- Cones in the retina

Begin your response to this question at the top of a new page in the separate Free Response booklet and fill in the appropriate circle at the top of each page to indicate the question number.

3.7 Classical Conditioning

Name: _____ Class: _____ Date: _____

Total: 11 marks

KEY WORDS discrimination 分化 • extinction 消退 • spontaneous recovery 自发恢复 • generalisation 泛化
• acquisition 习得

Objective

Build the skills to answer exam questions on **classical conditioning** 经典条件作用.

You must be able to:

- label **US** 无条件刺激, **UR**, **CS** 条件刺激 and **CR** in an example
- describe **acquisition** 习得, **extinction** 消退 and **spontaneous recovery** 自发恢复
- distinguish **generalisation** 泛化 from **discrimination** 分化
- state what classical conditioning explains about emotional responses

1 Worked examples

Study these first. Each one shows the method for a task used later.

■ The four terms

An **unconditioned stimulus** produces a response naturally (food → salivation). Pair a **neutral stimulus** with it repeatedly and that stimulus becomes a **conditioned stimulus**, producing a **conditioned response** on its own.

■ Three phases

Acquisition: the pairing that establishes the response. **Extinction**: presenting the CS without the US until the CR fades. **Spontaneous recovery**: the CR reappearing after a rest, showing extinction suppresses rather than erases.

■ Generalisation and discrimination

Generalisation: similar stimuli also produce the response. **Discrimination**: learning to respond only to the specific CS and not to similar stimuli.

■ Emotional learning

A neutral situation paired with a frightening event can come to produce fear by itself. This accounts for many learned fears and for why exposure — repeated CS without US — is used to reduce them.

2 Practice

2.1 In a study where a tone precedes a puff of air to the eye, identify the CS and the CR. [2]

2.2 Explain what spontaneous recovery shows about extinction. [2]

2.3 A child bitten by a large dog becomes afraid of all dogs.

(a) Name the process. [1]

(b) State the process by which the fear could be narrowed to that one dog. [1]

3 Exam-style questions

3.1 Presenting the CS repeatedly without the US produces [1]

- **A** acquisition
- **B** extinction
- **C** generalisation
- **D** spontaneous recovery

3.2 In the tone-and-air-puff example, the air puff is the [1]

- **A** conditioned stimulus
- **B** unconditioned stimulus
- **C** conditioned response
- **D** neutral stimulus

3.3 A therapist treats a phobia by repeated safe exposure to the feared object.

(a) Name the learning process being used. [1]

(b) Explain why the fear may briefly return later.

[2]

Solutions

2.1 CS: the tone; CR: blinking to the tone alone.

2.2 the response returns after a rest without further pairing, so extinction suppresses the response rather than erasing the learning.

2.3 (a) generalisation. (b) discrimination.

3.1 B. unreinforced presentation of the CS produces extinction.

3.2 B. the air puff produces blinking naturally.

3.3 (a) extinction. (b) extinction suppresses rather than erases the association, so spontaneous recovery can return the response after time.

Using the source provided, respond to all parts of the question.

1. Your response to the question should be provided in six parts: A, B, C, D, E, and F. Write the response to each part of the question in complete sentences. Use appropriate psychological terminology in your response.
- A. Identify the research method used in the study.
 - B. State the operational definition of person-oriented dog behaviors.
 - C. Describe what the mean of the person-oriented behaviors indicates for the laughing trials as compared to the talking trials.
 - D. Identify at least one ethical guideline applied by the researchers.
 - E. Explain the extent to which the research findings may or may not be generalizable using specific and relevant evidence from the study.
 - F. Explain how at least one of the research findings supports or refutes the idea that dogs' expressions of the person-oriented behaviors demonstrate stimulus discrimination in operant conditioning.

Introduction

Dogs often comfort their owners by making visual and/or physical contact when the owners cry or by providing help to their owners when they are sick. The study examined whether a dog's reactions to a person's emotions differ based on the dog's prior experience with the person (owner versus stranger).

Participants

Researchers recruited community members with nonaggressive dogs via email. Of those recruited, 16 dog and owner pairs participated in this study. The owners ranged in age from 25 to 60 years (mean age = 47.06 years; standard deviation = 11.89 years), and the dogs ranged in age from 2 years to 13 years (mean age = 6.87 years; standard deviation = 3.35 years). The length of time the owners had their dogs before the study began ranged from 2 months to 13 years (mean = 5.70 years; standard deviation = 3.69 years). The study included the following dog breeds, with the number of each in parentheses: Lab mix (3), black Lab (1), terrier mix (2), corgi or corgi mix (3), French bulldog (1), Jack Russell terrier (1), miniature pinscher (1), miniature schnauzer (1), Shih Tzu (2), and wirehaired pointing griffon (1).

Method

Each dog owner received and signed a consent form. Researchers tested each dog at their owner's house, and the dogs received dog biscuits as compensation for participation in the study.

All dog and owner pairs participated in all four trials of the study. This is called a "within-subjects" design, which means that researchers observe each participant in every condition of the study so that a participant can be directly compared to themselves across conditions. The "within-subjects" design serves the same purpose as random assignment.

A researcher who was unfamiliar with the dogs before the study played the role of the stranger. Upon entering each participant’s home, this “stranger-researcher” ignored the dogs by not interacting with them in any way. The stranger-researcher asked the owner to follow the same set of instructions during each trial:

“When you are asked to cry, please pretend to cry to the best of your ability for 20 seconds. The researcher will tell you when to begin and when to stop. When you are asked to laugh, please pretend to laugh to the best of your ability for 20 seconds. When you are acting, please use approximately the same volume. Also, please do not refer to your dog by name, look directly at them, or initiate or reciprocate physical contact during the study.”

The owners and the stranger-researcher stayed seated and moved their bodies naturally while they acted out the different emotional states, but they stayed seated. Each dog participated in four separate 20-second-long trials in which (1) the owner cried, (2) the stranger-researcher cried, (3) the owner laughed, and (4) the stranger-researcher laughed.

The order of these trials was counterbalanced across dogs, meaning that each dog completed the four trials in a randomized order. Before the trials began (baseline), in between each trial, and at the end of the fourth trial, the stranger-researcher and the owner had a light-hearted conversation for 2 minutes to reset the emotional experience for the dogs and the owners.

Results and Discussion

Researchers focused on two different kinds of dog behaviors. Person-oriented dog behaviors included looking at a person (either the owner or the stranger-researcher), making contact with a person (touching the person in some way), approaching a person, and vocalizing at a person (barking, whining, etc.). Non-person-oriented dog behaviors included passive behavior (e.g., lying down or sitting), walking, solitary play, and general vocalizing (not directed at a person). The total number of person-oriented behaviors from the dogs for each trial behavior the owners and researcher-strangers acted out is presented in the table.

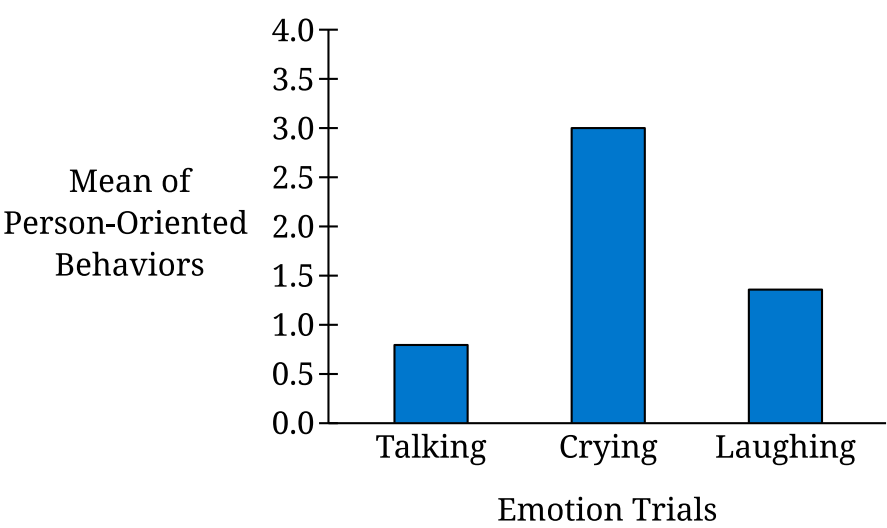
Total Number of Person-Oriented Dog Behaviors for Each Trial

Behavior	Dogs Looking	Dogs Making Contact	Dogs Approaching	Dogs Vocalizing	Total Person-Oriented Behaviors
Baseline	5	3	2	2	12
Owner crying	20	15	6	1	42
Owner laughing	11	2	2	0	15
Stranger crying	24	11	8	3	46

Behavior	Dogs Looking	Dogs Making Contact	Dogs Approaching	Dogs Vocalizing	Total Person-Oriented Behaviors
Stranger laughing	11	7	2	0	20
Totals	71	38	20	6	135

The graph displays the means for the number of person-oriented behaviors for the three types of emotions. The results are statistically significant ($p < 0.0011^1$):

Mean of Person-Oriented Behaviors for Emotion Trials



The results show that the crying trial elicited significantly more person-oriented behaviors than the laughing and talking trials. The mean of person-oriented behaviors when the owner and stranger-researcher were crying significantly differed from the means for laughing and talking, but the means for laughing and talking did not significantly differ from each other. Importantly, dogs primarily engaged with the individual who was crying, regardless of whether they were the owner or the stranger-researcher. In the owner-crying trial, dogs demonstrated person-oriented behaviors 75% of the time, and in the stranger-researcher-crying trial, dogs demonstrated the person-oriented behaviors 73% of the time.

Meyers-Manor, J. E., & Botten, M. L. (2020). A shoulder to cry on: Heart rate variability and empathetic behavioral responses to crying and laughing in dogs. *Canadian Journal of Experimental Psychology / Revue canadienne de psychologie expérimentale*, 74(3), 235–243.

1: p values indicate statistical significance. A p value of less than 0.05 is generally considered significant and increases the likelihood that the difference in means is due to the procedures of the study.

The question has three parts: Part A, Part B, and Part C. Use the three sources provided to answer each part of the question.

For Part B and Part C, you must cite the source that you used to answer the question. You can do this in two different ways:

- Parenthetical Citation:
For example: "...(Source 1)."
- Embedded Citation:
For example: "According to Source 1..."

Write the response to each part of the question in complete sentences. Use appropriate psychological terminology.

2. Using the sources provided, develop and justify an argument about a specific social condition that leads people to be more likely to help another person in an emergency.
- A. Propose a specific and defensible claim based in psychological science that responds to the question.
- B.
- i. Support your claim using at least one piece of specific and relevant evidence from one of the sources.
 - ii. Explain how the evidence from Part B (i) supports your claim using a psychological perspective, theory, concept, or research finding learned in AP Psychology.
- C.
- i. Support your claim using an additional piece of specific and relevant evidence from a different source than the one that was used in Part B (i).
 - ii. Explain how the evidence from Part C (i) supports your claim using a different psychological perspective, theory, concept, or research finding learned in AP Psychology than the one that was used in Part B (ii).

Source 1

Introduction

In this study, researchers investigated environmental factors that may influence whether a person will help in an emergency.

Participants

Students in introductory psychology courses at a university in New York took part in the experiment as part of a class requirement. Fifty-nine of the participants were women and 13 of the participants were men. Researchers did not report race/ethnicity data for participants in the study.¹

Method

When each participant arrived at the laboratory, they were taken to a separate room with a microphone that would allow them to communicate with others. Each participant was alone in their room. Researchers explained to the participants that they would take part in a discussion about problems associated with college life and that the discussion would be held over an intercom system and not face-to-face to preserve the anonymity of the students.

Only one participant's microphone would be on at any given time, and a mechanical switching device would regulate the discussion sequence. During the discussion, one of the other students (who was a confederate of the researchers) pretended to experience a medical emergency in which they at first made a few relatively calm comments and then grew increasingly louder and more incoherent as they spoke. During the medical emergency, participants' microphones were off, so they could hear the confederate but could not speak to other group members to find out what, if anything, they were doing about the emergency.

The independent variable in the study was the number of people the participant thought was included in the discussion group. Researchers told each participant how many other people would be in the discussion, creating three different conditions: a two-person group (participant and victim), a three-person group (participant, victim, and one other), and a six-person group (participant, victim, and four others).

The dependent variable in the study was the speed with which the participants left their room and reported the emergency to the experimenter. If six minutes elapsed without the participant leaving their room, the experiment was terminated. As soon as the participant reported the emergency, or after six minutes had elapsed, the researcher disclosed the true nature of the experiment and debriefed the participant, making sure to address any emotional trauma the experience might have triggered.

Results and Discussion

The number of onlookers that the participant perceived to be present had a major effect on the likelihood that they would report the emergency. Eighty-five percent of the participants who thought they were alone reported the emergency by the time the confederate stopped their scripted performance. Sixty-two percent of the participants who thought one other was present responded by the end of the emergency. Thirty-one percent of those who thought four others were present responded by the end of the emergency. The results are reported in the table.

Effects of Group Size on the Likelihood and Speed of Response

Condition	% Responding by the end of the Emergency	Time in Seconds
2 (Participant and Victim)	85	52
3 (Participant, Victim, and 1 Other)	62	93
6 (Participant, Victim, and 4 Others)	31	166

Darley, J.M., & Latané, B. (1968). Bystander intervention in emergencies: Diffusion of responsibility. *Journal of Personality and Social Psychology*, 8(4), 377-383.

1: Language referencing racial, ethnic, or gender identities may be outdated or fail to reflect the complexities of identity that participants represent.

Source 2

Introduction

In this study, researchers determined how often at least one person intervened in real-life conflicts captured by public surveillance cameras.

Participants

Researchers reviewed 1,225 clips of incidents captured on public surveillance cameras in urban settings in three nations: the Netherlands, the United Kingdom, and South Africa. All public surveillance cameras were located within the entertainment and central business districts of the cities and filmed storefronts, parks, plazas, pedestrian walkways, and public transportation stations. Clips were chosen for the study if they met the following criteria:

- Taken in an urban setting
- Contained a conflict between at least two individuals and did not show another type of incident (e.g., traffic accident, crime being committed)
- Did not include the presence of police or paramedics
- Had a high enough technical quality to allow for effective coding of different behaviors and had no breaks in the interactions recorded.

Researchers examined 219 aggressive public incidents captured by surveillance cameras.

Video access was provided to researchers under the condition that data would be stored securely, shared only for legitimate research purposes (and not with the wider public), and that the identity of the individuals visible in the footage would be protected.

Method

Four trained research assistants rated the 219 video clips. The behaviors observed in the videos were categorized by the type of intervention. “Intervention” was defined as an action by another person toward the perpetrator or victim that would potentially reduce the conflict. This included behaviors such as calming body language, blocking contact between conflict parties, consoling the victim of the aggression, holding an aggressor away from the conflict, or providing help to a victim. For each of the 219 videos, research assistants recorded the total number of interventions.

Results and Discussion

Researchers found that at least one person intervened in 90.9% of the situations, with an average of 3.76 interveners per video (standard deviation = 3.01). Researchers did not find a significant difference in the likelihood that someone would intervene when comparing the different national contexts. Researchers found that a higher number of people present at an incident was positively associated with the likelihood of intervention, and that each additional person present increased the odds that an intervention occurred.

Philpot, R., Liebst, L. S., Levine, M., Bernasco, W., & Lindegaard, M. R. (2019). Would I be helped? Cross-national CCTV footage shows that intervention is the norm in public conflicts. *American Psychologist*, 75(1), 66-75.

Source 3

Introduction

In this meta-analysis, researchers evaluated the conditions under which people are more likely to help others.

Participants

The researchers analyzed a total of 53 articles that examined more than 7,700 participants.

Method

The researchers conducted a meta-analysis of studies on the same topic. The research focused on several variables for situations in which someone needs help:

- Emergency versus non-emergency situations: Emergency situations are viewed as more dangerous than non-emergencies.
- The presence of a perpetrator: The presence of a perpetrator is also viewed as being more dangerous.
- Familiarity among people witnessing a situation: Researchers examined if knowing the others witnessing a situation would affect helping behavior.
- Number of other people present during a situation: Researchers examined whether the addition of one, two, three, four, or five or more other people present would affect the likelihood of helping.

Results and Discussion

The results of this meta-analysis suggest that helping is more likely in the following types of situations:

- Emergencies: People who perceived a situation in which a person needed help as an emergency (more dangerous) were more likely to help than when the situation was perceived as a non-emergency.
- When a perpetrator is present: People witnessing a situation in which the perpetrator was present were more likely to help than when no perpetrator was present. This finding is consistent with finding that people are more willing to help if a situation is perceived as dangerous.
- When people witnessing a situation know each other and are not complete strangers: If the people witnessing the event knew one another, whether as friends or acquaintances, they were more likely to help.
- When fewer people witnessing a situation are present: At least one additional person present in a situation leads to a higher likelihood of helping. Groups with three, four, or five or more members were least likely to help in a situation.

Fischer, P., Krueger, J.I., Greitemeyer, T., Vogrincic, C., Kastenmüller, A., Frey, D., Heen, M., Wicher, M., and Kainbacher, M. (2011). The bystander-effect: A meta-analytic review on bystander intervention in dangerous and non-dangerous emergencies. *Psychological Bulletin*, 137(4), 517-537.

STOP

END OF EXAM

3.8 Operant Conditioning

Name: _____ Class: _____ Date: _____

Total: 11 marks

KEY WORDS reinforcement 强化 • positive 正 • punishment 惩罚 • negative 负 • negative reinforcement 负强化

Objective

Build the skills to answer exam questions on **operant conditioning** 操作性条件作用.

You must be able to:

- distinguish **positive** and **negative reinforcement** 负强化 from **punishment** 惩罚
- match a **schedule of reinforcement** 强化程式 to its response pattern
- describe **shaping** 塑造 and successive approximation
- state the drawbacks of punishment as a method

1 Worked examples

Study these first. Each one shows the method for a task used later.

■ The four consequences

Positive reinforcement adds something desirable; **negative reinforcement** removes something aversive. Both **increase** behaviour. **Positive punishment** adds something aversive; **negative punishment** removes something desirable. Both **decrease** behaviour. Negative reinforcement is not punishment.

■ Schedules

Fixed-ratio: after a set number of responses — high, bursty rates. **Variable-ratio**: after an unpredictable number — highest and steadiest rates, most resistant to extinction. **Fixed-interval**: first response after a set time — a scallop, slow then fast. **Variable-interval**: unpredictable time — steady, moderate.

■ Shaping

Reinforcing successive approximations to a target behaviour, so that a complex action can be built where it never occurred spontaneously.

■ Why punishment is limited

It tells the learner what not to do without teaching what to do; it can produce fear and avoidance of the punisher; and its effect often depends on the punisher being present.

2 Practice

2.1 State the difference between negative reinforcement and punishment. [2]

2.2 State which schedule produces the most persistent responding and why. [2]

2.3 A trainer rewards a dog for each step closer to a target behaviour.

(a) Name the technique. [1]

(b) State why it is needed for complex behaviours. [1]

3 Exam-style questions

3.1 Taking painkillers to remove a headache is maintained by [1]

- **A** positive reinforcement
- **B** negative reinforcement
- **C** positive punishment
- **D** negative punishment

3.2 A pattern of slow responding that speeds up as a deadline approaches indicates a [1]

- **A** fixed-ratio schedule
- **B** variable-ratio schedule
- **C** fixed-interval schedule
- **D** variable-interval schedule

3.3 A teacher relies on detentions to reduce disruption.

(a) State one limitation of this approach. [1]

(b) Suggest one alternative and justify it.

[2]

Solutions

2.1 negative reinforcement removes something aversive and **increases** behaviour; punishment **decreases** behaviour.

2.2 variable-ratio; reinforcement is unpredictable, so responding persists during unreinforced periods and resists extinction.

2.3 (a) shaping by successive approximation. (b) the complete behaviour never occurs spontaneously, so there is nothing to reinforce until it is built up.

3.1 B. removing an aversive state increases the behaviour that removed it.

3.2 C. the scallop pattern is characteristic of fixed-interval reinforcement.

3.3 (a) it suppresses behaviour without teaching what to do instead. (b) reinforce the desired behaviour, e.g. praise for on-task work, because reinforcement builds the behaviour you want rather than only removing one you do not.

2. Michael is the regional manager for a car company and needs to give a presentation to the president of the company about how different management styles might relate to the total number of sales of the company’s new electric car. He hires an industrial/organizational psychologist to study three stores, each in a different city. Each store’s manager has their own distinct management style:
- In Store A, the manager has a supportive style (open and warm).
 - In Store B, the manager has a strict style (rigid and severe).
 - In Store C, the manager, who is Michael’s good friend, has a distant style (permissive and disengaged).

The number of electric cars sold at each store over a five-month period is shown in the table.

	ELECTRIC CARS SOLD BY STORE		
Month	Store A (supportive style)	Store B (strict style)	Store C (distant style)
January	9	7	3
February	7	8	2
March	9	5	5
April	5	3	4
May	5	2	1

- Explain why this study is not a true experiment.
- Identify the implied dependent variable for the study if the study had been a true experiment.
- Calculate the mean of Store B’s sales.
- Explain why the location of the store is a confounding variable in this study.
- Explain how the halo effect could influence Michael’s interpretation of the findings.
- Explain why the hiring of an industrial/organizational psychologist was appropriate for this study.
- Explain how Michael could use positive reinforcement to help him finish his presentation by the deadline.

Begin your response to this question at the top of a new page in the separate Free Response booklet and fill in the appropriate circle at the top of each page to indicate the question number.

STOP

END OF EXAM

3.9 Social, Cognitive, and Neurological Factors in Learning

Name: _____ Class: _____ Date: _____

Total: 11 marks

KEY WORDS cognitive map 认知地图 • insight 顿悟 • latent learning 潜伏学习 • biological preparedness 生物准备性
• observation 观察

Objective

Build the skills to answer exam questions on **observational learning** 观察学习 and cognitive influences.

You must be able to:

- describe **modelling** 示范 and the conditions that make it effective
- explain **latent learning** 潜伏学习 and what a **cognitive map** 认知地图 shows
- describe **insight** 顿悟 learning
- explain **biological preparedness** 生物准备性 and taste aversion

1 Worked examples

Study these first. Each one shows the method for a task used later.

■ Modelling

Behaviour can be acquired by watching another person, without any reinforcement to the observer. Imitation is more likely when the model is similar, admired, or seen to be rewarded.

■ Latent learning

Animals allowed to explore a maze without reward later run it efficiently once reward is introduced. Learning had occurred without performance, which shows that learning and performance are separate.

■ Insight

A solution can arrive suddenly, after a pause rather than through gradual trial and error. This indicates internal restructuring of the problem rather than incremental reinforcement.

■ Biological preparedness

Some associations are learned far more easily than others. A single episode of illness can produce a lasting aversion to a taste, even hours later, while the same delay would prevent most conditioning. Organisms are prepared to learn what mattered to survival.

2 Practice

2.1 State two conditions that make imitation of a model more likely. [2]

2.2 Explain what latent learning shows about learning and performance. [2]

2.3 A person becomes ill hours after eating an unfamiliar dish and avoids it afterwards.

(a) Name the phenomenon. [1]

(b) State why the long delay is theoretically interesting. [1]

3 Exam-style questions

3.1 A child copies an adult's aggressive behaviour after watching it rewarded. This is [1]

- A classical conditioning
 - B observational learning
 - C latent learning
 - D insight
-

3.2 A sudden solution after a pause, without gradual improvement, indicates [1]

- A shaping
 - B insight
 - C extinction
-

- D generalisation

3.3 Conditioning a rat to fear a tone takes many pairings; a taste aversion needs one.

(a) Name the principle explaining the difference. [1]

(b) Explain why it makes evolutionary sense. [2]

Solutions

2.1 any two of: the model is similar to the observer; the model is admired or high status; the model is seen to be rewarded.

2.2 learning occurred during unrewarded exploration but was not shown until reward was introduced, so learning can exist without performance.

2.3 (a) taste aversion. (b) most conditioning fails with such a long gap between stimulus and consequence.

3.1 B. the behaviour was acquired by observation, with vicarious reinforcement.

3.2 B. sudden restructuring rather than incremental improvement indicates insight.

3.3 (a) biological preparedness. (b) illness usually follows food after a delay, so an organism able to link taste to later sickness avoids poisoning and survives.

PSYCHOLOGY**SECTION II****Time—50 minutes****2 Questions**

Directions: You have 50 minutes to answer BOTH of the following questions. It is not enough to answer a question by merely listing facts. You should present a cogent argument based on your critical analysis of the questions posed, using appropriate psychological terminology. You may plan your answers in this orange booklet, but no credit will be given for anything written in this booklet. **You will only earn credit for what you write in the separate Free Response booklet.**

1. Part A

Jordan recently moved to a new school for her senior year of high school, and she has been adjusting to her new environment.

Explain how each of the following relates to Jordan's adjustment to her new school.

- Spotlight effect
- Cognitive map
- Jordan's low level of the Big Five trait of extraversion

Part B

Jordan tries out for and makes the debate team. Jordan has made friends with other members of the team, and she really enjoys sitting with them at lunch every day. The coach is impressed with Jordan's debate skills, so he makes her captain of the team. When Jordan starts to help the coach plan for the next big debate, her friends stop sitting with her at lunch. She then stops helping the coach plan for the next debate but ends up winning it.

Explain how each of the following concepts relates to the scenario.

- Negative punishment
- Formal operational stage of cognitive development
- Actor-observer bias concerning Jordan's debate performance
- Jordan's high level of self-efficacy

Begin your response to this question at the top of a new page in the separate Free Response booklet and fill in the appropriate circle at the top of each page to indicate the question number.

2. Mobile Gamer Central (MGC) is preparing to launch a new game app. The advertisements for this new game are brightly colored, have lively music, and feature celebrities playing the game. To generate interest in the game, MGC pays to have these advertisements pop up multiple times while people are using other apps on their phone. The marketing director is pleased with the advertising campaign and thinks the game is really fun to play.

Part A

Explain how each of the following concepts relates to the scenario.

- Peripheral route to persuasion
- False consensus effect
- Mere-exposure effect

Part B

After a few weeks with moderate success, MGC’s marketing director decides to test the most effective ways to increase sales of the game. Marketing researchers recruit 100 people to play the new game. They randomly assign half of the people to observe someone demonstrating how the game is played and assign the other half of the people to play the video game themselves. Participants rate how likely they are to buy the game on a scale of 1 (not likely) through 10 (very likely). Results are presented in the table.

Participants’ Rating	Observed Game Demonstration (<i>n</i> = 50)	Personally Played Game (<i>n</i> = 50)	<i>p</i> value
Mean	6 . 31	2 . 04	< 0 . 001
Standard Deviation	1 . 25	0 . 80	

- Identify the operational definition of the dependent variable in the study.
- Explain what the difference between the standard deviations in the study indicates.
- Explain why random assignment is necessary for determining cause and effect in the study.
- Explain what the *p* value allows MGC to conclude about the study.

Begin your response to this question at the top of a new page in the separate Free Response booklet and fill in the appropriate circle at the top of each page to indicate the question number.

STOP

END OF EXAM

