Question: Discuss the use of brain imaging technology in investigating the relationship between biological factors and behaviour. [22]

When planning an ERQ, it is important to unravel the question. To do this, you need to start by understanding the command term.

Discuss = offer a balanced review that includes a range of arguments (strengths/limitations)

In terms of this ERQ, it is helpful to substitute the word ‘use’ with ‘useful’. For example, Discuss how useful brain imaging technologies are when investigating the relationship between biological factors and behaviour.

After that, you need to consider your structure carefully. It is essential to plan your essay to appreciate the relative weight and importance of each section. You should work on the assumption that you can write 1,000 words and plan accordingly.

Plan

- Introduction [50]

- BIT 1 PET [425]
  - Description of what PET is and its use/problems with scanning technique
    - Study (Raine, 1997)
    - Discussion Centred on Strengths/Limitations
      - Strength – Real World Application
      - Weakness – Correlational
  - Study (Maguire et al., 2000)
    - Discussion Centred on Strengths/Limitations
      - Weaknesses – Ecological Validity/Distortion
- BIT 2 [425]
  - Description of what MRI is and its use/problems with scanning technique
    - Study (Maguire et al., 2000)
    - Discussion Centred on Strengths/Limitations
      - Weaknesses – Ecological Validity/Distortion
- Conclusion [150]
  - Balanced Review

It is clear from the structure above that by discussing two brain imaging technologies this should allow you to write 425 words on each, which is ideal as you need to explain the method/findings of the study, relate your study to the question and write a discussion centred on strengths/limitations. If you attempted three brain imaging technologies, you would only have ~300 words per technology, and you would struggle to create an in-depth discussion.
INTRODUCTION: Brain imaging technology is one method relevant to research at the BLOA as it enables researchers to examine the structure, function and activity of the brain, to examine the relationship between biological factors and behaviour. Such methods include PET (positron emission tomography) and MRI (magnetic resonance imaging).

BIT1: PET scans are a type of nuclear medicine imaging which use a small amount of radioactive material to diagnose and determine the severity of brain diseases, including cancers and neurological disorders. PET scans involve the injection of a radioactive tracer; this tracer then appears as a bright colour on the scan, indicating which areas of the brain are most active in metabolising glucose during a task. The brighter the colour, the more active that part of the brain during that particular task. PET scans can not be used on everyone, and some people are allergic to the radioactive tracer. Also, PET scans are not used on children or pregnant women and are therefore unable to measure the relationship between biological factors and behaviour in these groups which is a slight limitation of this technique.

STUDY 1: Raine (1997) used PET scans to demonstrate a biological correlation between impulsive behaviour and lack of pre-frontal cortex (PFC) activity. Raine (1997) used a sample of 41 murderers (39 men and 2 women) who had pleaded NGRI (not guilty by reason of insanity) and 41 age and sex-matched controls. Raine found that the NGRI participants had lower glucose metabolism in their PFC in comparison to the controls. It might be inferred from these findings that those murderers did not use their PFC to interpret and respond to non-emotional stimuli (in this case the continuous cognitive task), reacting instead in an emotional manner.

DISCUSSION: Use of a PET scan allowed Raine to investigate the link between a biological factor (lack of pre-frontal cortex activity) and behaviour (impulsive behaviour). Such findings would not have been possible without the use of a PET scan which could be used in clinical and forensic settings to inform rehabilitation programmes and to go some way towards preventing crimes from taking place. However, such research does not provide a full explanation of all possible influences on the behaviour in question. The results of such studies are correlational, and therefore researchers are only able to conclude that the two factors (pre-frontal cortex activity and impulsive behaviour) are linked. Consequently, there is no real evidence to show conclusively that the NGRI murderers’ crimes are caused by a lack of PFC activity; there could be a huge range of other influences that produced the behaviour e.g. alcohol abuse, upbringing, etc. Therefore, PET scans are limited as it can only tell one part of a complex story when highlighting a link between biological factors and behaviour.
BITZ: An older method of brain imaging is MRI. In MRI, a powerful magnetic field is placed around the brain. It temporarily holds the nuclei of the brain’s atoms in one direction. When released, the atoms "wobble" back to their original positions and emit a weak radio frequency signal that can be picked up by a sensitive receiving device. It shows structural changes in brain matter and is used to investigate tumours or any possible brain damage. However, MRI scans are limited to only showing structural changes and need careful interpretation to prevent false positives. Therefore, researchers need to be cautious when interpreting the data from MRI scan to examine the relationship between brain and behaviour, to ensure that their findings are valid. Furthermore, due to the nature of the scanner itself, MRI scans are not good for people with claustrophobia which can prevent some people from taking part in MRI studies. This limits the effectiveness of this technique for measuring the relationship between biological factors and behaviour in people with claustrophobia.

STUDY 2: Maguire et al. (2000) used MRI scans to compare the volume of grey matter in the brains of London taxi drivers compared to a pre-existing sample of matched controls. Maguire hypothesised that taxi drivers would show significantly higher grey matter in their hippocampus, a structure associated with navigational skills. By using an MRI scan, Maguire found increased grey matter was found in the brains of taxi drivers compared with controls in both the right and left hippocampi. The increased volume was found in the posterior (rear) hippocampi. The results of the MRI allowed Maguire to investigate the relationship between biological factors (the size of the hippocampi) and the behaviour (spatial navigation).

DISCUSSION: While the results from MRI indicate a relationship between biological factors and behaviour, MRI scans and experiments like this are often criticised for lacking ecological validity. However, until a procedure is developed whereby brain scanning can take place during a real activity in the real world, then it must essentially remain lab-bound. Furthermore, an MRI scan can take several minutes to form, and the slightest movement can affect the validity of the findings. Consequently, while an MRI is useful for establishing a relationship between biological factors and behaviour, its inability to show causation and lack of ecological validity and susceptibility to distortion via movement make this scanning technique limited in demonstrating a causal relationship with any certainty.

CONCLUSION: The use of brain imaging technologies can shed light on phenomena that could otherwise remain a mystery: the under-functioning of the PFC in impulsive murderers has led to further research in this area (e.g. Pardini, Raine et al., 2014); Maguire’s research has indicated that the brain may be plastic, leading to therapeutic measures being put in place for post-brain surgery patients. However, both techniques are criticised for their inability to demonstrate causal relationships and their low ecological validity. However, what these technologies lack in explaining why specific activity/changes occur is more than made up for in the glimpses they provide as to the structure and activity of the brain; insight that can enable researchers to point with increasing certainty to the relationship between the brain’s structure and function and the subsequent behaviour.
DISCUSS THE USE OF BRAIN IMAGING TECHNOLOGY IN INVESTIGATING THE RELATIONSHIP BETWEEN BIOLOGICAL FACTORS AND BEHAVIOUR. [22]

IB Psychology

Hosted by Joseph & Jim
Learning Outcomes

Discuss the use of brain imaging technology in investigating the relationship between biological factors and behaviour. [22]

- To provide hints and tips on ERQ writing.
- To outline the assessment criteria for ERQs in IB Psychology.
- To examine what is meant by the term ‘critical thinking’ and look at how to demonstrate critical thinking in your essays.
The Command Term

- The Command Term = Discuss
  - Offer a balanced review that includes a range of arguments.
  - Balanced review = strengths/limitations.
The Command Term

Discuss the use of brain imaging technology in investigating the relationship between biological factors and behaviour.

In terms of this ERQ it’s helpful to substitute the word ‘use’ with ‘useful’.

Discuss how useful brain imaging technologies are when investigating the relationship between biological factors and behaviour.
Discuss the use of brain imaging technology in investigating the relationship between biological factors and behaviour.

Finally, you need to consider the question ‘hook’. What does the examiner expect you to keep referring back to in your answer.

In this question, you must CONTINUOUSLY LINK back to the idea of ‘investigating the relationship between biological factors and behaviour’.
Structure

- Now that you’ve unravelled the question, you understand:
  - The Command Term
  - The Hook

- Now you need a structure...

- Let’s imaging you could write 1,000 words and you know that you’re going to be discussing TWO technologies.
Structure

- **Introduction**
- **BIT1 PET**
  - Description of what PET is and its use/problems with scanning technique
    - *Study (Raine, 1997)*
    - Discussion Centred On Strengths/Limitations
      - Strength – Real World Application
      - Limitation – Correlational
  - **BIT2 MRI**
  - Description of what MRI is and its use/problems with scanning technique
    - *Study (Maguire et al., 2000)*
    - Discussion Centred On Strengths/Limitations
      - Limitation – ecological validity/distortion
- **Conclusion**
  - Balanced Review
Structure

- **Introduction [50]**
- **BIT1 PET [425]**
  - Description of what PET is and its use/problems with scanning technique
    - Study (Raine, 1997)
    - Discussion Centred On Strengths/Limitations
      - Strength – Real World Application
      - Limitation – Correlational
  - **BIT2 MRI [425]**
    - Description of what MRI is and its use/problems with scanning technique
      - Study (Maguire et al., 2000)
      - Discussion Centred On Strengths/Limitations
        - Limitation – Ecological Validity/Distortion
- **Conclusion [100]**
  - Balanced Review

If you work on the assumption of ~1,000 words, that gives you 50 for the introduction and conclusion and 425 for each technique.
A ‘Model’ Answer
Introduction

Brain imaging technology is one method relevant to research at the BLOA as it enables researchers to examine the structure, function and activity of the brain, to examine the relationship between biological factors and behaviour. Such methods include PET (positron emission tomography) and MRI (magnetic resonance imaging).

[47 Words]
PET scans are a type of **nuclear medicine imaging** which uses a small amount of radioactive material to diagnose and determine the severity of brain diseases, including cancers and neurological conditions. PET scans involve the injection of a radioactive tracer; this tracer then appears as a bright colour on the scan, indicating which areas of the brain are most active in metabolising glucose during a task. The brighter the colour, the more active that part of the brain during that particular task. PET scans can not be used on everyone, and some people are allergic to the radioactive tracer. Also, PET scans are not used on children or pregnant women and are therefore unable to measure the relationship between biological factors and behaviour in these groups which is a slight limitation of this technique.
Study 1: Raine (1997)

[AIM] Raine (1997) used PET scans to demonstrate a biological correlation between impulsive behaviour and lack of pre-frontal cortex (PFC) activity.

[METHOD] Raine (1997) used a sample of 41 murderers (39 men and 2 women) who had pleaded NGRI (not guilty by reason of insanity) and 41 age and sex-matched controls.

[RESULTS] Raine found that the NGRI participants had lower glucose metabolism in their PFC in comparison to the controls.

[CONCLUSION] It might be inferred from these findings that NGRI murderers do not use their PFC to interpret or respond to non-emotional stimuli (in this case the continuous cognitive task), reacting instead in an emotional manner.

[102 Words]
The use of a PET scan allowed Raine to investigate the link between a biological factor (lack of pre-frontal cortex activity) and behaviour (impulsive behaviour). Such findings would not have been possible without the use of a PET scan which could be used in clinical and forensic settings to inform rehabilitation programmes and to go some way towards preventing crimes from taking place. Furthermore, by establishing a biological correlate for behaviour, it is arguably easier for researchers to understand the reasons behind specific behaviours e.g. impulsive, non-meditated murder.
However, such research does not provide a full explanation of all possible influences on the behaviour in question. The results of such studies are correlational, and therefore researchers are only able to conclude that the two factors (pre-frontal cortex activity and impulsive behaviour) are linked. Consequently, there is no real evidence to show conclusively that the NGRI murderers’ crimes are caused by a lack of PFC activity; there could be a huge range of other influences that produced the behaviour e.g. alcohol abuse, upbringing, etc. Therefore, PET scans are limited as it can only tell one part of a complex story when highlighting a link between biological factors and behaviour.
INTRODUCTION: Brain imaging technology is one method relevant to research at the BLOA as it enables researchers to examine the structure, function and activity of the brain, to examine the relationship between biological factors and behaviour. Such methods include PET (positron emission tomography) and MRI (magnetic resonance imaging).

BIT1: PET scans are a type of nuclear medicine imaging which use a small amount of radioactive material to diagnose and determine the severity of brain diseases, including cancers and neurological disorders. PET scans involve the injection of a radioactive tracer; this tracer then appears as a bright colour on the scan, indicating which areas of the brain are most active in metabolising glucose during a task. The brighter the colour, the more active that part of the brain during that particular task. PET scans can not be used on everyone, and some people are allergic to the radioactive tracer. Also, PET scans are not used on children or pregnant women and are therefore unable to measure the relationship between biological factors and behaviour in these groups which is a slight limitation of this technique.

STUDY 1: Raine (1997) used PET scans to demonstrate a biological correlation between impulsive behaviour and lack of pre-frontal cortex (PFC) activity. Raine (2005) sampled 41 murderers (39 men and 2 women) who had pleaded NGRI (not guilty by reason of insanity) and 41 age and sex-matched controls. Raine found that the NGRI participants had lower glucose metabolism in their PFC in comparison to the controls which might be inferred from these findings that NGRI murderers do not use their pre-frontal cortex to respond to non-emotional stimuli (in this case the continuous cognitive task) in an emotional manner.

DISCUSSION: The use of a PET scan allows researchers to investigate the link between a biological factor (lack of pre-frontal cortex activity) and certain impulsive behaviour). Such findings would not have been possible without the help of a PET scan which could be used in clinical and forensic settings to inform rehabilitation programmes and to go some way towards preventing crimes from taking place. However, such research does not provide a full explanation of all possible influencing factors in behaviour in question. The results of such studies are correlational, and therefore these studies are only able to conclude that the two factors (pre-frontal cortex activity and impulsive behaviour) are linked. Consequently, there is no real evidence to show conclusively that the NGRI murderers’ crimes are caused by a lack of PFC activity; there could be a large range of other influences that produced the behaviour e.g. alcohol abuse, upbringing, etc. Therefore, PET scans are limited as it only tell one part of a complex story when highlighting a link between biological factors and behaviour.
Structure

- **Introduction [50]**
- **BIT1 PET [425]**
  - Description of what PET is and its use/problems with scanning technique
    - Study (Raine, 1997)
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      - Strength – Real World Application
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  - **BIT2 MRI [425]**
    - Description of what MRI is and its use/problems with scanning technique
      - Study (Maguire et al., 2000)
      - Discussion Centred On Strengths/Limitations
        - Limitation – Ecological Validity/Distortion
  - **Conclusion [100]**
    - Balanced Review

If you work on the assumption of ~1,000 words, that gives you 50 for the introduction and conclusion and 425 for each technique.
BIT2: An older method of brain imaging is MRI. MRI, a powerful magnetic field is placed around the brain. It temporarily holds the nuclei of the brain’s atoms in one direction. When released, the atoms "wobble" back to their original positions and emit a weak radio frequency signal that can be picked up by a sensitive receiving device. It shows structural changes in brain matter and is used to investigate tumours or any possible brain damage. However, MRI scans are limited to only showing structural changes and need careful interpretation to prevent false positives. Therefore, researchers need to be cautious when interpreting the data from an MRI scan to examine the relationship between brain and behaviour, to ensure that their findings are valid. Furthermore, due to the nature of the scanner itself, MRI scans are not good for people with claustrophobia which can prevent some people from taking part in MRI studies. This limits the effectiveness of this technique for measuring the relationship between biological factors and behaviour in people with claustrophobia.

STUDY 2: Maguire et al. (2000) used MRI scans to compare the volume of grey matter in the brains of London taxi drivers compared to a pre-existing sample of matched controls. Maguire hypothesised that taxi drivers would show significantly higher volumes of grey matter in their hippocampus, a structure associated with navigational skills. By using an MRI scan, Maguire found increased grey matter was found in the brains of taxi drivers with controls in both the right and left hippocampus. The increased volume was found to be posterior (rear) hippocampi. The results of the MRI allowed Maguire to investigate the relationship between biological factors (the size of the hippocampus) and the behaviour (spatial navigation).

DISCUSSION: While the results of Maguire indicate a relationship between biological factors and behaviour, MRI scans and experiments like this are not without their issues. MRI scans lack ecological validity. However, until a procedure is developed that can be used by an individual during an everyday activity in the real world, they will essentially remain lab-bound. Furthermore, an MRI image cannot show several minutes of activity, and the slightest movement can affect the validity of the scans. Consequently, while an MRI is useful for establishing a relationship between biological factors and behaviour, its inability to show causation, low ecological validity and susceptibility to distortion via movement make this scanning technique limited in determining a causal relationship with any certainty.

CONCLUSION: The use of brain imaging technologies can shed light on phenomena that could otherwise remain inaccessible. Understanding of the PFC in impulsive murderers has led to further research in this area (e.g. Pardini, Raine et al., 2014); Maguire’s research has indicated that the brain may be plastic, leading to therapeutic measures being put in place for post-brain injury patients. However, both techniques are critised for their inability to demonstrate causal relationships and their low ecological validity. However, what brain technologies lack in explaining why specific activity/changes occur is more than made up for in the glimpses they provide as to the structure and activity of the brain; insight that can enable researchers to point with increasing certainty to the relationship between the brain’s structure and function and the subsequent behaviour.
The use of brain imaging technologies can shed light on phenomena that could otherwise remain a mystery: the under-functioning of the PFC in impulsive murderers has led to further research in this area (e.g. Pardini, Raine et al., 2014); Maguire’s research has indicated that the brain may be plastic, leading to therapeutic measures being put in place for post-brain surgery patients. However, both techniques are criticised for their inability to demonstrate causal relationships and their low ecological validity. However, what these technologies lack in explaining why specific activity/changes occur is more than made up for in the glimpses they provide as to the structure and activity of the brain; insights that can enable researchers to point with increasing certainty to the relationship between the brain’s structure and function and the subsequent behaviour.
INTRODUCTION: Brain imaging technology is one method relevant to research at the BLOA as it enables researchers to examine the structure, function and activity of the brain, to examine the relationship between biological factors and behaviour. Such methods include PET (positron emission tomography) and MRI (magnetic resonance imaging).

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DISCUSSION: The use of a PET scan allowed Raine to investigate the link between biological factor (lack of pre-frontal cortex activity) and behaviour (impulsive). Such findings would not have been possible without the use of a PET scan which are usually used in clinical and forensic settings to inform rehabilitation programmes and to gain knowledge towards preventing crimes from taking place. However, such research does not provide a full explanation of all possible influences on the behaviour in question. The results of such studies are correlational, and therefore researchers are only able to conclude that the two factors (pre-frontal cortex activity and impulsive behaviour) are related. Consequently, there is no real evidence to show conclusively that the NGRI murderers lack PFC activity, and that lack of PFC activity causes the impulsive behaviour. Furthermore, PET scans are expensive and as such it only tells one part of a complex story when looking at a link between biological factors and behaviour.

BIT2: An older method of brain imaging is fMRI, in which a magnetic field is placed around the brain. It temporarily holds the nuclei of the brain’s atoms in one direction. When released, the atoms "wobble" back to their original position and emit a weak radio frequency signal that can be picked up by a sensitive receiver device. It shows structural changes in brain matter and is used to investigate tumours or any possible brain damage. However, MRI scans are limited to only showing structural changes and need careful interpretation to prevent false positives. Therefore, researchers need to be cautious when interpreting the data from MRI scan to examine the relationship between brain and behaviour, to ensure that their findings are valid. Furthermore, due to the nature of the scanner itself, MRI scans are not good for people with claustrophobia which can prevent some people from taking part in MRI studies. This limits the effectiveness of this technique for measuring the relationship between biological factors and behaviour in people with claustrophobia.

STUDY 2: Maguire et al. (2000) used MRI scans to compare the volume of grey matter in the brains of London taxi drivers compared with a pre-existing sample of matched controls. Maguire hypothesised that taxi drivers would show significantly higher volumes of grey matter in their hippocampus, which is associated with navigational skills. By using an MRI scan, they found increased grey matter was found in the brains of taxi drivers compared with controls, both in the left and right hippocampi. The increased volume was found in the ventrolateral part of the hippocampus. The results of the MRI allowed Maguire to investigate the relationship between biological factors (the size of the hippocampus) and the behaviour (ability to navigate).

CONCLUSION: While the results of Maguire indicate a relationship between biological factors and behaviour, MRI scans and experiments like this are often criticised for lacking ecological validity. However, until a procedure is developed whereby brain scanning can be done during everyday activity in the real world, then it must essentially remain limited. Furthermore, an MRI image can take several minutes to form, and the slightest movement can affect the validity of the findings. Consequently, while an MRI is useful for exploring a relationship between biological factors and behaviour, its inability to show causation, low ecological validity and susceptibility to distortion via movement make this scanning technique limited in demonstrating a causal relationship with any certainty.

CONCLUSION: The use of brain imaging technologies can shed light on phenomena that could otherwise remain a mystery: the under-functioning of the PFC in impulsive murderers has led to further research in this area (e.g. Pardini, Raine et al., 2014); Maguire's research has indicated that the brain may be plastic, leading to therapeutic measures being put in place for post-brain surgery patients. However, both techniques are criticised for their inability to demonstrate causal relationships and their low ecological validity. However, what these technologies lack in explaining why specific activity/changes occur is more than made up for in the glimpses they provide as to the structure and activity of the brain; insight that can enable researchers to point with increasing certainty to the relationship between the brain’s structure and function and the subsequent behaviour.

- Knowledge = 425 Words
- Discussion = 571
- Total = 996 Words
- Links = 10
Learning Outcomes

Discuss the use of brain imaging technology in investigating the relationship between biological factors and behaviour. [22]

- To provide hints and tips on ERQ writing.

- To outline the assessment criteria for ERQs in IB Psychology.

- To examine what is meant by the term ‘critical thinking’ and look at how to demonstrate critical thinking in your essays.
Assessment Criteria

- ERQs are assessed using three criteria:
  A. Knowledge
  B. Critical Thinking
  C. Organisation

<table>
<thead>
<tr>
<th>Criterion A</th>
<th>Knowledge &amp; Relevance</th>
<th>Psychological Research</th>
<th>Critical Thinking</th>
<th>Criterion C</th>
<th>Organisation</th>
</tr>
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<tbody>
<tr>
<td>7-9</td>
<td>Detailed, accurate and relevant knowledge and understanding</td>
<td>Relevant psychological research used with broad effect</td>
<td>Relevant and explicit critical thinking</td>
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<td>Well organised, developed and focused on the question</td>
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<td>Limited knowledge and understanding, but relevant</td>
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<td>Appropriate, but limited or implicit critical thinking</td>
<td>3-4</td>
<td>Organised or focused, but not throughout the entire question</td>
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<tr>
<td>1-3</td>
<td>Limited knowledge and understanding of marginal relevance</td>
<td>Relevant psychological research used with broad effect</td>
<td>Critical thinking not linked to question</td>
<td>1-2</td>
<td>None</td>
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<td>0</td>
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Assessment Criteria

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Let’s focus on ‘critical thinking’:

Critical thinking in this essay is in relation to the depth of the discussion and how the discussion is used to answer the question...

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Critical Thinking

Critical thinking in this essay is in relation to the depth of the discussion and how the discussion is used to answer the question...

These are some common ‘discussion’ point I have seen when marking this essay:

- **MRI:** Not good for people with claustrophobia
- **MRI:** Not good if people move
- **PET:** People might be allergic to the tracer
- **PET:** Not used on children or pregnant women
- **PET/MRI:** Lacks ecological validity
- **PET/MRI:** Correlation
- **PET/MRI:** False/Positive
- **PET/MRI:** Such findings would not be possible without...
Critical Thinking

- MRI scans are not good for people with claustrophobia and PET scans cannot be used on children or pregnant women.
Critical Thinking

- MRI scans are not good for people with claustrophobia (as the person would be 'trapped' in a confined space. Furthermore, PET scans cannot be used on children or pregnant women. This affects the number of people that can take part in studies using MRI/PET scans and will often make the sample less representative (as certain groups of people are not included).
Critical Thinking

- MRI scans are not good for people with claustrophobia (as the person would be ‘trapped’ in a confined space. Furthermore, PET scans cannot be used on children or pregnant women. This affects the number of people that can take part in studies using MRI/PET scans and will often make the sample less representative (as certain groups of people are not included).

- Therefore, these techniques are unable to measure the relationship between biological factors and behaviour in these groups which limit the findings of such research to a narrower group of peoples where as we are unable to generalise the results of such studies to these excluded groups.
The findings from Raine’s study would not have been possible without a PET scanner.
The use of a PET scan allowed Raine to investigate the link between a biological factor (lack of pre-frontal cortex activity) and behaviour (impulsive behaviour).
Critical Thinking

- The use of a PET scan allowed Raine to investigate the link between a biological factor (lack of prefrontal cortex activity) and behaviour (impulsive behaviour). Such findings would not have been possible without the use of a PET scan which could be used in clinical and forensic settings to inform rehabilitation programmes and to go some way towards preventing crimes from taking place.
Learning Outcomes

Discuss the use of brain imaging technology in investigating the relationship between biological factors and behaviour. [22]

- To provide hints and tips on ERQ writing.

- To outline the assessment criteria for ERQs in IB Psychology.

- To examine what is meant by the term ‘critical thinking’ and look at how to demonstrate critical thinking in your essays.
INTRODUCTION: Brain imaging, which is a method used to study the structure and function of the brain, is a valuable tool in understanding brain diseases and disorders. One method relevant to research at the BECA Centre is PET (positron emission tomography) imaging, which can help researchers investigate the relationship between biological factors and behavior.

PET scans can reveal differences in activity in specific regions of the brain. For example, PET scans have been used to study drug addiction, as shown in the case of a sample group of drug addicts. PET scans can help identify areas of the brain associated with the addiction and can help researchers understand the neural mechanisms involved in addiction.

PET scans can also be used to study the effects of drugs on the brain. For example, PET scans have been used to study the effects of cocaine on the brain. This research has shown that cocaine can increase activity in the dopamine system, which is associated with reward and pleasure.

In conclusion, PET scanning is a powerful tool for studying brain diseases and disorders, and it has the potential to provide valuable insights into the mechanisms underlying these conditions. Further research in this area is needed to fully understand the potential of PET scans in the detection and treatment of brain diseases.
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Any Questions?