

The extent to which
animals and humans
have an innate
predisposition to
learning ...



Animals and humans both have an innate predisposition to learning. This is shown with animals like snakes who are not “reared” by their parents but still know how to hunt. However some behaviours must be learned, this is the cognitive view. The biological view believes there is prepared, unprepared and contraprepared learning. All this will be explained below. Konrad Lorenz who was an ethologist found that hatchlings, he worked with young geese; follow the first moving object they see after birth. He called this imprinting.

Imprinting applies to animals, mainly birds but also humans. Lorenz conducted a famous experiment to prove that imprinting was permanent and it happened during a critical period. A critical period means that the learning must take place during a set time or not at all. For the experiment Lorenz took a clutch of eggs before they were due to hatch, he left half with the goose mother and kept the other half with him. When they hatched he kept the ones who were separated from the mother with him and left the others with the goose mother.

All the hatchlings were then put together in a box and allowed to mix, when they were removed from this box they separated to their respective guardians. Lorenz believed that the developments learned during the critical period were irreversible and long-lasting. The consequences are split up into short term and long term points. In the short term this bonding is necessary for food and safety and in the long term it produces a template for reproductive patterns. However there are problems with this concept.

The idea of a critical period, has been criticized as it is better described as a sensitive period. This is because learning can occur outside the time period. The assumption that imprinting is irreversible has been criticized as an experiment was done by Guiton proving that learned behaviors during the sensitive period are reversible. Imprinting can be applied to humans. Just as with animals, it has become clear that infants become attached to their mothers, and mothers to their infants, not so much through learning as by instinct.

They are innately programmed to do so from birth; this is the most basic of many such direct expressions of the genetic heritage of our species. Critical periods or more accurately sensitive periods occur in human learning.

Lenneberg's theory is that the sensitive period for language development is the years leading up to puberty (10-11yrs). Lenneberg believes that whilst the brain is developing it does not specialize therefore children who lose their language ability can relearn it. This is because other, non damaged, parts of the brain take over.

This is different for adults or those who suffer brain damage after puberty. The left hemisphere of the brain is usually " set" for language therefore if the left hemisphere is damaged then the right side of the brain which is specialized in another area will not be able to take over. This has been criticized because it uses the term critical learning period not sensitive period. Another point that is criticized is that specialization happens at puberty. Several researchers believe that localization/specialization occurs at birth.

There are studies that prove that the first ten years or so may not be important therefore this disproves the idea of a critical period. The main case study that helps disprove Lenneberg's theory is the case of Genie. Curtiss did a case study on an extremely deprived child called Genie. Genie was born in the USA in 1957 but she was not "found" until 1977. Genie's case helps prove the idea of a sensitive period. She was found at the age of 13 yrs and 7 months however she appeared around 6 years old as she was extremely thin.

This was because from the age of 20 months she was confined to extreme small room and also under physical restraint. She received minimal care. She was fed only infant food. She was abused by her father who would beat her for making any noise therefore when she was found she had learned to suppress all vocalizations except a whimper. When she was found she could not stand erect or walk without shuffling her feet. She learned her first language at 13 1/2 therefore found this very difficult however if Lenneberg's theory had been correct then she would not have been able to learn a language at all.

The fact she was able to manage to learn any language disproves the idea of a critical period however her language was very basic and it took her a long time to learn it therefore proving the idea of a sensitive period. The fact that this is a case study not an experiment makes the ethical guidelines not apply. The methodology used to find out information for this case study was; interviews with both parents and when Genie could communicate her as well, watching the development of Genie, observations, assessments, and a look at the area Genie was confined to understand her case.

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A case study is useful because it allows for a great in-depth into a case, it is ecologically valid, it avoids confounding variables found in experiments and avoids experimenter bias, However case studies are not useful because interpretation is in the hand of the researcher, it is not easy to generalize to other cases (this is especially valid in Genie's case) and it is extremely time consuming and needs a lot of expertise. There are other factors that detract from both the critical and sensitive theories, the biological objective; this may have affected Genie as she had a lack of nutrition.

Another concept is biological preparedness. This was developed by Martin Seligman in the 1970's. Preparedness is the extent to which physiological structure influences the occurrences of behaviour. There are three types of behaviour, prepared behaviours, unprepared behaviours and contra prepared behaviours. Prepared behaviours are those that require very little experience e. g. species specific behaviour. Unprepared behaviours must be acquired through experience e. g. cooking. Contra prepared behaviours are behaviours that are difficult to acquire .

Behaviorists believe in the equipotentiality premise which means that the principles of conditioning apply equally to all species. Food avoidance is learned very quickly therefore is like a prepared behavior although it is not. Garcia et al. studies the effect of exposure to x-ray. Any rat that becomes sick after eating then being exposed subsequently avoided the food. Garcia called this bait shyness. This led to the conclusion that in most species getting sick is associated with the last food eaten.

Garcia believed this was a form of prepared behaviour to stop animals eating harmful food. Phobias work like bait shyness. The majority of phobias are of things that may be harmful/ were harmful. This shows that phobias are not normal classical conditioning but prepared classical conditioning. Animals and humans therefore are predispositioned to fear certain things as shown by Seligman and Garcia. However Ethologists and Behaviorists disagree with this. By exploring biological aspects behaviorists make their argument more convincing not less.