Psychology prep [30 marks]

**Section A style questions**

1. Describe the sample used in Simons and Chabris’ study. [2]
2. Outline one limitation of this sample. [2]
3. Outline how data were recorded in Simons and Chabris’ study. [2]
4. Suggest one weakness of the way data were recorded in this study. [2]
5. Identify one finding from Simons and Chabris’ study. [2]
6. Outline one conclusion that could be drawn from this study. [2]
7. Identify two controls used in Simons and Chabris’ study. [2]
8. Explain why one of these controls was used. [2]
9. Outline two ethical issues raised in Simons and Chabris’ study. [4]
10. Outline one difference between Moray’s study and Simons and Chabris’ study. (3)

**Section B style questions**

1. Explain how any one core study can be considered to be located within the area of cognitive psychology. [4]
2. To what extent does Simons and Chabris’ study change our understanding of attention? [3]

### Simons and Chabris (1999) Visual inattention

**Background**

**Conditions**

1. The two 5-second unexpected events, which appeared after 44-48 seconds into the videos
2. The ‘Umbrella Woman’ condition, a tall woman holding an open umbrella walked across the picture from left to right
3. In the ‘Gorilla’ condition, a shorter woman wearing a full gorilla costume walked through the action in the same way
4. The two styles of video
5. The ‘Transparent’ condition, each team and the unexpected event were all filmed separately, made partially transparent, then superimposed on one another using digital techniques
6. In the ‘opaque’ condition, all 7 actors were filmed at the same time, which required careful rehearsal to avoid collisions
7. The team colour that the Ps were asked to follow (black or white)
8. The difficulty of the task
9. Ps were instructed to keep either a silent mental count of the no. of passes made by the attended team (the Easy condition),
10. or separate silent mental counts of the no. of bounce passes and arial passes made by the attended team (the Hard condition)

* *Change blindness*: the phenomena of being unaware of significant changes in our environment from one view to the next
* *Inattentional blindness*: the phenomena of failing to perceive an unexpected object even at the point of fixation

**Aim**

* To investigate the influence of several factors on inattentional blindness:
* the effect of superimpositions compared to live events within the video recording
* measuring the impact of task difficulty
* whether the unusualness of the unexpected event had an impact on detection rates

**Method**

* Laboratory experiment
* Independent measures design, Ps taking part in only 1/16 different conditions

**Sample**

* 228 Ps
* Volunteer sample
* Most were undergraduate students who were offered a reward of a candy bar or a single fee for taking part in this % other studies

**Design & Procedure**

* Researchers created 4 video tapes using the same camera, each lasting 75 seconds
* Each tape showed two teams of 3 players, one team wearing white shirts and the other wearing black shirts
* The members of each team moved randomly around a small space, passing an orange basketball to one another in a set order, either as an aerial pass or a pass with a bounce
* 21 experimenters tested the Ps individually
* Standardised script to deliver instructions on the task and carefully followed a written protocol outlining how and when to present the video and collect data for each trial
* Videos were presented on TV monitors ranging in size between 13 - 36 inches
* After performing the task, observers were immediately asked to write down their count passes, then verbally answered a surprise set of questions:
  + While you were doing the counting, did you notice anything unusual?
  + Did you notice anything other than the six players?
  + Did you see anyone else (besides the six players) appear on the video?
  + Did you see a gorilla [woman carrying an umbrella] walk across the screen?
* Details of any ‘yes’ responses were noted
* Observers were then asked whether they had previously heard of or participated in an experiment such as this
* The Ps were debriefed and were given the opportunity to re-watch the video

**Results:**

* Some Ps’ data had to be discarded for a no. of reasons (e.g. Ps admitted to having heard of inattentional blindness, or that they had lost count of the no. of passes).
* The remaining 192 Ps were distributed equally across the 16 conditions of the 2x2x2x2 design (12 per condition)
* 54% noticed the unexpected event and 46% failed to notice the unexpected event
* This key finding supports existing research findings, with Ps demonstrating a substantial level of inattentional blindness for a dynamic event
* Ps were more likely to notice the unexpected event in the opaque condition (67%) compared to the transparent condition (42%)
* However, this still lives a significant proportion of Ps in the opaque condition who failed to detect the event
* As expected, more Ps noticed the unexpected event in the Easy (64%) than in the Hard (45%) condition
* More Ps noticed the umbrella women (65%) than the gorilla (44%)
* When Ps were attending to the black team, they were, however, more likely to notice the gorilla than when attending to the white team: 58% vs 27% respectively
* By contrast, there was little difference in how many Ps noticed the umbrella woman (62% when monitoring the black team; 69% when monitoring the white team)
* Instead of the gorilla being noticed for standing out against the white team members, it appears the individuals are more likely to notice an unexpected event that shares basic visual features with the object they are observing (e.g. similar colours)

Percentage of Ps Who Noticed The Unexpected Event In Each Condition

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  | Easy Task | | Hard Task | |
|  |  | White team | Black team | White team | Black team |
| Transparent | Umbrella woman | 58 | 92 | 33 | 42 |
| Gorilla | 8 | 67 | 8 | 25 |
| Opaque | Umbrella woman | 100 | 58 | 83 | 58 |
| Gorilla | 42 | 83 | 50 | 58 |

**CONCLUSIONS:**

Simons and Chabris concluded that roughly half of observers will fail to detect an ongoing, unusual and unexpected event while engaged in a different task of visual attention. Their findings suggest that:

1. Inattentional blindness occurs more frequently in cases of superimposition as opposed to live action, but is still a feature of both
2. The degree of inattentional blindness depends on the difficulty of the primary task, and is more likely when the primary task is hard
3. Observers are more likely to notice unexpected events if these events are visually similar to the events they are paying attention to
4. Objects can pass through the spatial area of attentional focus and still not be ‘seen’ if they are not specifically being attended to

**Aim:** Everyday life is bursting with visual stimuli competing for your attention. This research aimed to unpick the factors that lead particular stimuli to be given attention and processed whilst other stimuli is simply ignored. The process by which we select visual attention is of interest here and may explain why certain events seem to go unnoticed before our very eyes. This study suggests that the mind can only process a certain amount of visual information and once the limit of this is met other information is ignored. By building on previous research this study aimed to investigate inattentional blindness in a dynamic scene.

**Method:** A laboratory experiment was carried out and set up to present an isolated scenario with one key change, the gorilla walking across the scene, to act as a potential distraction.

There were a number of independent variables to vary the distraction presented in terms of the object (umbrella woman or gorilla) and the clarity of this (transparent/ opaque) as well as the difficulty of the task (easy/ hard) to assess the factors that contribute to effective processing of information.

**Findings**: Overall 54% of participants in the experiment noticed the unexpected event which suggests that the visual processing system does register a lot of information in the visual field despite the mind focusing on a set task such as counting the number of passes.

Whilst there are a number of key findings it is interesting to note that more participants in the easy condition noticed the unexpected event than in the hard condition which suggests that the ‘load’ on the processing does impact how much information we can pay attention to.

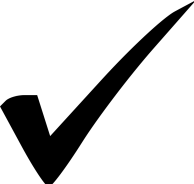
**Conclusions:** This study showed that inattentional blindness occurs across a range of different circumstances and this is more prevalent as the task becomes more difficult. This study suggests that we have no conscious perception of an event if we do not pay attention to it initially.

**Evaluation**

**Data:**Simons and Chabris collected quantitative data by calculating the percentage of people who noticed the unexpected event. This data allowed for comparisons across conditions and summaries to be made easily.

**Ethical Considerations:** There were no ethical concerns with this study. Informed consent was gained before the study and participants were debriefed at the end, where the video was replayed to them to prove the unexpected event had indeed occurred.

**Sampling Bias**: A large sample was used which means conclusions are more valid. They were also student volunteers, which is a comparatively quick and easy method to gain participants who are also motivated and interested to take part in the study. However, students are not a representative group of people, while volunteers have certain characteristics. This means the sample is biased and lacks population validity.

How perceptive are you?

Answer the following with a yes or no – be certain if you answer yes.

|  |  |
| --- | --- |
| 1 I could describe what clothes my family was wearing yesterday. |  |
| 2 I know what car the people who live two doors from me have. |  |
| 3 I remember exactly what the first thing someone said to me today was. |  |
| 4 I remember how my journey home from school went this time last week. |  |
| 5 I know what the last thing I said to someone last night was. |  |
| 6 I can describe what clothes I was wearing three days ago. |  |
| 7 I can state exactly how much toothpaste I have left in my tube. |  |
| 8 I can tell you the last item of food I bought. |  |
| 9 I can describe the last advertisement I saw on the TV. |  |
| 10 I can state what the time was on my phone the last time I checked it. |  |
| 11 When I fill in forms, I sometimes get muddled up and put last name when it asked for my first name. |  |

Why can’t you remember all of the details that have been asked?

Define the term **inattentional blindness**.

Explain how inattentional blindness could explain why people might not be able to answer all of the above ten questions with a yes.

Conditions in Simons and Chabris

S&C used a 2 x 2 x 2 x2 factoral design. Fill in the boxes below to show the 4 IVs.

Which team to watch: 2 variations

|  |  |
| --- | --- |
|  |  |

The unexpected event: 2 variations

|  |  |
| --- | --- |
|  |  |

The difficulty of the task: 2 variations

|  |  |
| --- | --- |
|  |  |

Video styles: 2 variations

|  |  |
| --- | --- |
|  |  |

Factoral Designs

**Casey** also used a 2x2 factoral design for her go/no-go tasks: hot / cool, go / no-go.

Which of Casey’s 2 experiments used the 2 x 2 factoral design for her go/no-go tasks?

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Explain why cool tasks were not done on 1 of her 2 experiments.

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**Grant’s** IV was whether the reading and test conditions were matching or not. Show the 4 conditions of this IV.

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| --- | --- | --- |
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|  |  |  |
|  |  |  |

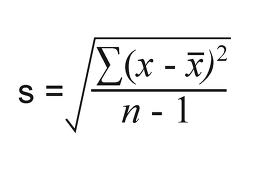
Maths Moment

Percentage of Ps Who Noticed The Unexpected Event In Each Condition

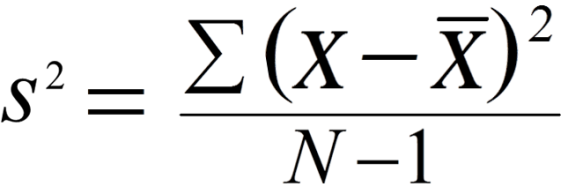
|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  | Easy Task | | Hard Task | |
|  |  | White team | Black team | White team | Black team |
| Transparent | Umbrella woman | 58 | 92 | 33 | 42 |
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| Opaque | Umbrella woman | 100 | 58 | 83 | 58 |
| Gorilla | 42 | 83 | 50 | 58 |

For all of the results together:

Calculate the **measures of central tendency**

* Mean
* Median
* Mode

Calculate the **measures of dispersion**

* Range
* Standard deviation
* Variance

Identify which **level of data** the results are in:

Nominal / ordinal / interval

Identify and explain which inferential statistical test would be used:

Test = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Because it is:

* + - * A test of difference / relationship
      * Independent / repeated measures
      * Nominal / interval level data

Simons and Chabris collected both qualitative and quantitative data. Explain what data was collected in each type:

Qualitative = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Quantitative = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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The data collected was

primary / secondary

|  |  |
| --- | --- |
| **Stage of procedure**  1 | **Evaluation issue this relates to and how** |
| 21 Experimenters tested the participants with a written protocol devised before data collection began. | RELIABILITY |
| All participants were tested individually. | VALIDITY |
| Participants were told beforehand they would be watching two teams of three players passing basketballs and to pay attention to either team in white or team in black. | ETHICS |
| They were told to keep silent counts of total number of passes. | VALIDITY |
| Immediately asked after to write down their counts. | RELIABILITY |
| Then asked questions:   1. While you were doing the counting – did you notice anything unusual in the video? 2. Did you notice anything other than the six players? 3. Did you see a Gorilla / woman carrying an umbrella? | VALIDITY  RELIABILITY |
| If reported ‘YES’ to any previous questions, they were asked to provide details of what they saw. | VALIDITY |
| Participants were asked if they had previously participated in a similar experiment or heard of it before = if YES, data was discarded. | VALIDITY |
| Participants were debriefed, including playing the video tape on request. | ETHICS |

Attentional barrier

Deception

Demand characteristics

Ecological validity

Face validity

Informed consent

Inter-rater reliability

Mundane realism

Pilot study

Practice effects (extraneous variables)

Qualitative data

Quantitative data

Single blind procedure

Social desirability bias

Standardised instructions

Standardised procedures

Tag Lines for the Areas and Perspectives

|  |  |  |
| --- | --- | --- |
| Area / Perspective | Cause of Behaviour | # |
| Biological | Behaviour is caused by brain / chemicals / genes | Physiological  Nomothetic |
| Individual difference | Behaviour is caused by different things for each person | Idiographic  Personality  Unique |
| Developmental | Behaviour is caused by level of development reached | Lifespan  Nurture  Pre-determined stages |
| Social | Behaviour is caused by people / place | Environment  Situational factors |
| Cognitive | Behaviour is caused by thinking processes | Thinking patterns  Input-process-output  Schema |
| Psychodynamic | Behaviour is caused by unconscious processes | Personality  Tripartite personality |
| Behaviourist | Behaviour is learnt | Classical  Operant  Social learning |

Classical conditioning

Environment

Idiographic

Input-process-output

Lifespan

Nomothetic

Nurture

Operant conditioning

Personality

Physiological processes

Predetermined stages

Psychosexual stages

Schema

Situational factors

Social learning theory

Thinking patterns

Tripartite personality

Unique

Hashtags for the Areas and Perspectives

|  |  |  |
| --- | --- | --- |
| Area / Perspective | Cause of Behaviour | # |
|  | Behaviour is caused by brain / chemicals / genes |  |
|  | Behaviour is caused by different things for each person |  |
|  | Behaviour is caused by level of development reached |  |
|  | Behaviour is caused by people / place |  |
|  | Behaviour is caused by thinking processes |  |
|  | Behaviour is caused by unconscious processes |  |
|  | Behaviour is learnt |  |

Classical conditioning

Environment

Idiographic

Input-process-output

Lifespan

Nomothetic

Nurture

Operant conditioning

Personality

Physiological processes

Predetermined stages

Psychosexual stages

Schema

Situational factors

Social learning theory

Thinking patterns

Tripartite personality

Unique

Taglines for the Pairs of Studies

|  |  |  |
| --- | --- | --- |
|  | Attention |  |
|  | Brain plasticity |  |
|  | External influences on children’s behaviour |  |
|  | Measuring differences |  |
|  | Memory |  |
|  | Moral Development |  |
|  | Regions of the brain |  |
|  | Responses to people in authority |  |
|  | Responses to people in need |  |
|  | Understanding disorders |  |

Taglines for the Pairs of Studies

|  |  |  |
| --- | --- | --- |
| Moray | Attention | Simons and Chabris |
| Blakemore and Cooper | Brain plasticity | Maguire |
| Bandura | External influences on children’s behaviour | Chaney |
| Gould | Measuring differences | Hancock |
| Loftus | Memory | Grant |
| Kohlberg | Moral Development | Lee |
| Sperry | Regions of the brain | Casey |
| Milgram | Responses to people in authority | Bocchiaro |
| Piliavin | Responses to people in need | Levine |
| Freud | Understanding disorders | Baron Cohen |

|  |  |
| --- | --- |
| Moray | Simons and Chabris |
| Blakemore and Cooper | Maguire |
| Bandura | Chaney |
| Gould | Hancock |
| Loftus | Grant |
| Kohlberg | Lee |
| Sperry | Casey |
| Milgram | Bocchiaro |
| Piliavin | Levine |
| Freud | Baron Cohen |

Comparison: Similarities and Differences Questions

You can be asked to compare

* Research methodologies
* Pairs of study
* Areas and perspectives
* Perspectives
* Debates
* Explanations / treatments of mental health

Mark scheme for similarity / difference questions

4 marks

1. Similarity / difference between perspectives is identified
2. Discussed / elaborated
3. **and** supported by evidence from one side
4. and supported by evidence from the other side.

**Examples of differences questions for paper 1**

* Explain one difference between a field and a natural experiment [4]
* Explain one difference between a participant and non-participant observations. [4]
* Explain one difference between an independent measures design and a repeated measures design [4]
* Explain one difference between researcher bias and researcher effects [4]
* Explain one difference between an open and a closed question. [4]
* Explain one difference between volunteer and opportunity sampling [4]
* Explain one difference between time and event sampling in observations. [4]

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**Examples of differences questions for paper 2**

* Explain one difference between the Developmental area and the Behaviourist perspective [4]
* Explain one difference between the Biological area and the nurture side of the nature nurture debate [4]

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**Examples of differences questions for paper 3 Mental Health**

* Explain one difference between the genetic and biochemical explanations of mental illness [4]
* Explain one difference between one Medical Model treatment of mental illness and one alternative [4]

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Mark scheme for similarity / difference questions

* Point of comparison is identified
* Discussed / elaborated
* and supported by evidence from one side
* then supported by evidence from the other side.

**Examples of differences questions for paper 3 Crime**

* Using the research by Raine, explain the differences between physiological and non-physiological explanations of criminal behaviour [10]
* Using the research by Haney, explain one difference between punishment and reform as responses to criminal behaviour [10]

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Research Methods Focus

**Explain** how you would carry out an **observation** to investigate whether people pay attention to an unexpected event. **Justify** your decisions as part of your explanation. You must refer to:

* Participant or non-participant observation
* Covert or overt observation
* Time or event sampling
* Collection of data

You should use your own experience of carrying out an experiment to inform your response. [15]

Repeat the following structure for each of the 4 choices given to you:

For each of the bullet points / features, you need to say:

• Feature (from each of the bullet points)

• Explained (how you would be doing this – enough for replication)

• in Context (using the unique words of the story)

• Justified (why it is right to do here)

• referring to Own research (to show a similarity).

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What type of attention was being investigated

Research method (C.O.S.E.)

Sampling method (R.O.S.S.)

Size of the sample

Experimental design (R.I.M)

What type of data were collected (quant / qual)

Which measure of central tendency (mean, median, mode)

What type of graph would be used

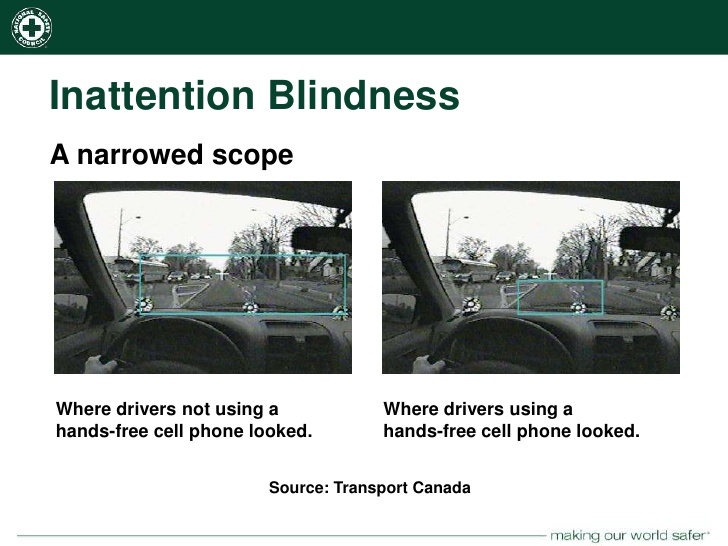
Which inferential statistical test would be used

How ethical the studies were (C.D.C.D.W.P.)

What controls were used

Reliability

Validity



**Paper 2 Section C style questions**

1. Explain why this article can be viewed as being relevant to cognitive psychology. (4)
2. Briefly outline one core study and explain how it could relate to this article. (6)
3. Identify one psychological issue/problem or content raised by the above article. Support your answer with evidence from the article. (4)
4. Use your psychological knowledge to suggest a way to manage the issue of people paying less attention while driving with a hands free mobile. (6)
5. Evaluate your suggestion for how to manage the issue in this article. (10)

**Why do radiologists miss dancing gorillas?**

By Lorna Stewart 16 February 2013

**There is something odd about this scan of a patient's lung. Have you spotted it yet? How about the dancing gorilla on the right?**

Radiologists are skilled at searching scans for tiny anomalies with potentially life-threatening consequences. But more than three-quarters of specialist tumour spotters were caught out by the greatest anomaly of their career.

Dr Trafton Drew - "When I first saw radiologists searching through these images, they go through so fast and they detect these things that look completely invisible." He believed that radiologists, "the best searchers in the world", were good at detecting cancers but wondered what else they might be missing. When we focus our attention on a narrow task we tend to miss other things: this is called inattentional blindness. There's a big difference between looking at something and perceiving it.

**Distractions**

"Part of the reason that radiologists are so good at what they do is that they are very good at narrowly focusing their attention on these lung nodules. And the cost of that is that they're subject to missing other things, even really obvious large things like a gorilla."

Prof Daniel Simons, author of the original invisible gorilla study, explained that this is the way our attention system works. "We're aware of only a small subset of our visual world at any time. We focus attention on those aspects of the world that we want to see. By focusing attention, we can filter out distractions. But in limiting our attention to just those aspects of our world we are trying to see, we tend not to notice unexpected objects or events."

**Baggage screening**

It sounds dangerous that these experts might fail to spot something as obvious as a gorilla in your lung scan. But they were asked to search for lung cancer nodules only. Dr Drew thinks that if they had been asked to say more generally if there was anything wrong with the scans they would have been much more likely to find the gorilla. "It shouldn't terrify you because they're looking for cancer and not gorillas," he said. "Because attention is a finite quantity you have to make a decision going into the search about what's most important to you."

Prioritising what we pay attention to has benefits. It allows us to ignore distractions and focus on the task at hand. But it's important to be aware of our limitations, says Prof Simons.

"I don't think we should be worried about these limits of attention, but we should be aware of them. We assume we will notice. And it's that mistaken belief that is dangerous. If you assume you will notice the gorilla, you won't take steps to make sure that you will."

"By knowing about these limits, we potentially could take steps to avoid them. For example, another radiologist could inspect the same images but without looking for a specific problem. If they don't have a really narrow goal, they might be more likely to spot unexpected problems."

**Paper 2 Section C style questions**

1. Explain why this article can be viewed as being relevant to cognitive psychology. (4)
2. Identify one psychological issue/problem or content raised by the above article. Support your answer with evidence from the article. (4)