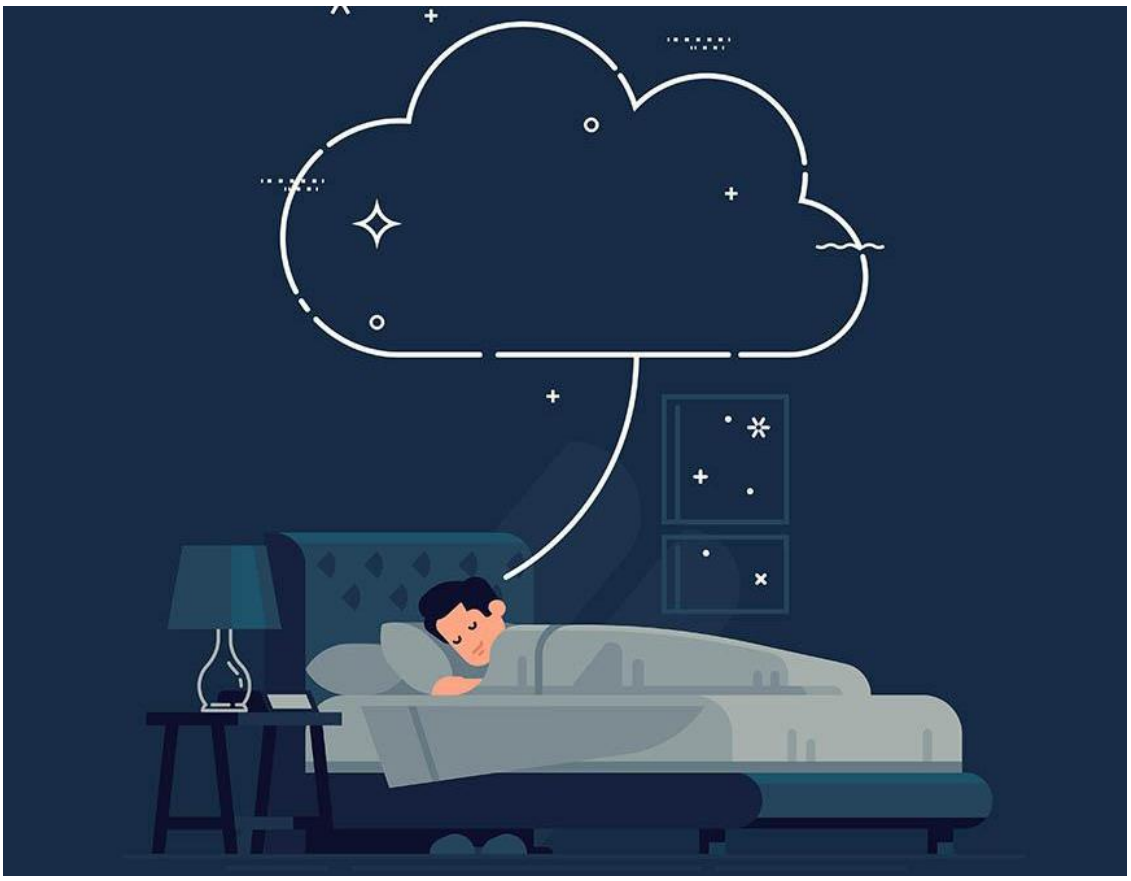
THE DUSTON SCHOOL

Knowledge itself is power

GCSE Psychology



Sleep and Dreaming

Knowledge Organiser

Name:

Teacher:

SLEEP & DREAMING

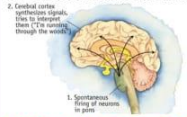
KEY DEBATES
- NATURE (brain processes) vs. NURTURE (past experiences)
- REDUCTIONISM (focused on narrow view of brain activity)
- SUBJECTIVE (Freud) vs OBJECTIVE (based on brain scans)

ACTIVATION SYNTHESIS THEORY OF DREAMING

The theory suggests that dreams are a result of our mind trying to make sense of brain activation during sleep.

NEURONAL ACTIVITY INCREASES IN THE PONS

During REM sleep, body is paralysed, but activity increases in area of brainstem called the pons - random brain waves are generated.



BRAIN WAVES TRAVEL TO CEREBRAL CORTEX

Higher brain areas in the cerebral cortex that would normally interpret sensory information. The information is treated as if it was real sensory information.

SYNTHESIS OCCURS - MAKING SENSE OF RANDOM SIGNALS

Through interpreting the stimulation synthesis occurs; using stored memories to make sense of the information.

THE ROLE OF THE LIMBIC SYSTEM

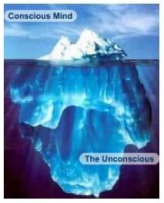
Because the brain waves activate many different brain areas such as the limbic system (which controls emotions) the resulting **dreams are bizarre & emotional.** So the theory suggests that **dreams have no real meaning.**

LIMITATIONS

- Too reductionist - suggests that dreams are a random result of happens when the mind tries to make sense of brain activity that occurs during sleep.
- The theory is quite a simplistic view and ignores the view that dreams can be meaningful, it is further reductionist as it does not explain the purpose of dreams, just where they come from.
- Doesn't explain how people with damage to brainstem can still dream.

FREUDIAN THEORY OF DREAMING

The theory suggests that the mind is like an iceberg; it consists of our conscious mind and unconscious mind (we are normally unable to access it).



UNCONSCIOUS MIND

Contains unacceptable thoughts, feelings and desires that our conscious mind cannot deal with & are considered unacceptable in society. Freud suggested this part of our personality is the ID & is repressed by another part of our personality called the ego.

Dreams allow us to access the unconscious mind.

WISH FULFILMENT

In sleep the ego is weakened & the unconscious mind tries to break through into our consciousness. In order to satisfy these unconscious desires we dream, this is known as **wish fulfilment** *(e.g. being able to eat all the icecream you want).*

CONTENT OF DREAMS

True content of our dreams are hidden through the use of symbols which do not disturb us. So dreams will have two types of content:

Manifest content - what we actually see In our dreams – disguises the latent content through symbolism (e.g. falling in a dream).

Latent content - which is the true meaning of our dreams (e.g. being afraid of failing at something).

LIMITATIONS

- Highly subjective - dream interpretation is dependent on person's opinion.
- Difficult to test as based on unreliable research where Freud alone conducted interviews & interpreted the dreams of participants.
- Based on studies that have cultural and historical bias.

KEY CONCEPTS

FUNCTIONS OF SLEEP

a) Physical repair to return the body to a normal, healthy state - healthy brain that functions normally

B) Emotional stability (feeling normal and psychologically healthy);

c) Instinctive and necessary for survival (evolved behaviour)- keeps us safe at night

SLEEP CYCLE

Stage 1 - 10% Stage 2 - 50% Stage 3 - 10%
Stage 4 - 10% Rapid Eye Movement (REM) - 20%

NEUROPSYCHOLOGY OF SLEEP

Endogenous pacemakers - internal biological clocks- manage circadian rhythms (e.g. Suprachiasmatic nucleus)

Exogenous Zeitgebers - features of the environment that manage circadian rhythms (e.g. light)

Hypothalamus - controls key bodily functions

Melatonin - hormone that induces sleep. Released by the pineal gland.

APPLICATIONS OF RESEARCH

IMPACT OF NEUROLOGICAL DAMAGE ON SLEEP

Understanding Insomnia

a) damage to the **hypothalamus** can occur after surgery, trauma or disease. The **SCN is** part of the hypothalamus- damage to this can lead to insomnia.

b) damage to the **pineal gland (regulates melatonin production**), can also lead to insomnia.

WAYS TO IMPROVE ON SLEEP PROBLEMS

1) Relaxation techniques

- Clearing the mind/writing down concerns (to reduce anxiety & worry) AND deep breathing & relieving tension in body through visualisation.

Balances the nervous system by calming the sympathetic nervous system & supporting the parasympathetic nervous system to do its job.

2) Sleep Hygiene

- make changes to health (diet/exercise/ coffee etc.) and physical environment to promote sleep

- reduce light/ electronic equipment (light-block melatonin production)

- regulate temperature
- comfortable bedding

- bedroom decluttered & clocks faces turned away

NATURE

WILLIAMS ET AL. (1992) STUDY INTO THE BIZARRENESS OF DREAMS & FANTASIES

AIM

To see if bizarreness of dreams is different to the bizarreness of daytime fantasises.

SAMPLE

12 biopsychology students from Harvard University, aged 23 to 45.

RESEARCH METHOD

Natural experiment and self-report journal entries)

PROCEDURE

a) Participants kept a journal for a term recording any dreams they could recall & any day dreams they experienced.

b) Researchers selected 60 dreams & 60 day dreams.

c) 3 different judges scored for bizarreness (inter-rater reliability).

FINDINGS & CONCLUSION

- Dreams were found to be a lot more bizarre than daytime fantasies (day dreams).
- There were good levels of inter-rater reliability between the judges (88.7% similar scores).
- Dreams scored higher than fantasies for: plot discontinuity (greatest difference), plot incongruity, uncertainty, and thought incongruity

The bizarreness of dreams is due to the brain activity during REM sleep..

LIMITATIONS OF STUDY

- Sample too small & gender biased (10 females)- cannot be generalised.
- Social desirability - self report so participants may have lied about/ changed their dreams/fantasies.

NURTURE

FREUD's (1918) DREAM ANALYSIS OF 'THE WOLFMAN'

AIM

To see if dream analysis could help treat psychological problems by releasing repressed memories.

SAMPLE

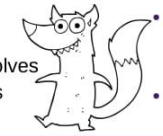
One Russian male in his 20s, suffering from depression

RESEARCH METHOD/ DESIGN

Longitudinal case study (4 years)

PROCEDURE

- The man, known as "The Wolfman", was interviewed over 4 yrs.
- He was thought to suffer from depression after his father & sister had both committed suicide.
- He reported a dream where he woke up and saw 6 or 7 white wolves sitting in a walnut tree outside his bedroom window staring at him.



FINDINGS & CONCLUSION

I1) The wolves represented fear because he had seen a 'primal scene' of his parents having sex. Freud also said the wolves represented fear of his father who he was scared would castrate him.

2) Also thought as the dream was around Christmas, the wolves could represent pleasure, like Christmas presents.

Dreams can represent repressed thoughts which hide in the unconscious.

LIMITATIONS OF STUDY

- Sample too small & culturally biased (unrepresentative & can't be generalised).
- Study too subjective - based only on Freud's interpretations.

Created by @stephhill58

QR code for past papers and other useful resources

https://www.ocr.org.uk/qualifications/gcse/psychology-j203-from-2017/assessment/

Reminder of Assessment Objectives

AO1 – Learners must demonstrate knowledge and understanding of psychological ideas, processes and procedures

AO2 – Learners must apply knowledge and understanding of psychological ideas, processes and procedures

AO3 – Learners must analyse and evaluate psychological information, ideas, processes and procedures to make judgements and draw conclusions

Key Terminology

Term	Definition
Activation	Refers to the random firing of the brain during REM sleep, particularly in the pons and neurons which control the eyes.
Dreaming	A dream is a succession of images, ideas, emotions, and sensations that usually occurs involuntarily in the mind during certain stages of sleep. Dreaming usually occurs during REM sleep. 
Endogenous Pacemakers	Internal 'biological clocks' that control human biological rhythms. 
Exogenous zeitgebers	External cues that help to keep an individual's rhythms adjusted with the changing external environment. 
Fantasies	An imaginary thought or image, or a set of images, that provides a pleasurable experience for an individual.
Hormone	Chemical released by a gland into the bloodstream to deliver a message to another part of the body.
Infantile Neurosis	A psychogenic mental disorder which manifests expresses psychic conflict that has been symbolically noted in the subjects early childhood.
Insomnia	Habitual sleeplessness; inability to sleep.
Latent content	The underlying meaning of the dream
Manifest content	What actually happens in the dream
Melatonin	Hormone which induces sleep by inhibiting (stopping) the brain mechanisms that promote wakefulness.
Parasympathetic Nervous System	Branch of the nervous system activated when we are no longer in the stressful situation! The role of the parasympathetic nervous system is to relax the body, and return us to our 'normal' resting state.

Primal scene	Phrase used within psychoanalysis which to define when a child witnesses a sexual act, usually between the parents, that traumatises the psychosexual development of the child.
REM Sleep	A form of sleep that occurs at intervals during the night and is characterised by rapid eye movements.
Reductionism	Explaining a complex behaviour by breaking it down into simple components 
Repression	Pushing an unpleasant thought into the unconscious mind.
Subjectivity	When theories/findings are influence by personal opinion not just facts and evidence
Sympathetic Nervous System	Branch of the nervous system activated when we are stressed or anxious. Helps us prepare for action when we are faced with a stressful situation.
Synthesis	Refers to the cerebral cortex's attempt to assign meaning to the random brain activity during REM.
Unconscious	Part of our mind that we are unable to voluntarily access. Including repressed memories and innate biological drives and urges.
Wish-fulfilment	The idea that dreams satisfy/fulfil some of our deepest desires and urges, which we can't fulfil in real life.

Unit Summary

Key Concepts ***The features, functions and benefits of sleep; sleep disorders***	**The features of sleep** When we sleep, we go through a 'stages of sleep cycle', with a complete cycle lasting 90 minutes. Therefore, every night, we go through multiple cycles of sleep. Let's break down the different stages: Each stage is characterised by a different level of brainwave activity that can be monitored using an EEG scan. The first 4 stages are classified as NREM (non-rapid eye movement), and the final stage is classified as REM (rapid eye movement), due to the movement of the eyes beneath the eyelids. Most people go through between 3 and 5 intervals of REM sleep each night. **The functions and benefits of sleep** • One suggestion is that the brain helps us to keep a healthy brain. Research suggests that REM sleep 'resets' the brain after all its activity during the day. Sleep also appears to have an important role in consolidating memories from the day and protecting older established memories. The space between brain cells also increases between sleep, which allows us to clear out any toxins associated with neurodegeneration (brain damage). • Sleep may be needed for physical repair. Slow wave sleep appears to be particularly useful when it comes to the healing of cells in the body (especially in the cardiovascular system). Deep sleep also triggers to release of growth hormone, which boosts our muscle mass and repairs cells and tissues in the

	body. Our immune system also become more active, allowing bacteria and viruses to get killed in large numbers. • Emotional stability - A well-rested body produces less of the stress hormone cortisol, meaning we should feel less stressed and more calm and relaxed when we've had enough sleep. Sleep also allows the brain to rebalance all of the hormones and chemicals that affect your mood – explaining the link between sleep and feeling content and happy. **Sleep disorders** Insomnia is one of the most common sleep disorders which is characterised as the difficulty getting to sleep (sleep onset insomnia) or staying asleep (sleep maintenance insomnia). There are a number of causes of insomnia, this can include being stressed and anxious which leads to the production of the hormone cortisol which alerts us and therefore causes difficulties sleeping. Sleep problems can be caused by a poor sleep routine which can interfere with the biological body set up. Sleep problems can also be caused by a poor sleeping environment such as a bedroom which is too light, noisy or uncomfortable. Carrying out other activities in the bedroom such as watching TV and playing computer games can lead to associating the bedroom with activity rather than sleep. While drinking drinks which contain caffeine such as coffee and energy drinks are also not advisable if you want a good night's sleep. While underlying health problems such as physical pain or mental illness can also contribute to developing sleep disorders.
Practical Application ***Damage to the hypothalamus as an explanation of insomnia*** ***Treating insomnia***	Insomnia can also be caused by brain damage to the hypothalamus. As the hypothalamus becomes damaged, this stops the SCN from working effectively. This means that when there is no light, the SCN is unable to do its job – i.e. activate the pineal gland to release the melatonin which causes us to sleep. This would likely be the reason why people with damage to the hypothalamus often develop insomnia **Treating Insomnia** **Relaxation techniques** One cause of insomnia is having a highly active nervous system due to the individual having high anxiety, relaxation techniques aim to treat insomnia by controlling the nervous system. These include: clearing the mind, deep breathing and relieving muscle tension in the body. How do these work? • When someone is stressed, the sympathetic nervous system is activated – so heart rate and breathing is increased, this makes it difficult for the parasympathetic nervous system to do its job (help us to relax) as these 2 systems counteract eachother. Therefore, relaxation techniques are useful as they help people take conscious control over these processes. For example, **deep breathing** helps us to normalise our heart rate and respiration rate – as the parasympathetic nervous system should do (but is failing to do). This helps people to relax, so they can sleep better. **Sleep Hygiene education** There are also many things someone can do to improve their sleep. 'Sleep hygiene' refers to ways people can improve their sleep, i.e. 'clean up' their sleep.

	E.g. not consuming alcohol, nicotine of caffeine before bed, avoiding naps and not playing video games before bed. The physical environment – where you sleep – can also be improved in various ways to help us sleep, e.g. bedroom should be dark, quiet and a comfortable temperature, clocks face away from you, bedroom just used for sleep – not video games or work
Biopsychology time! **The Neuropsychology of sleep**	An **endogenous pacemaker** is something within our brain or body which controls our biological rhythms, while **exogenous zeitgebers** are external time givers that also regulate these rhythms. These could be; amount of light, meal times, temperature, or even the time that our favourite TV programmes are on. One biological rhythm that they control is the **sleep wake cycle**. The main pacemaker is a part of the brain called the **suprachiasmatic nucleus (SCN)** which are nerve cells within the **hypothalamus**. The SCN is able to detect the amount of light (the main zeitgeber) through the eye and then sends signals to another part of the brain called the **pineal gland** which then produces the hormone **melatonin** which induces sleep. Simply speaking, darkness produces melatonin which makes us sleep.
Key Theory 1 ***Freudian Theory of Dreaming***	Sigmund Freud argued that the mind is like an iceberg; it consists of our conscious, preconscious and unconscious. The **conscious** mind (the tip of the iceberg) is made up of thoughts and wishes that we are aware of. The **preconscious mind** contains thoughts and desires that we are not aware of, but can easily be brought to consciousness. While the unconscious mind is below the surface and we are normally unable to access it. Within our **unconscious mind** we all have unacceptable thoughts, feelings and desires that our conscious mind cannot deal with, including innate biological urges, e.g. for sex and aggression. Such socially unacceptable thoughts are repressed by another part of our personality called the ego. The ego is our reality principle and through repression these disturbing thoughts are prevented from being conscious to us. According to Freud, when we sleep the ego is weakened and the unconscious mind tries to break through into our consciousness. In order to satisfy these unconscious desires we dream, this is known as **wish fulfilment**. However, if our desires came through in our dreams we would continually wake up and never be able to sleep due to their disturbing nature. As a result the ego carries out dream work, this is when the true content of our dreams are hidden through the use of symbols which do not disturb us. Therefore dreams will have two types of content; the **latent content** which is the true meaning of our dreams and the **manifest content** which is what we actually see in our dreams – it disguises the latent content through symbolism. **Criticisms** ☼ <u>One of the main issues is that his theory is considered to be highly **subjective**. This means it is influenced too heavily by his personal opinions. Whereas science should be objective – based only on facts, not on personal views or opinions.</u> This is because the interpretations of dreams is based on Freud's opinions and beliefs, not on objective facts (e.g. there is no evidence that dancing represents sex.)Therefore, his theory is subjective and as a result, unscientific. ☼ Another reason why Freud's theory is considered unscientific is that it is **untestable**. It focuses on the unconscious mind – something which cannot be accessed by the researcher or the participants themselves. This means it is impossible to test in a scientific way, as it cannot be directly observed. ☼ Freud's research relies heavily on case studies of individual patients. This means he has a very small sample size, and these patients may not accurately reflect

	how 'everyone thinks' or what everyone's dreams mean. This means his theory lacks generalisability and cannot explain everyone's dreams ☼ Freud's themes, especially in terms of how dreams were interpreted may just reflect the culture in late 1800s/early 1900s Europe. For example, there were quite strict views about sex in those times – this may explain why people would have been trying to repress those desires. E.g. about same-sex relationships, having multiple sexual partners. So, perhaps a lot of people then were trying to repress sexual desires, but this would be less likely the case in the modern world where we have more liberal attitudes towards sex. The theory may not be applicable to the modern world
Core Study 1	**Freud (1918) – dream analysis of the wolfman** *Find details on a following page*
Key Theory 2 ***The activation synthesis theory of dreaming***	**Activation** 'Activation' refers to the random firing of neurons in the brain during REM sleep. As we learned before, the brain is highly active before and during REM sleep. This is because neurons (brain cells) become <u>activated</u> and 'fire' (send signals). This activation appears to mainly come from: ☼ The **pons** which is located in the **brainstem** ☼ The **neurons** which control movement of the **eyes** The signals from these brain areas are powerful electrical signals, which pass through the brain like a wave. When you look at a brain scan, they are sudden spikes. This activation then activates the **limbic system**, which is involved in the processing of emotions. **Synthesis** These brain waves travel up to the 'higher' areas of the brain in the **cerebral cortex** (the outer layer of the brain). The cerebral cortex attempts to make **sense** of this brain activity – this is what we mean by **synthesis** Just as would happen when we're awake – the cerebral cortex tries to make sense of all these random signals coming from the pons and other brain areas. It does this by trying to **attach meaning** to what is happening – this is what caused dreams to be produced. When the brain tries to assign meaning to these signals, it often uses information stored in our memories to do this. The brain waves activate many different brain areas such as the limbic system (which controls emotions) the resulting dreams are bizarre and even emotional **Criticisms** ☼ <u>The theory is considered reductionist as dreams are highly complex, often very bizarre and can be quite meaningful to the dreamer. So, critics would argue it is wrong to reduce this complex behaviour down to simple neuronal processes.</u> The theory essentially takes very complex dreams and says they are just due to some random brain activity when you sleep. This is an example of reductionism as you are taking a complex behaviour (dreams) and reducing them down to a simple component (random firing in the brain). Some argue that this undermines the complex nature of dreams and therefore cannot <u>fully</u> explain why we dream. Freud's theory is more holistic, considering many aspects about an individual to explain their dreams – biological instincts, childhood experiences, pressures of the 'social' world.

	☼ Research suggests that dreams aren't as random as the theory suggests. The theory argues that dreams are just the brain trying to assign meaning to random firing in the brain. However, some dreams are based highly on something that happened that day or will happen another day – suggesting they aren't so random. Even more significantly, some people have recurring dreams or their dreams are all of similar themes or people wake up and when they go back to sleep, they continue the dream from where they left off ☼ This theory focuses very heavily on dreams being the result of increased brain activity during REM sleep. However, this may not be a full explanation – as evidence suggests that people still have dreams during other sleep stages, when the brain is less active. This suggests that the focus of increased brain activity in REM being the cause of dreaming may be inaccurate. ☼ Patients with damage to the brainstem still have dreams. This suggests that the brainstem (and thus, pons) do not have such a significant role in dreaming as suggested by the theory.
Core Study 2	**Williams et al. (1992) – a study into the bizarreness in dreams and fantasies: Implications for the activation synthesis hypothesis.** *Find details on a following page*

Core Studies

Freud's (1918) study: a study of the Wolfman

Background
• Freud developed a theory, the main focus of which was how the unconscious is, by far, the largest part of the mind and has great influence on the individual. • Freud used case studies to gather in-depth, detailed data about an individual. He used methods such as free association, dream analysis and slips of the tongue to try to uncover an individual's unconscious wishes, desires, thoughts and fears. • This study only looks at the Wolfman's key dream and Freud's initial analyses of the dream, it does not cover the complete history of the patient's illness, treatment and recovery. • Freud believed in the power of therapy and was interested in the origins of mental illness. Freud's type of therapy was called psychoanalysis. This led him to develop his theory of dreams & dream analysis.
Aim
Freud wanted to try to explain and treat Wolfman's psychological problems through dream analysis.
Sample
Sergei Pankejeff was a Russian aristocrat born in 1886 in Odessa. Freud gave him the pseudonym 'Wolfman' to protect his identity.
Method

(i) Research method/design

• This was a **<u>longitudinal case study</u>** which gathered in-depth, detailed information about the infantile neurosis of Sergei Pankejeff – the Wolfman. Freud carried out a series of interviews from 1910-1914 – so it was a longitudinal study.

(ii) Outline of the study

• Freud reported that:

(i) Sergei's initial relationship with his father was excellent and that he aspired to be a 'gentleman' like him.

(ii) In 1906, the Wolfman's older sister, Anna, committed suicide by poisoning herself and he began experiencing symptoms of depression. In 1907 his father overdosed on sleeping pills, so also committed suicide. Soon after, the Wolfman began seeking treatment for his own depression and, in 1910, his physician took him to Vienna to have treatment with Freud.

(iii) The Wolfman's early years had been dominated by a serious neurotic disorder which began shortly before his fourth birthday as anxiety hysteria (animal phobia) and then turned into an obsessive-compulsive neurosis, religious in content, the effects of which persisted into his tenth year.

• Much of Freud's analysis of the Wolfman's infantile neurosis centred on a dream that he had as a young child – shortly before his fourth birthday. *The dream: 'I dreamt that it is night and that I am lying in my bed (the foot of my bed was under the window, and outside the window there was a row of old walnut trees. I know it was winter in my dream, and night-time). Suddenly the window opens of its own accord, and terrified, I see that there are a number of white wolves sitting in the big walnut tree outside the window. There were six or seven of them. The wolves were white all over and looked more like foxes or sheepdogs because they had big tails like foxes and their ears were pricked up like dogs watching something. In great terror, evidently of being eaten by the wolves, I screamed and woke up. Obviously fearful that the wolves were going to gobble me up I screamed and woke up. My nurse hurried to my bedside, to see what had happened. It was some time before I could be convinced that it had only been a dream, because the image of the window opening and the wolves sitting in the tree were so clear and lifelike. Eventually I calmed down, feeling as if I had been liberated from danger, and went back to sleep.'*

The dream was described by the Wolfman in slightly different ways on different occasions.

Results

Manifest Content	Latent Content
× The wolves watching Sergei as a boy	× The dream was a result of Pankejeff witnessing at a very young age a 'primal scene' of his parents having sex. The wolf symbolised his father.
× The tree in the dream	× A Christmas tree as the dream occurred at Christmas time, where there would have been Christmas present there were wolves.
	× Represented the white bed linen and underclothes of his parents.
× White wolves	
× Wolves in the tree	× Pankejeff had an unconscious desire to be seduced by his father (like the pleasure of receiving Christmas gifts). Gifts = wolves = his father. Freud believed he wanted to experience the pleasure he had seen in his mother's face but believed his mother must have been castrated (no penis) by his father during the sex act.
× Feared the wolves would eat him	× He feared his father's power and developed **castration anxiety** (fear of losing his penis).
× Wolves having big tails	× Symbolised larges penises which were a threat to the boy.

Overall: Pankejeff repressed his unconscious fear of his father but displaced it onto wolves.

Conclusions

• **The unconscious mind can have significant influences on human behaviour.**

• Traumatic events can be repressed into the unconscious and repressed memories can be projected to the conscious mind.

• Phobias may be caused by childhood experiences which have been repressed into the unconscious mind.

• Repressed unconscious thoughts can resurface into conscious awareness through dreaming

Evaluation-criticisms

- It is difficult to make any generalisations from the study of one person. Other people's dreams may be more literal than the Wolfman's.
- The Wolfman is unrepresentative in the sense that he was suffering from mental health problems so may have had different types of dreams compared to other people.

- The study focuses on something that cannot be objectively tested-the unconscious.
- The study relied on the Wolfman accurately recalling his dream but there is no guarantee that this is the case. Dreams are notoriously difficult to remember.
- The case study used the interview method but this can be unreliable. The Wolfman may have lied, or lacked insight or may not have been able to adequately explain what he had experienced.

Summary of Williams et al. (1992) study: the bizarreness of dreams & fantasies

Background

- In 1997, Hobson and McCarley proposed the activation-synthesis model/hypothesis of dreaming, which is **neurobiological.** This suggests that near-random patterns of brain activation (which are the result of other processes such as memory consolidation) are combined and interpreted (synthesis) by the brain, resulting in the bizarre (and characteristic) features of dreams.
- The model helps to make sense of one of the puzzling features of dreams: that they often combine the 'day residue' of present situations and experiences with memories from years or even decades before.
- But researchers thought that the two brain states of **wakefulness (experience fantasies)** and **REM sleep (experience dreams),** which are physiologically different, must also be cognitively (thoughts) different.

Aim

The aim of this study was to assess the bizarreness in dreams and fantasies as a way of showing support for the activation-synthesis hypothesis of dreaming.

Method

(i) Research method/design

• **Natural experiment** using the **self-report method** to gather data to compare people's experience of dreams and fantasies (IV).

(ii) Sample

• 12 students (2 male, 10 female) enrolled in a biopsychology course at Harvard University Extension School in Cambridge, Massachusetts, USA; age range was 23-45 years of age.

(iii) Apparatus/materials

• Writing equipment and paper for recording dream and fantasy reports. Hobson et al.'s (1987) Bizarreness Scale.

(iv) Procedure

• During term time, the students were asked to record, upon waking during the night and in the morning, any and all dreams remembered.

• Mental activity occurring during waking was also recorded if it met the following definition of fantasy: *apparently spontaneous mentation of a narrative and/or perceptual nature without clear links to external stimuli or conscious intention (these were then considered 'fantasies').*

• **All dream and fantasy reports were kept in a written journal.**

• A total of 60 dreams and 60 fantasies were selected from the journals submitted by the 12 students on the basis of: (i) Length (in excess of 5 lines). (ii) The presence of descriptions of formed visual perceptions.

• Reports were divided into one sentence units and scored separately for bizarreness using a bizarreness coding scale devised by Hobson et al. (1987).

Table 6.1 Scales for categorising dreams.

Stage one: locus		Stage two: type of bizarreness	
Plot	A	Discontinuity	1
Thoughts of dreamer/ character	B	Incongruity	2
Emotion of dreamer/ character	C	Uncertainity	3
Ad hoc	D	Not bizarre	0

Williams, J. M., Rittenhouse, C., & Hobson, J.A. (1992) Bizarreness in Dreams and Fantasies: Implications for the Activation-Synthesis Hypothesis. Consciousness and Cognition, p.174

Stage 1= the locus of the bizarre item (where & what was happening)

Stage 2= discontinuity (suddenly stopped), an incongruity (out of place) or an uncertainity (not sure or clear).

• **Three judges** scored all **120 reports** for bizarreness after the reports had been transcribed and coded randomly to ensure unbiased scoring. Judges worked individually so **inter-rater reliability** could be determined.

Results

Judges – good inter-rater reliability = agreed about 80% of the time on both bizarreness and non-bizarre items.

Table 6.2 Mean density scores for dreams and fantasies.

Bizarreness density scores for dreams	Bizarreness density scores for fantasies
0.223	0.089

Williams, J. M., Rittenhouse, C., & Hobson, J.A. (1992) Bizarreness in Dreams and Fantasies: Implications for the Activation-Synthesis Hypothesis. Consciousness and Cognition, p.176.

• Bizarreness was more than twice as prevalent in dream reports than fantasy reports.
• Dreams scored higher than fantasies for: **plot discontinuity (greatest difference)**, plot incongruity, uncertainty, and thought incongruity.
• Bizarreness in dreams usually came from nearly all participants whereas bizarreness in fantasies came from only a few participants. • Dreams were always set in remote times or places (12/12 participants) while fantasies were far more often current in both time and place (6/12 participants).

Conclusions

- Findings support the activation-synthesis hypothesis which predicts a difference between REM sleep dreams and waking fantasies. This suggests that the bizarreness of dreams is the direct result of the brain activity which takes place during REM sleep.
- Dreams contain more bizarreness as well as other 'dreamy' features such as remoteness of time and place than fantasies.
- Dreams differ from fantasies in relation to the number of people involved/the remoteness of time/the remoteness of place.
- Dreams and fantasies are significantly different cognitive processes – shown by 88.7% of judges being able to distinguish between descriptions of each.

Evaluation-criticisms

- The sample was too small to generalise from and also ten of the twelve participants were female so the findings may also have been gender biased.
- The use of self-report method can be unreliable as it relies on people's memories, insight and ability to explain their experiences. The researchers could not be sure they were getting an accurate account of participants' dreams and fantasies.
- Lacks construct validity as qualitative data was turned into quantitative data and so the complexity of dreams and fantasises was lost when the content was analysed in terms of numbers.
- IV was difficult to control as there was no guarantee that dreams being described happened in REM sleep. Also, what were described as fantasises could actually have been more like dreams if they happened when participants were feeling drowsy.
- The differences between scores for dreams and fantasies may have more to do with how they were recorded by participants. For example, it is more likely that fantasies were recorded not long after they happened whereas dreams were recorded longer after the event. This means the details of dreams are more likely to be forgotten and that participants tried to make sense of them, making them appear more coherent than they really were.

Exam Paper (2019)

1 **(a)** Identify the stage of sleep where most dream activity takes place, according to the Activation Synthesis Theory.

A RAM

B REM

C ROM

D RTM

Your answer ☐ **[1]**

(b) Identify what the pons area of the brain does during sleep, according to the Activation Synthesis Theory.

A blocks signals

B redirects signals

C sends signals

D translates signals

Your answer ☐ **[1]**

(c) Identify which part of the brain tries to give meaning to the electrical activity of the brain during sleep, according to the Activation Synthesis Theory.

A brain stem

B cerebral cortex

C hypothalamus

D pineal gland

Your answer ☐ **[1]**

3 Give **two** functions of sleep.

1. .....

.....

2. .....

.....

[2]

4 There are a number of stages of sleep.

Look at the following diagram.

Draw lines to match the definition to its correct stage of sleep. One stage does not have a matching definition. **[3]**

Definition	**Stage of Sleep**
The stage before REM sleep when people are in a deep sleep.	Stage 1
The stage of light, drowsy sleep where people can be stirred quite easily.	Stage 2
The stage where people lose consciousness and brain waves begin to slow down.	Stage 3
	Stage 4

2 Explain how the Activation Synthesis Theory of Dreaming is criticised for being reductionist.

.....

.....

.....

..... **[2]**

5

A psychologist wanted to investigate the meaning of dreams. To do this, she carried out a study using a series of interviews in which she had conversations with people about their common dreams and their recent experiences. She concluded that what actually happened in dreams was a symbol of deeper emotions the person was feeling. For example, one of her participants, named David, often dreamt about walking around naked. The psychologist related this to an anxiety the person had about letting out a secret he had been trusted with.

Using the source:

(a) Name the type of interview used in the study.

..... **[1]**

(b) Identify the phrase that explains the manifest content of dreams.

..... **[1]**

(c) Identify the example of latent content in David's dreams.

..... **[1]**

(d) Write an open question that the psychologist could have used in her study.

.....

..... **[1]**

(e) Outline **one** strength of collecting qualitative data in this study.

.....

.....

.....

..... **[2]**

6 Describe **two** criticisms of the Williams et al. (1992) study into the bizarreness in dreams.

1. .....

.....

.....

.....

2. .....

.....

.....

.....

[4

7 Although Pawel works long hours, he finds it difficult to get to sleep at night as he suffers from sleep onset insomnia.

Using your knowledge of psychological research, outline ways in which Pawel could be helped to get a better night's sleep.

.....

.....

.....

.....

.....

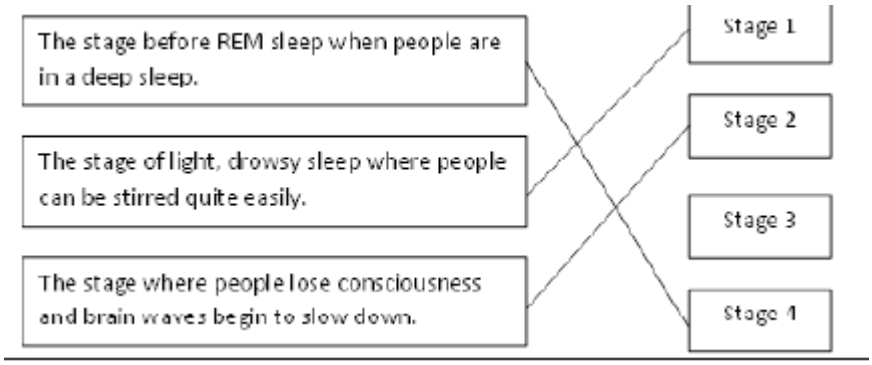
.....

.....

..... [4]

Mark scheme

QUESTION		ANSWER	MARKS	GUIDANCE
1	(a)	B – REM	1	
	(b)	C – sends signals	1	
	(c)	B – cerebral cortex	1	
2		1 mark for demonstrating understanding of the concept of reductionism. 1 mark for demonstrating how reductionism is a limitation in the context of the theory. e.g. 'Reductionism refers to the idea that something can be explained in simpler terms (1). The theory is too reductionist as dreams are so complex that they cannot just be attributed to the electrical signals in the brain (1).' It reduces dreams solely down to the result of a biological function (1). However, there is evidence to suggest that dreams are not as random as mere neuronal activity in the brain, they are often related to experiences from the day (1).	2	For full marks it must be clear that the criticism is related to the activation synthesis theory.
3		1 mark for each distinct function of sleep. Most likely answers will refer to healthy brain, physical repair, emotional stability, keeping us safe.	2	Do not credit functions that are interchangeable e.g. 'physical repair' and 'healing cells'. Allow examples that fall within these functions.
4		1 mark for each correctly drawn line as shown below;	3	Subtract 1 mark for each additional line drawn.



5	(a)	Unstructured (interview)	**1**	
	(b)	'What actually happened (in dreams)'	**1**	
	(c)	'His anxiety about letting out a secret'	**1**	Do not credit (his) anxiety alone
	(d)	1 mark for demonstrating an understanding how open questions are constructed (to investigate dreams), e.g. • Can you explain some of your reoccurring dreams? • What happened in your most recent dream? • What did you dream about last night?	**1**	Questions must be related to dreams or recent experiences. The questions can be related to the source. It must be a question, inviting a detailed/individual response.
	(e)	1 mark for a strength of using qualitative data e.g. higher (construct) validity, more detail/greater depth/richer. 1 mark for justifying the strength in relation to the study e.g. to understand the meaning of dreams she needed to be able to go into depth, dreams are unique experiences which cannot be quantified. It provides rich detailed data (1). This will be useful for analysing possible links between dreams and prior experiences (1).	**2**	
6		For each criticism; 1 mark for a brief or basic point. 2 marks for a more developed point clearly related to the study. <u>Examples of a 1 mark answer:</u> • the sample was not representative • sample was biased (gender/culture) • It may lack construct validity • Lack of control over IV • there may have been a problem with social desirability • difference in scores may have been down to variabilities in reporting techniques • the findings lack generalisability <u>Examples of a 2 mark answer:</u> • the sample may not have been representative (1) as only 12 participants were used (1) • the sample was biased (1) as all participants were biopsychology students (1). • the sample was gender biased (1) as there were more females than males/ 10 out of the 12 participants were female (1). • It was culturally biased (1) participants came from (Harvard university) America/an American university (1). • the findings may lack construct validity (1) as dreams and fantasies are too complex to be reduced down to a rating (1) • it may not have always been practical for participants to record their dreams and fantasies (1) leading to inaccuracies due to things like forgetting details of both (1)	**4**	Do not credit descriptive statements unless they are in the context of a criticism e.g. do not credit 'participants recorded dreams and fantasies in their own homes' but do credit 'participants may have been unable to distinguish between REM and non-REM sleep (1) because they recorded dreams and fantasies in their own homes (1)'.
7		Credit understanding and application of two or more ideas used to improve sleep/reduce insomnia i.e. relaxation techniques, changes to physical environment and sleep hygiene. 1 mark for the identification of one way to improve sleep from sleep hygiene, changes to the physical environment and relaxation techniques. 1 mark for an elaborated response going beyond the mere identification of this. For example, Pawel could use relaxation techniques to fall asleep (1) for example deep breathing and relaxing his muscles (1). Sleep hygiene can also help him to fall asleep (1), he should avoid consuming alcohol or nicotine before sleeping (1).	**4**	Physical environment: no computer / mobile phone use, no light, temperature. Sleep hygiene: alcohol, coffee, nicotine, large meals, taking naps, exercise, sufficient daylight, taking sleeping pills. Relaxation techniques: breathing, muscle relaxation, yoga, clearing the mind, writing down your worries. Context is implicit by giving the appropriate response.

HOMEWORKS

Homework	Due Date
1: Sleep Hygiene - Create an informative leaflet, advising students on how to improve their sleep hygiene.	
2: Design a study: Complete all the 'design a study' questions. You will need to use research methods resources to help with this.	
3: Summarise the 2 theories of dreaming	
4: Essay: Complete the essay question. The plan is optional.	

Homework 1: Sleep hygiene **Date due:**

Create an informative leaflet, advising students on how to improve their sleep hygiene. You should include information on what they should/shouldn't do before bed and during the day and ways of improving the sleeping environment.

There must be at least 10 pieces of advice, based on research. Use images to help illustrate each point.

Use information online and from your knowledge organiser to do this.

Plan on this page and you can either complete your finished product on the next page, A3 paper or digitally.

Homework 2: Design a study

You have been asked to carry out an experiment to see people have a better night's sleep after completing relaxation techniques before bed.

Plan your investigation here:

1) Describe the experimental design you will use.

_____

_____

_____

_____ **[2]**

2) Explain one weakness of your choice.

_____

_____

_____

_____**[2]**

3) **(a)** State the dependent variable for your investigation.

Dependent variable.

_____ **[1]**

(b) Explain how you will measure your dependent variable in your investigation.

_____

_____

_____

_____**[2]**

4) Give one extraneous variable you will control in your study

_____**[1]**

5) Explain how you would control the extraneous variable you have identified in **Q4.**

_____

_____

_____

_____**[2]**

6) Outline the procedure you will use in your study

_____

_____

_____

_____

_____

_____

_____

_____ **[4]**

4) State an alternative hypothesis for your investigation

_____

_____

_____

_____**[2]**

5) Describe one way you will deal with ethical issues in your study

_____

_____

_____

_____ **[2]**

Homework 3: Theories of dreaming comparison

Due:

Complete the table, to compare the 2 theories of dreaming:

	The Freudian Theory of Dreaming	**The Activation-Synthesis Theory of dreaming**
Names of researchers:		
Summary of the theory:		
Is the theory reductionist or holistic? **Explain why.**		
Is they theory objective or subjective? **Explain why.**		

Does this theory suggest that dreams mean something? **Explain why.**		
What are the criticisms of this theory?		
Image to represent each theory		

Homework 4: Essay writing

Due:

Use your knowledge and understanding from across the psychology course to explain how far you agree with the following viewpoint:

"Qualitative data is much more useful in psychological investigations than quantitative data."

In your answer, refer to Freud's (1918) study of the Wolfman and **at least one** other study from a different area of psychology you have studied **[13]**

AO1: Outline of the debate/issue being discussed	
AO1: Description of Theory/research study named in the question	
AO3: Evaluation Point Explain in context Therefore/this means… (link back to the question)	
AO1: Description of Theory/research study from a different area of psychology	
AO3: Evaluation Point Explain in context Therefore/this means… (link back to the question)	
Conclusion: Make a reasoned judgement based on the arguments you have presented in your answer. Refer back to the question.	

Use your knowledge and understanding from across the psychology course to explain how far you agree with the following viewpoint:

"Qualitative data is much more useful in psychological investigations than quantitative data."

In your answer, refer to Freud's (1918) study of the Wolfman and **at least one** other study from a different area of psychology you have studied **[13]**

Extra space:

Total mark	/13

AO1 mark	AO3 mark
/6	/7

Whole Class Feedback: