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EXAM NOTES

The Complete Study and Revision Notes

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Topic 3 Attachment

** A-level only

*** Mainly A-level apart from the following information, which applies to both AS and A-level: Introduction to statistical testing; the sign test. When to use the sign test; calculation of the sign test.

Topic 3

Attachment

AQA specification for Topic 3: Attachment (AS and A-level)

- Animal studies of attachment: Lorenz and Harlow.
- Explanations of attachment: learning theory and Bowlby's monotropic theory. The concepts of a critical period and an internal working model.
- Ainsworth's 'Strange Situation'. Types of attachment: secure, insecure-avoidant and insecure-resistant. Cultural variations in attachment, including van Ijzendoorn.
- Bowlby's theory of maternal deprivation. Effects of institutionalisation, including the English and Romanian Adoptees project.
- The influence of early attachment on childhood and adult relationships, including the role of an internal working model.

Animal Studies of Attachment

AQA specification for Topic 3: Attachment

- Animal studies of attachment: Lorenz and Harlow.

Introduction

Much earlier research into attachment was conducted with animals, based on the assumption that what is true for animals is also true for humans. Studying animals in the wild and in captivity might deepen our understanding to help develop theories and ideas on how attachments are developed and maintained. In fact, John Bowlby, the most eminent psychologist in this area, was influenced by such animal studies in forming his theory of monotropy (see Exam Notes 6) and maternal deprivation (see exam Exam Notes 9), which explain the effects of disrupting attachment bonds. Two of the most well-known animal studies were conducted by Konrad Lorenz and Harry Harlow.

AN 'EYE' ON THE STUDY

Imprinting
(Konrad Lorenz, 1935)

- Konrad Lorenz (1935) was a biologist who was interested in animal behaviour. He is best known for his discovery of attachment in animals, specifically, a certain type of attachment called imprinting. Konrad observed that when animals that are mobile from birth (like geese and ducks) are born, they will bond with the first moving object they see, known as **imprinting**. He carried out a famous study to investigate this further.

Aim

- To investigate attachment imprinting behaviour in newborn goslings.

Procedure

1. Lorenz (1935) randomly split a clutch of 12 greylag goose eggs into two batches. One batch of eggs was hatched by the mother goose in their natural environment (control group), the other batch was hatched in an incubator, with Lorenz making sure that he was the first moving object the goslings encountered (experimental group).
2. Lorenz next marked the goslings so that he knew whether they had hatched naturally or in the incubator. He then mixed the goslings up by placing them under an upturned box. The box was then removed, and the goslings' behaviour was recorded.

Findings and conclusion

- Immediately after birth, the naturally hatched baby goslings followed their mother about, whilst the incubator-hatched goslings followed Lorenz.
- When released from the upturned box, the naturally hatched goslings went straight to their mother whereas the incubator-hatched goslings went straight to Lorenz (showing no bond to their natural mother).
- Lorenz identified a **critical period** in which imprinting needs to take place: a short period of time after birth, between four and 25 hours. If imprinting did not occur within that time, the chicks did not attach themselves to the mother figure.
- These bonds proved to be **irreversible** (the naturally hatched goslings would only follow their mother, and the incubator-hatched goslings would only follow Lorenz).

Sexual imprinting

- Through further experiments, Lorenz attempted to learn about what he called **sexual imprinting**. This is when an animal starts developing a sexual preference (i.e. choice of mate) based on the species they have imprinted on, than on than their own species. In a case study, Lorenz (1952) describes a peacock that had been reared in the reptile house of a zoo, where the first moving object the peacock saw after hatching was a giant tortoise. An adult, this bird would only direct courtship behaviour towards the tortoises. Lorenz concluded that this meant the peacock had undergone sexual imprinting.

What have we learnt from these animal studies of attachment?

- The fact that imprinting must take place very quickly, as soon as animals are born, suggests that attachment has a critical time frame, otherwise attachments may not occur. Also, the importance of instinctively returning to the imprinted moving object would suggest that attachments are biologically programmed (part of genetic make-up). This is because such behaviour would increase the animal's chances of survival (food and protection from predators by the mother) at a vulnerable time of their lives.
- Imprinting also is important as it provides the ability for animals to recognise members of their own species, and learn life skills and specific behaviours (e.g. how to be a duck). This ensures that when it comes to mating, sexual behaviour is directed towards other animals of the same species. Therefore, imprinting is important for the survival of the species.
- The implication of attachment studies in animals is that formation of early attachments in humans is important for their social and cognitive development Also, the importance of forming attachments and the type of attachment you experience as a child may to some extent predict future bonds.

AN 'EYE' ON THE STUDY

Importance of contact comfort
(Harlow, 1958)

- The importance of early attachments can be learnt by studying monkeys. Harry Harlow carried out animal research and investigated attachment behaviour in rhesus monkeys in order to expand our understanding of attachment. Below, we have described a famous study he carried out.

Aim

- Harlow wanted to investigate whether feeding or comfort was important in the development of attachment.

Procedure

- Harlow created two wire-frame surrogate mothers, each with a different head. One wire mother was wrapped in soft cloth ('towelling mother'), and the other wire mother was left bare without any cloth, just the wire showing ('harsh wire mother'). Harlow used 16 infant rhesus monkeys, eight in each condition, and in both conditions both "mothers" were present:
  - In the first condition, the harsh-wire mother had a milk bottle for feeding, the towelling mother did not.
  - In the second condition, the towelling mother had a milk bottle for feeding, the harsh-wire mother did not.
- The amount of time each infant spent with the two different 'mothers' was recorded. The monkeys were also frightened with loud noises to test for mother preference during times of stress. The researchers also observed the infants' responses when frightened (e.g. by mechanical noise-making teddy bear).

- Harlow and colleagues also continued to study the monkeys who had been deprived of a 'real' mother into adulthood.

Findings

- All eight monkeys in each condition spent most of their time with the cloth-covered mother whether or not this mother had the feeding bottle. Those monkeys who fed on the wire mother only spent a short amount of time getting milk and then returned to the cloth-covered mother.
- When frightened, all monkeys clung to the cloth-covered mother rather than the wire mother. When playing with new objects, the monkeys often kept one foot on the cloth-covered mother for reassurance.

Conclusions

- *Food or comfort?* The findings suggest that infants do not develop an attachment to the person who feeds them but to the person offering them comfort.
- *Maternally deprived monkey in adulthood.* As the monkeys grew up, the effects of their early rearing continued. The monkeys exposed to the wire mothers developed more severe problems. The monkeys reared with wire mothers only were the most dysfunctional. Both wire and cloth-reared monkeys were socially abnormal; they were more aggressive and less sociable (they froze or fled when approached by other monkeys). They also did not display normal mating behaviour and did not cradle their own babies (even killing their infants in some cases).
- *The critical period for normal development*. Harlow also concluded that there was a critical period for this behaviour (like Lorenz). A mother figure had to be introduced to an infant monkey within 90 days for an attachment to form. After this time attachment was impossible and the damage done by early deprivation became irreversible.

What have we learnt from these animal studies of attachment?

- The preference of the infant rhesus monkeys to seek comfort rather than food would suggest that food is not as crucial as comfort when forming a bond. This suggests that attachment development is driven by providing emotional security more than food.
- Isolated monkeys displayed long-term dysfunctional behaviour. This suggests that early poor attachment experiences can predict long-term social development. The implication of animal studies in attachment theory is that poor attachment experiences in infancy may have permanent effects on social development later in life.

◆ Evaluation

Lorenz's study

Strengths

✔ **Deepen our attachment to human behaviour.** A strength of animal studies such as those by Lorenz, is that the findings have been influential in the field of developmental psychology. For example, the fact that imprinting is seen to be irreversible (as suggested in Lorenz's study), shows that attachment formation is under biological control and happens within a specific time frame. This is a strength because it led the developmental psychologist Bowlby to develop his attachment theory, which suggested that the attachment formation is an innate biological process that must take place during a critical period. Such theories have been highly influential in the way childcare and parenting is administered today.

✔ **Supporting evidence for imprinting.** A strength of Lorenz's study is that there is research evidence to support imprinting. Guiton (1966) demonstrated that leghorn chickens which were exposed to yellow rubber gloves for feeding during the first few weeks, subsequently imprinted on the gloves. This is a strength because it supports the view that young animals are not born with a predisposition to imprint on a specific type of object, but probably on any moving things that are present during the critical window of development. However, Guiton also observed that the chickens eventually learned through experience to prefer other chickens over yellow rubber gloves. As a result, this study strengthens the overall validity of Lorenz's research into imprinting, however, the impact of imprinting on mating behaviour may not be as permanent as Lorenz believed.

Harlow's study

Strength

✔ **Controlled experiment.** A strength of Harlow's study is that it was conducted in a controlled, laboratory setting. Harlow was able to control potential extraneous variables such as the monkeys being taken away from their mothers straight after birth and the infant monkeys not being exposed to any love or attention from their biological mothers. This is a strength because it means that Harlow was measuring what he intended to measure (i.e. factors that can affect the formation of attachment) and therefore, the study can be seen to have high internal validity allowing a cause-and-effect relationship to be established.

✔ **Practical value.** A strength of Harlow's (1959) research into attachment is that there is a great deal of practical application from its findings. For example, Howe (1998) reported that Harlow's research has helped social workers understand risk factors in child neglect and abuse and so intervene to prevent this happening. In addition, Harlow's research has influenced the care of captive monkeys; we now understand the importance of proper attachment figures for baby monkeys in zoos and also breeding programmes in the wild. This is a strength because it demonstrates how Harlow's research has influenced society. As a result, this increases the relevance of Harlow's research into the importance of comfort in attachment.

✔ **Humans and monkeys are similar.** A strength of Harlow's study is that it may be possible to generalise the findings to humans, unlike the Lorenz study. For example, Green (1994) stated that, on a biological level, all mammals (including rhesus monkeys) have the same brain structure as humans; the only differences relate to size and the number of connections. As a consequence, we may be able to extrapolate the findings from Harlow's research into attachments to humans.

Weaknesses

✘ **Lacks internal validity.** A criticism of Harlow's research is the lack of control of the two 'mothers'. The two wire-mothers varied in more ways than just being cloth-covered or not, as they also had different heads. Therefore, it could be that the infant monkeys preferred the cloth-covered monkey as it was more attractive. The two different heads could have acted as a confounding variable, suggesting that Harlow's research may have lacked internal validity.

✘ **Generalisability to humans.** A weakness of Lorenz's research into imprinting is that we cannot generalise his findings about imprinting to humans. This is because Lorenz conducted his study on greylag geese and humans and geese are physiologically different. The way a human infant develops an attachment with their primary caregiver could be very different to the way a greylag goose forms an attachment. For example, mammalian mothers show more emotional attachment to their young than birds and mammals may be able to form attachments at any time. As a consequence, we cannot extrapolate the findings from Lorenz's research to humans and thus, this casts doubt over the explanatory power of Lorenz's research on human attachment.

✘ **Artificial study.** A weakness of Harlow's study is that it was conducted in a controlled, artificial laboratory setting. The highly controlled laboratory setting was not reflective of real-life situations and may have caused the monkeys to behave in an artificial manner. This is a weakness because it means that Harlow wasn't necessarily measuring the real-life attachment formation and therefore the study can be criticised for lacking ecological validity.

✘ **Ethical issues.** A criticism of Harlow's study is that it has been accused of being unethical. The monkeys in Harlow's study showed great distress when they were removed from their biological mothers. In addition, after the study, these monkeys suffered lasting emotional harm, had difficulty forming relationships, showed distress in social situations and were unable to communicate with other monkeys, as well as neglecting their own offspring. However, some psychologists argue that the experiment can be justified in terms of the significant effect it had on our understanding of attachment. This suggests that the benefits of some animal research may outweigh the costs. However, others argue the study doesn't really tell us anything about the formation of human attachments (monkeys and humans are physiologically different). Therefore, psychologists would argue that the lack of generalisability from this research makes Harlow's study even more unethical.

Practice exam questions

1. Describe the findings and procedure of one animal study of attachment. **[6 marks]**
2. Describe Lorenz's animal studies of attachment. Refer in your answer to what he did and what he found. **[6 marks]**
3. Briefly evaluate Lorenz's animal studies of attachment. **[4 marks]**
4. Describe Harlow's animal studies of attachment. Refer in your answer to what he did and what he found. **[6 marks]**
5. Briefly evaluate Harlow's animal studies of attachment. **[4 marks]**
6. Describe and evaluate two animal studies of attachment. **[12 marks AS, 16 marks A-level]**