UNIT-2 Overview of Attachment in Childhood (I)

Learning Outcomes

By the end of this unit the learner will be able to:

- ✓ Explain what Attachment is
- ✓ Identify the kinds of Attachment Theories and Evolution
- ✓ Analyze the Harlow's Studies of Monkeys and Attachments

Unit 2
Overview of Attachment in Childhood (I)

What is Attachment?

The First Attachment Theory of Psychologist John Bowlby, defines attachment as a "lasting psychological attachment between human beings" (Bowlby, 1969, p. 194). Bowlby strongly believed that the earliest bonds formed by children with their caregivers have a remarkable impact on them that continues throughout life. This form of attachment is also a natural process that drives the infant to remain closer to her caregivers, which improves the child's chances of survival.

The foundational ideas of the Attachment Theory is based on the mother's role in establishing a sense of security in the children. Children successfully develop this sense of security only when their caregivers provide available and responsive care to their needs. This way the child can trust the caregiver's dependability and can treat the caregiver like a secure base, from which the child can then comfortably explore the world.

The Components of Attachment

According to Bowlby, there are four key components of attachment:

- **Safe Haven**: The child needs to know that when she feels threatened or afraid, she can return to the caregiver for comfort and soothing. As this comfort is repeatedly given, the child begins to safely assume that it will unconditionally remain with her;

- **Secure Base**: In a similar fashion, the healthy infant will feel secure in her caregiver's presence. Although there is only a slight difference between safety and security, it is a very important one. A child feels safe around a caregiver when she trusts that the caregiver can protect her against any external threats. The child feels secure when the caregiver responds appropriately to her needs. Whereas safety is a prerequisite for security, security is not a prerequisite for safety because a child can distrust her caregiver but fully believe that the caregiver can protect her in a dangerous situation;

- **Proximity Maintenance**: The child strives to stay near the caregiver in order to stay safe and secure; and

- **Separation Distress**: When separated from the caregiver, the child becomes upset and distressed. Additionally, when the child and caregiver are reunited, the child expresses happiness and relief.

A child's primary attachment to the caregiver is considered a *prototype* for all her future attachments and relationships. In other words, if a child's develops weak, insecure, and unhealthy bonds with the primary

caregiver, then, she is likely to experience relationship problems later in life.

In 1981, the psychologist Michael Rutter, explained the difference between privation and what Erikson considered deprivation. Whereas, deprivation refers to losing or damaging an existing attachment, Rutter defines privation as failing to form an attachment at all. In other words, thinking of deprivation as a child losing something that she once had and privation as the child never having that thing to begin with. Rutter claimed that privation commonly leads to:

- An initial phase involving behaviours that overcompensate for this absence, such as clinging and dependency;
- The next stage is characterized by attention seeking and indiscriminate friendliness or hyper socialization, where the child exudes happiness towards everyone, including strangers; and
- In the last phase, the child demonstrates a lack of guilt, an ability to follow basic rules, and an inability to form long-lasting relationships.

A full understanding of this process includes knowledge of socialisation and child psychopathology. Socialisation refers to the processes that gradually transform a child into a social being, such as learning rules, acting out social roles, interacting with others, speaking in an understandable language, and expressing oneself using appropriate body language. Child psychopathology, on the other hand, refers to the problems and obstacles that typically affect a child's ongoing development.

Evidence of Attachment

In 1990, researchers Grossman and Grossman observed that children get upset when separated from their main caregivers as early as 7 months old. This extreme reaction is indicative of the attachment bonds forming.

The formation of these attachments begins during pregnancy. The process of *bonding*, forming relationships with other individuals, and *attachment* is a two-way emotional bond, which began in the womb. Although it's hard to study these processes, at such an early stage, wrapping your head around this concept and provide a deeper understand of the consequences of a deteriorating attachment.

Bowlby's Attachment Theory

John Bowlby

Although we've briefly mentioned some of his work, let's go into greater detail about the psychoanalyst John Bowlby, a pioneer of child psychology who closely followed the work of Freud. Just like Freud, Bowlby believed that the most critical years in a child's development, which can determine how she functions for the rest of her life, are those first few years.

As an infant, Bowlby's mother was absent during the day and he was usually taken care of by a nanny. At seven, he was sent to a boarding school. These experiences left a personal impact and motivated his pursuit of discovering the truth about the importance of childhood relationships.

A Timeline of Bowlby's Attachment Theory

Bowlby developed his Theory of Attachment in a series of stages. His *Maternal Deprivation Hypothesis,* which formed the foundation of what most students learn today, was published in 1951.

- ***1946: Forty-four juvenile thieves***
  - ✓ Bowlby studied a group of juvenile thieves at a child guidance clinic in London.
  - ✓ He explored their background and living situations to identify some underlying pattern between their early attachments and their future delinquent behaviour.

- ***1950: WHO Commission***
  - ✓ The World Health Organisation asked Bowlby to study the consequences of childhood deprivation
  - ✓ The children Bowlby observed had either lost their parents in World War II, were in a hospital, or were in a special care unit
  - ✓ Bowlby examined these children in the context of the limited scientific literature available at the time, such as the findings of Spitz (1946) and Goldfarb (1943 & 1945).

- ***1951: Maternal Deprivation Hypothesis***
  - ✓ Bowlby published his report on the Maternal Deprivation Hypothesis.
  - ✓ He also published a shorter version of the report into a book that appeals to common, rather than strictly academic, audiences. The book sold over 500,000 copies.

- ***1952: Film collaboration with James Robertson***
  - ✓ With the help of a psychology student, named James Robertson, Bowlby produced a short film entitled, A Two Year Old goes to the Hospital

- ***1957: Evolutionary basis of attachment (and social releasers)***
  - ✓ Bowlby built on his attachment theory using various ethological theories (e.g. Lorenz), and looked at developmental and cognitive psychology perspectives
  - ✓ Bowlby also applied the ideas of evolutionary theory to explain the use of social releasers in human infants

- ***1969: Internal Working Models***
  - ✓ Bowlby's researched indicated that the reason a child's initial attachment is so powerful is because she develops a mental representation of this primary attachment, which forms the basis and prototype for all future relationships.

The Consequences of Bowlby's Work

Although Bowlby's research greatly influenced how people approach the psychology of a child's

development, his work, theories, and hypotheses have had real-life applications in a number of areas, including:

- Widespread changes in the institutional care provided for infants and children. Before Bowlby, typical care homes strictly focused on keeping all children well - fed, well - washed, and well - clothed. However, Bowlby's work demonstrated the importance of ensuring the mental well-being of these children was of equal importance, so they started to concentrate on the quality of children's interactions with the nursing staff.

- The length of time that hospitals allow parents to visit their children. In the past, practitioners believed that when long-term patients were visited by their parents for long periods of time, the children would become upset. Consequently, hospitals discouraged these parents from visiting more than a particular amount of time. After Bowlby's work showing the importance of primary attachments, hospitals encourage parents to spend as much time as possible with their children while they stay in the hospital.

- The government adapted Bowlby's works and hypotheses for political purposes. They invented marketing campaigns that encouraged women to stay at home and look after their children rather than going out to work and, as a result, leaving children in day care.

Evolutionary Theory

Evolutionary Psychology is an independent branch of psychology based upon the knowledge and principles of biological evolution. One fundamental principle of evolutionary psychology is that the defining characteristics of a culture change over time due to changes produced at a genetic level. Humans rely on sexual reproduction (rather than asexual reproduction) because the two parents' combination of genes mutate and recombine in distinct ways that can never be reproduced. As the genes pass from *gene*ration to generation, the collective degree of mutations and adaptations helps the group of organisms survive. This process of ongoing genetic adaptation is the known as evolution.

According to Darwin's Theory of Natural Selection, which was published in 1859, these adaptive traits are necessary for organisms to overcome the challenges of their particular environment. Thus, although evolutionary psychology is mainly focused on nature and natural processes, it appreciates the importance of a given environment, especially in relation to how that particular environment will influence an organism's genes. Bowlby used these concepts to devise his Attachment Theory.

You can easily witness the consequences of these evolutionary adaptations by simply noticing the current characteristics of various animals. Take, for example, the giraffe's long neck. The ancestors of the modern giraffe did not all have long necks. In fact, this trait developed over time as the giraffes, who had longer necks, could survive more easily due to the higher number of leaves they could eat. As the ones with shorter necks died more often, their genes failed to reach the next generation. As a result, the specific alleles, which are the distinct versions of any particular gene that coded for long necks slowly, disappeared, leaving only long-necked alleles, and long-necked giraffes. Keep in mind that this is a gradual, but constant process. As more and more giraffes with long necks survived and fewer with short necks survived, the number of giraffes with long necks increased and eventually overwhelmed the short-neck population.

In a similar fashion, Evolutionary Psychology studies the evolution of a human's characteristics and behaviours. Since these must have been evolutionary superior and survived through *natural selection*, they must help the organism survive in some way.
Here are a couple of examples illustrating this point:

Human characteristic	**Explanation to why the behaviour has evolved**
Infants display a *rooting reflex* in the first few hours after birth. If its cheek is brushed a nipple or teat, the baby will turn its head to suck the milk	Without this instinct, a baby lacks the necessary responses to signals relating to when food is available. Consequently, she will be less likely to survive
Human children, like the young of other mammals, display curious and playful behaviours	Curiosity helps children learn about many different environments and people. The more curious a child is, the quicker she will learn what is safe and acceptable.

Humans and other higher mammals have a strong innate need to form attachments	As a vulnerable child, forming these attachments and staying close to the primary caregiver provides constant protection and supervision. These children will be directed away from dangerous situations and protected in the case that one should arise.

The premise of evolutionary psychology is that these characteristics are *innate*, present within the child prior to any learning, which means the only way a child could possess these abilities is if they were inherited biologically. For this to be true, evolutionary psychology argues that these behaviours must have maximized their probability of living into adulthood and producing their own children.

Another one of Bowlby's significant interests was *Ethnology*, the study of how animals behave in their particular environments. He applied the conclusions of ethological studies to his studies of child psychology.

Maternal Deprivation Hypothesis

Through research, Bowlby concluded that children, who were deprived of their mother or their primary attachment figure, would experience relationship-related difficulties, as well as, social, emotional, and intellectual problems later in life. He called this the **Maternal Deprivation Hypothesis**. Bowlby used the word maternal because mothers are typically the primary caregivers. He also acknowledged that children could form this prototypical bond with another figure besides the mother, but the theory assumes that the mother is the primary caregiver, as she usually is.

Bowlby devised the term "**monotropy"** to describe how a child depended on this warm, loving relationship more than anything else. During the first 18-24 months of life, if anything causes the mother-child bond to break or become damaged prematurely, a child could experience a severe lagging in their *socialisation*. These deprived children might fail to learn the rules of society, how to interact with others, or the subtle social cues of spoken language and body language.

The critical role of the mother is to teach her child all of the appropriate reactions and social niceties that people expect.
Without this bond and instruction, Bowlby indicated two major consequences for the child:

1. **Affectionless Psychopathy:** The inability to experience guilt or any deep feelings for others. This problem typically leads a child to delinquency.
2. **Developmental Retardation: Bowlby** argues that without this strong bond, a child will suffer from low intelligence and improper, slowed development in every area.

Other psychologists have criticized Bowlby's hypothesis by saying that he does not clearly distinguish

between the effects of deprivation and privation for the maternal bond. As discussed before, privation is when the bond never forms and deprivation and when the bond forms but is later broken or lost completely. Since privation most likely has more serious implications than deprivation, psychologists believe separate consequences must exist for these two cases.

Social Releasers

Because deprivation necessitates the loss of the primary caregiver, a deprived child typically experiences separation anxiety. This anxious response is really an infant's evolutionary trigger designed to bring the mother back. Innate, instinctive responses like this are called social releasers. Just as numerous other species have their own peculiar releasers, human have a special set:

1. **Sucking—**The infant, placing something in her mouth and sucking on it, provides both comfort and reduced levels of stress in the infant
2. **Cuddling—**Infants will commonly cling to their mothers, which greatly enhances attachment
3. **Looking—**Studies have shown that infants look at their mother to provoke some kind of loving reaction. The research indicates that when an infant looks at her mother and the mother maintains a totally neutral face, the infant's level of distress gradually increases.
4. **Smiling—**In a similar fashion, infants will smile in order to provoke a loving response from their caregivers
5. **Crying—**Infants automatically cry when in pain or when they need help.

Since children use these social releasers to provoke some response in the mother, psychologists believe that mothers must also have an instinctual knowledge of how to respond to these signals. Remember that social releasers occur due to a child's feelings of maternal deprivation. The infant uses these releasers as a way to reunite with the mother.

Internal Working Models

The last component of Bowlby's theory explains the *Internal Working Models,* which infants develop. Over time, infants create a mental model of their attachment relationship with their primary caregiver. Since this is, as we've said before, the prototype for all future relationships, the quality of this initial attachment has lifelong consequences.

Bowlby claims, albeit controversially, that this primary relationship greatly affects the child's capacity to succeed as a parent. When a child internalises a positive, healthy working model of attachment, she will normally bring those qualities to a future relationship. Psychologists would expect her to provide the same positive model to her children. If, however, the child internalised a negative working model based on neglect or abuse, she is just as likely to perpetuate those bad behaviours. She is unlikely, as an adult, to provide a positive model to her own children.

Psychologists dispute this claim because not everyone has an ideal upbringing. So, according to Bowlby, everyone without the perfect model of parenting should give their children a negative model. Since this doesn't happen, the idea of causality between having good parents and later being a good parent is not clear.

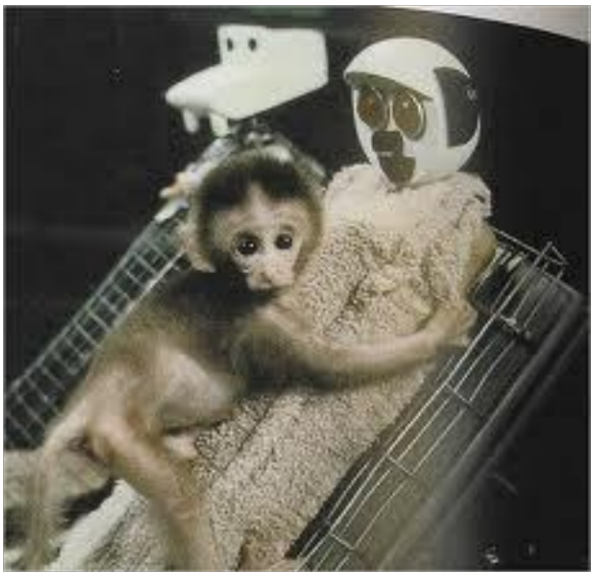
Evidence for the Importance of Attachments

Bowlby also proposed, that the attachment a child forms with the primary caregiver determines, to a large extent, the way in which they will form an attachment with their own children. In 1993, researchers Fonagy, et al. demonstrated the truth of this claim. They assessed pregnant women's Internal Working Models using and adult attachment interview (AAI) questionnaire. The answer to this list of questions measures how securely attached these pregnant women were to their babies at 12 - and - 18 months of age. The researchers found that the pregnant women, who reported insecure attachments to their own mothers, had the least secure attachments to their own babies.

Additionally, Bowlby's Attachment Theory builds upon the work of many other psychologists. The following sections discuss the experiments and findings of the researchers Harlow, Goldfarb, Spitz, and Robertson. The conclusions provide evidence for the importance of attachments. They also show how other people influenced Bowlby's theory.

Harlow's Studies of Monkeys and Attachments

Harry Harlow, an American psychologist, performed various experiments on Rhesus monkeys during the 1950s and 1960s. His series of experiments took newly born monkeys and testing the impact of material-separation and social isolation on their later behaviour. His primary aim was to discover whether tangible (tactile) affection played an important role in social and cognitive development.



Harlow and Harlow (1969): In this experiment, researchers separated eight Rhesus monkeys from their

biological mothers within 12 hours of birth. Experimenters set up two cages, each containing a surrogate 'mother' that provided milk. These surrogates had the same faces depicted above, but one was made of wire mesh and the other had a fur towel wrapped around. In the 165 days these monkeys spent with their two surrogate mothers, their preference for the fur towel mother was obvious. In fact, this preference was so strong that these Rhesus monkeys would cling to the fur towel mother even when the wire mesh one provided milk. Researchers concluded that baby monkeys need comfort just as much, if not more, than food. This conclusion extends to humans, also. Babies deeply desire being held by their parents or simply being as close as possible to them.

Harlow and Harlow (1969): In another study, Harlow and Harlow specifically tested only the monkey that had received milk from the wire 'mother.' They placed a mechanical teddy bear in their cages and observed what happened when the toy bear started marching up and down their cages and beating a toy drum. Initially, the monkeys were frightened by the foreign bear and ran to cling to the cloth mother. After a while, they became curious about the bear and left their mother to investigate the toy. Researchers took this behaviour as a sign that the monkeys, once they had received reassurance and comfort from their mothers, felt secure in exploring the world. Bowlby used this study as evidence for his belief in the secure base and safe haven components of his Theory of Attachment.

One of the researchers concluded that a monkey's normal development depends on having an object, not necessarily a living thing; that it can cling to in the first few months of life. These months are known as *the critical period*. If a monkey doesn't have this mother until after this critical period, it adopts the privation mentality and can never properly form the caregiver attachment. The mother figure is vitally important for baby monkeys and baby humans, because it provides the baby a person or place to run to during times of stress. In this mother, they find comfort, security, and safety. Once the baby regains her composure, she feels confident and can explore the world again. When comparing these monkeys to those left in isolation, Harlow also found that *social deprivation* played a large role in normal development, as well. He tested this theory further in an experiment where he placed an infant monkey in a playroom with three other monkeys for 20 minutes every day. He found that these monkeys, compared to a control group, developed in a normal way socially and emotionally.

Other professionals criticized the way Harlow conducted these experiments. Some of the infant monkeys reared in isolated died, others were frightened to the point of insanity, and the experiments caused many developmental problems. In truth, the inhumanity of Harlow's experiments started the animal rights movement.

Strengths

Harlow's experiments bolstered the contemporary psychological literature. Without this research, Bowlby might not have been able to hypothesize about the significance of maternal deprivation. His experiments were scientifically valid due to their strong controls and their repeatability by any other curious experimenter.

Weaknesses

Although the experiments are scientifically sound, they may be of limited value in the developing understanding of human attachments. This restriction is due to the species difference since monkeys were tested rather than humans. Harlow overlooked many ethical considerations when performing these experiments. He caused large numbers of Rhesus monkey distress, developmental problems, and death. Other psychologists have criticized the ecological validity of his experiments, since they were performed in a lab and not in the wilderness. They also criticize how these monkeys experienced privation rather than deprivation, which might have affected the results.

Goldfarb (1943)

Goldfarb studied the effects of foster care on 30 children. The first group of 15 children lived in an institution from 6 months to 3.5 years of age. In this environment, they were socially isolated and considered only a part of a larger group, rather than an individual. They were then adopted into foster care. The second group of 15 children were adopted into foster care immediately after leaving their mothers. The two groups were matched according to their mothers' level of education and occupations, as well as, genetic factors.

When the researchers tested the children for intelligence, social maturity, and language use around the age of 4, the institution group was behind on all measures. These children were retested again at age 10 and 14, with the same differences in scores remaining. For example, whereas, the average IQ score for the institution group was 72, the average fostered group score was 95.

Goldfarb's longitudinal study illustrated the vast range of negative effects maternal deprivation can have on a child. Although he focuses on intelligence, social maturity, and language use, the problems could have arisen in any and every area of the child's development. This evidence suggests that children, who immediately find a new caregiver, in the fostered group, do not necessarily suffer the same problems as those children who are institutionalized. These institutionalized children become fully deprived of any caregiver bond, which has horribly negative consequences.

Strengths

Goldfarb's work examined real children who were from relatively equal backgrounds, but put in different situations. Thus, the differences in various measures, most likely only resulted from the effect of that environment. Furthermore, Goldfarb found a control group of 15 children, who were fostered around the age of 6 months, to provide a standardized measure for how children should typically score.

Weaknesses

The problem with human studies is typically the amount of confounding or unknown variables. Questions, such as, 'why did these parents give their child away in the first place?' and 'what common characteristics exist among the children in each group that could bias the results?' remain unanswered. Additionally, because foster care contains so many complex elements, it is scientifically difficult to conclude whether

adopting a child a 2.5 years of age rather than 6 months could affect the scores.

Spitz' Studies of Children in Institutions

Spitz (1945)

René Spitz studied institutionalized children in South American orphanages. In these institutions, the staff tended to be poorly trained and overworked. They had no time or energy to interact with the children, pick them up, or show affection toward them. In the study, Spitz found that children in this type of environment failed to thrive to such an extent that they developed **anaclitic depression**. Usually, children become depressed in this way as a reaction to the loss of someone on whom they are physically dependent. The symptoms of this distress are apathy, withdrawal, and poor appetite.

Spitz also examined children in normal hospitals. He found that these children had both physical and mental deterioration, which was caused mainly by remaining in the hospital without the presence of any caregivers. He proved this theory by showing how the return of the child's loved one would typically reverse these symptoms. He found that the period of three months was somehow critical to this process. If he tried to reverse the symptoms after three months, even the return of the caregiver would prove unsuccessful.

Then, Spitz compared children living in an orphanage to children in a penal institution where they were cared for by their biological mothers. Although physical conditions in the orphanage were better, the children were found to be 'developmentally inferior.' Within two years, 37% of the orphanage had died. In contrast, none of the children in the penal institution died even after five years.

Spitz and Wolf (1946)

These researchers studied a total of 91 infants living in orphanages around the USA and Canada. They investigated why, despite good medical care and nutrition, over one third of the children studied had died before their first birthday. Through research, they discovered that a child's separation from her main caregiver was the main cause of these deadly consequences. They extended these conclusions to apply to the lack of affectionate stimulation in the institution. The children typically lay in cots all day, with no one talking to them, loving them, or playing with them.

Bowlby also drew on this evidence of depression and death, for his Maternal Deprivation Hypothesis. He concluded that, while good health and medical care have importance, they are only part of the puzzle. A child's attachments and experiences with deprivation play an important role in their well being

Strengths

Spitz' conclusions were both ecologically and experimentally valid. The researchers were simply observing real children living in a real institution. Additionally, his work continued over many years. Throughout his research, he continually found that deprived children in every situation experienced problematic development and lower IQ scores. He also found that when he introduced more care and attention for the

children, the severity of their problems decreased.

Weaknesses

The experiments were not carefully controlled and the samples were not consciously picked. As a result, the observations collected through interviews and testing could have been biased. For example, their experiment might have focused primarily on only the situations where separation leads to low IQ scores rather than a thorough analysis of all possible situations. There is another problem with standardized tests. Their measurements are based on a specific type of learning and thinking, which tends to disregard cultural differences.

Robertson (1952)

James Robertson, a psychologist, was hired by Bowlby to observe children brought up in hospitals or institutions. The results proved so distressing to Robertson that he decided to make a short film, entitled *a Two Year Old Goes to the Hospital*, in order to illustrate what he had seen.

From Robertson's film and observations, he concluded that children deprived of their attachment figures went through three processes, which now have the acronym PDD:

1. Initially, the child will **Protest**. This stage occurs either immediately after separation or after a short delay of about a week. While protesting, the child will cry loudly, shake their cot, throw themselves around, and look eagerly towards any sound or sight, which might prove to be his missing mother.

2. The next stage is Despair. The child, still missing their caregiver, openly displays signs of hopelessness. This hopelessness is characterized by less physical activity, less crying, and the child withdrawing into a state of deep mourning.

3. Finally, the child enters a state of Detachment. They show more interest in their surroundings, accept the nurse's offerings of food and toys, and even socialize with the nurses by smiling, laughing, and playing. Most interestingly, even if the mother later revisits the child, the child may show no signs of even knowing the mother.

Bowlby extended the PDD concept to widows and widowers, explaining that they showed the same signs of protest, despair, and detachment after losing their spouse.

Strengths

The experiments recorded completely authentic data. They observed children reacting naturally to the real life situations they were experiencing. Robertson made several other films which recorded many similar findings.

Weaknesses

The observations cannot be exactly replicated since each child will differ. Because each case is unique, the

researchers cannot generalize the findings from a group of individuals to children everywhere. Each child has their own unique experiences with her own attachment figures and family.

Imprinting

The use of Ethology

Ethology is the study of how animals behave in their natural surroundings. Evolutionary psychology posits that this behaviour developed with a purpose. This purpose is almost always that the behaviour increases the animals' chances of survival. In a precocial species, the offspring are practically fully matured and mobile within moments of birth. At birth, these babies can walk and remain physically active without extra help. Additionally, the newborns have well-developed organ systems. Humans are not an example of a precocial species, since human babies are fairly helpless directly after birth. Species that are precocial include ducks, geese, and guinea pigs.

Imprinting describes the process by which newborn animals learn to attach to or follow their real parents. In species where imprinting exists, the initial caregiver bond turns into a powerful attachment. Imprinting is very important for precocial species. Since the young can walk shortly after birth, they need to immediately identify their primary caregiver and follow them on instinct. Thus, the phenomenon of imprinting ensures that the offspring instinctively form an instantaneous attachment with its mother. Otherwise, the young can easily get lost and eaten.

Thus, species that rely on imprinting and have young that imprint successfully are more likely to survive. The caregivers can closely guard their babies and protect them if any danger should arise.
In summary, imprinting involves a newborn forming an immediate attachment with her mother. This instinct has evolved because of its usefulness for survival.

Konrad Lorenz

Lorenz was an Austrian zoologist, animal psychiatrist and ethologist. He is regarded as the modern founder of 'new' ethology. The original founder of ethology was British biologist Douglas Spalding, who first described the phenomenon of imprinting.

In 1935, Lorenz described learning behaviour in young ducklings and goslings. He observed that during the first few minutes after birth, called a **critical period**, these ducklings learn to follow the first conspicuous, moving object they see. Lorenz found that this object does not necessarily have to be the mother. Instead, it can be any living creature the young duckling or gosling sees. This unique process of imprinting involves *visual and auditory stimuli* from the 'parent' object. These stimuli elicit a particular response in the young. The differences in these stimuli can easily affect how the babies behave as adults.

In one experiment, Lorenz demonstrated this phenomenon by waiting in front of newly hatched mallard ducklings and imitating their mother's quacks. Upon hatching, the young birds regarded him as their mother and followed him accordingly.

In another experiment, Lorenz removed half of a mother goose's eggs. After Lorenz hatched these goslings himself, they followed him as their mother. Subsequently, Lorenz mixed up these goslings with the other half. When they were released, the goslings followed their original attachment figure. In other words, the half which had initially followed Lorenz went back to him and the other half remained with their goose mother. These goslings that followed Lorenz had absolutely no conception that their real mother was the goose.

Through further research, Lorenz found that the young goslings would just as easily mistake a model of another species or even a bright red ball as their mother if presented at the right time. Additionally, Lorenz found that when goslings imprinted to anything that wasn't their biological mother, many aspects of their adult behaviour were abnormal, including their sexual preferences. In essence, the observation of the attachment figure created a similar internal working model of a companion. Later on in life, the animal uses the model to direct a variety of patterns of social behaviour.

Thus, imprinting is an important adaptive behaviour both in the short-term for protection and feeding, and in the long-term for mating. Imprinting illustrates the innate, automatic process of attachment and how creating these internal models can greatly enhance an animal's chances of survival if the process is completed normally.

Evaluation of Lorenz' studies of imprinting

Strengths

Because Lorenz used ethology and studied animals in their natural surroundings, his findings likely have ecological validity. In other words, these experiments were not performed in an unusual or unnatural situation, such as a laboratory. Also, later experiments replicated Lorenz' findings. One study used a yellow rubber glove as the first moving object the ducklings saw, and they duly imprinted onto the glove.

Weaknesses

Again, the conclusions drawn from studying animals cannot immediately be said to hold true for humans. Obviously, there are many differences between humans and any other animal species. Also, since only certain species are precocial and utilize imprinting, the findings might be specific to those sorts of animals

only.

Human Baby Attachment

Since babies are immobile at birth, their attachment behaviour is more difficult to study. There is evidence, however, that suggests that human babies form attachments in a manner similar to how ducks imprint. For example, in 1975, MacFarlane found that a human infant can differentiate its mother's breast pad from others as soon as 3 days after birth. In 1978, Mehler et al.'s, findings suggested that an infant can pick out her mother's voice after just 30 days.

Mary Ainsworth's Studies in Uganda

Bowlby's colleague, Mary Ainsworth, was influenced by his work. She investigated the individual differences shown in attachments between infants and their primary caregivers. She moved from Canada to England to work with Bowlby. Then in 1954, her studies took her to Uganda, where she studied the mother-child relationship in six Kampala villages.

She visited 26 mothers and their infants regularly over a period of many months. She made many observations that supported Bowlby's idea of the mother being a safe base. Ainsworth categorized the relationships she observed into three categories:

- **Securely Attached** – These children were generally content and confident. Whenever they were upset, the simple presence of their mother could pacify them;
- **Insecurely Attached** – These children were typically less willing to explore their surroundings. They also cried more frequently than the securely attached children and were less easily soothed; and
- **Not Yet Attached** – These children were indifferent to their mothers' presence. They would remain upset in her presence, sometimes, regardless of her attempts to sooth them.

Ainsworth concluded that a child developed a secure attachment style when her mother enjoyed breastfeeding and enjoyed that child's company. Ainsworth labelled this tendency **maternal sensitivity** because this factor, how sensitive and loving a mother was to her child, was the determining factor in the attachment style the child developed. She obtained similar results when conducting a study of 26 other American families living in Baltimore. These similarities provided evidence that this tendency existed across cultures and was a universal human trait.

The Strange Situation

Mary Ainsworth, a colleague of Bowlby was influenced by his work and became interested in investigating the individual differences shown in attachments between infants and their primary caregivers. She devised a standardized procedure, known as the **strange situation.** This standardization allowed her to accurately compare the results between different mother-baby pairs. The procedure is outlined below:

1. **Mother and Baby Play**

   The Mother-Baby Pair is shown into the experimental room. Inside the room are two chairs and a range of toys for the baby to play with. As they get comfortable in this new environment, the mother plays with her baby.

2. **Baby is Left to Explore**

   Once comfortable, the mother stops playing with the child and sits in one of the chairs. The infant continues to explore the room freely and to play with the toys.

3. **Strange Adult Enters the Room**

   After a little while, a stranger, who is an experimenter, enters the room, and sits down on the other chair. The stranger does not engage with the mother or baby initially. But, after a few minutes, the strange adult tries to interact with the child

4. **First Separation: Mother Leaves the Room**

   When the child seems comfortable with the stranger, the mother exits the room. As the mother leaves, the infant typically becomes distressed and the stranger will attempt to comfort her.

5. **First Reunion: Mother Re-Enters and the Stranger Leaves**

   As the mother re-enters the room, the stranger exits. The mother will, then, console the child. This consolation typically ends the child's distress. Researchers are especially interested in the baby's reaction at this stage.

6. **Second Separation: Mother Leaves the Room**

   The mother exits the room for a second time, but now the child is all alone in the room. Again, the typical child will express signs of distress.

7. **Stranger Returns**

   The stranger re-enters the room and tries to comfort the child without the mother.

8. **Second Reunion: Mother Re-Enters and the Stranger Leaves**

   As with the previous reunion, the mother comes back into the room and comforts the child, and the stranger exits.

In this strange situation experiment, the researchers focus on the **reunions**. These stages, 5 and 8, are most interesting because they demonstrate how quickly, if at all, a child will experience security and safety in the presence of their primary caregiver. Stages 4 and 6, the **separations**, are also of some unique interest to the experimenters. The baby's reaction to separation also acts as a measure of attachment.

The researchers include a safety procedure in case the baby gets too distressed. If at any time the baby seems overwhelmed, they immediately stop the experiment and all the mother to re-enter the room. If the baby shows no extreme signs of sadness, however, each stage is designed to be approximately three minutes in length.

Ainsworth's work with the strange situation investigated whether humans react to stressful situations in the same fashion as Rhesus monkeys. The experiments of Harlow and Harlow illustrated how Rhesus monkeys, when scared, will cling to the cloth monkey in order to seek comfort. Similarly, when a baby experiences a stressful situation, the researchers expected them to seek comfort from the mother when she returned during the reunion stages.

Ainsworth and Bell (1969)

This study investigated a link between the behaviour of mothers and the attachment differences found in children. They hypothesized that mothers who were responsive to their baby's needs and who breastfed would more likely to have a securely attached baby at twelve months. About 100 middle-class American mothers and their babies were tested using the strange situation procedure.
The observers were recording the behaviours of both the mother and her baby, especially noting:

- **Separation Anxiety** – the baby's displays of distress when the mother leaves;
- **Stranger Anxiety** – the baby's response to the presence of the stranger and how the reaction differs from when the mother is there to when she leaves; and
- **Reunion Behaviour** – the way the baby greeted the mother upon her return at the reunion stages

The findings of the study led Ainsworth and Bell to classify babies into three attachment types. They explained the cause of these different attachment types as the degree of the mother's responsiveness to the child's needs.

The three types of attachment identified were:

1. **Secure Attachment (Type B Attachment)**

   Securely attached babies tended to have sensitive, consistent, and responsive mothers. These babies would show signs of distress upon separation and quickly, clam down upon reunion

2. **Anxious-Avoidant Attachment (Type A Attachment)**

   Because mothers in this category tend to reject or neglect the signals of their child, the baby feels unworthy of the mother's love and develops an insecure attachment.

3. **Anxious-Resistance Attachment (Type C Attachment)**

   When mothers are sometimes responsive, reacting positively and caringly, but neglectful at others. The child develops an insecure attachment based on unpredictability and confusion.

	Reaction to stranger	Reaction to separation from	Reaction to reunion with mother
Secure attachment (Type B)	Child is indifferent to the stranger when mother is present, but when alone will ignore the stranger (stranger fear)	Becomes upset and distressed when the mother leaves, will usually cry and cannot be consoled by stranger	Happy when reunited at both reunion stages and is quickly calmed down when the mother returns, so can continue exploring
Anxious-avoidant attachment (Type A), also called insecure- avoidant	Child plays with the stranger regardless of mother's presence, and doesn't check for the mother's presence	Is not distressed by the mother's absence, and can seek comfort from the stranger	Shows no interest in the mother's return (was not distressed by their departure either)
Anxious-resistant attachment (Type C), also called insecure-ambivalent	Child shows fear of stranger and avoid them whether or not the mother is present	Severe reaction to the mother's absence, clearly distressed	Child will want the mother's comfort but may push her away when approached

Interestingly, Ainsworth and Bell found that these attachment styles equated to those found in the Ugandan studies. The classification into three categories and the characteristic behaviour of each category matched up exactly.

Ainsworth et al. (1978)

- Ainsworth continued with this strange situation procedure in her 1978 study in Baltimore. The results are summarized below:
- **70%** of children had Type B, secure, attachments.
- These securely attached children are unique in that they will happily play when the mother is present, even if the stranger is trying to interact with them. But, when the mother leaves, the child displays distress and the stranger cannot provide any consolation.
- When the mother re-enters, the child immediately runs toward the mother, settles down in her arms, and then resumes playing like normal.

- Thus, the mother is a safe base and the child displays separation anxiety
- 15% of the children had Type A, anxious-avoidant attachments.
- When the mother-baby pair are alone in the room, the child does not consistently look back at her mom to see whether she is present.
- Children with Type A attachments often don't cry or show much distress when the mother leaves the room
- If they are distressed, the stranger can comfort and sooth them.
- When the mother returns, the child may turn away from her and actively avoid her.
- Ainsworth concluded that children form this attachment style when the mother is abusive or neglectful. Essentially, the child learns to stop depending on the mother for love and comfort.
- 15% of the children had Type C, anxious resistant, attachments.
- These children display anxiety throughout the entire procedure. They will stay perpetually close to the mother rather than explore and seem worried even the mother is present.
- They are extremely distressed when the mother leaves and cannot be comforted by the stranger.

  In fact, they show signs of stranger fear.

When the mother returns, she cannot easily comfort the child. The child will both seek contact with the mother and try to pull away from her.

Typical Attachments

Main and Solomon (1986) agreed that Ainsworth's attachment types A, B and C are the normal variations of attachment styles. They also found, however, that only around 90% of children fall into those categories. Some children in the strange situation were found to show a combination of anxious-avoidant and anxious-resistant behaviours. These children are now categorized into a fourth type, attachment Type D or, alternatively, attachment type AC. This category is called **disorganized and disorientated attachment**. This attachment type is associated with a number of situations which interfere with the development of a strictly secure or insecure attachment style. In 1995, Radke-Yarrow et al., found supporting evidence for this claim. They demonstrated that 23% of children with mothers suffering from depression, and 46% of infants with mothers suffering *manic depression*, where periods of depression alternate with periods of euphoria or irritability, had this abnormal Type D attachment. They concluded that depression, especially manic depression, interferes with the parents' capacity to respond to their children's needs. As a result, the child will combine Type A and Type C behaviours.

Cross-Cultural Studies Using the Strange Situation

In psychology, researchers utilize **cross-cultural studies** in order to compare findings across numerous cultures. For example, Ainsworth used this cross-cultural research style by following the same strange situation procedure in both her Ugandan studies, as well as, her Baltimore studies.

Researchers from around the world have now utilized this same strange situation experience to measure

any variability in attachment styles between cultures. Using **meta-analysis**, where researchers compare findings of different studies to measure a common variable, the psychologists can arrive at a central, unifying thesis.

The table below outlines some of the results from the meta-analysis of the strange situation experiment carried out across multiple cultures:

	Type B attachment	Type A attachment	Type C attachment
Ainsworth et al. (1978) *American study*	70%	15%	15%
Sagi et al. (1985) *Israeli study*	37%	13%	50%
Grossman et al. (1985) *German study*	33%	49%	18%
Miyake et al. (1985) *Japanese study*	68%	0%	32%

The Israeli study was carried out in a Kibbutz, a collective community where temporary caregivers, called meta-pelets, look after a group of children. Inside the Kibbutz, the infants would not see their mothers for a large proportion of the day. Sometimes, sleeping was also communal. Consequently, these children might not even see their mothers before sleep. This environment helps to explain the 50% of Type C attachments found in the Israeli Kibbutzim study.

Grossman's German study showed a high number of infants who had developed anxious-avoidant attachments. What confused the researchers is that the German mothers were not insensitive to their babies' needs. So, rather than blaming a lack of the appropriate responsiveness to their children, the researchers argued that in Germany the parents might value independence more. As a result, the children might develop an attachment style that promotes independence. In this way, the results may be explained by cultural differences in parenting styles.

Van Ijzendoorn and Kroonenberg (1988)

In 1988, Van Ijzendoorn and Kroonenberg, set out to overcome three key problems they had identified with previous studies of cross-cultural patterns.
These were:

- **Small Sample Sizes** – A sample refers to the group of people being studied. When the number of

people in a sample for a given experiment is low, there are not enough people being test to provide sufficient evidence to generalize the finding for whole populations

- **The Impact of Intra-Cultural Difference Against Inter-Cultural Differences** – In these experiments, researchers had typically overlooked the cultural norms. They failed to note how the impact of differences between cultures (inter-cultural differences) compared to the effect of different from variations within one culture (intra-cultural differences)

- **The Use of Differences from the American Standard Distribution of Attachment Types -** Van Ijzendoorn and Kroonenberg compared studies using the strange situation procedure. They carried out the study identically in each culture. This example is an excellent demonstration of meta-analysis.

In all samples from all countries, with the one exception of a sample in Germany, type B attachments were the most common form. The prevalence of this attachment style demonstrates one similarity between the cultures studied.

The table below outlines the results:

Cultural group	Number of studies used	Number of mother-infant pairs	%age attachment types		
			A	B	C
China	1	25	25	50	25
Sweden	1	51	21	75	4
UK	1	72	22	75	3
Japan	2	96	5	68	27
Israel	2	118	7	64	29
Germany	3	136	35	57	8
Netherlands	4	251	26	67	7
USA	18	1230	21	65	14
Total:	**32**	**1990**	**21**	**65**	**14**

Since all of the results agreed that Type B attachments are the most common, we could argue that the results are fairly strong and most children developed secure attachments. But, keep in mind that the results could be somewhat misleading.

For example, although the USA *averages* show identical results to the overall *averages*:

- Easterbrooks & Lamb (1979) reported 94% of infants in their sample were Type B
- Kennedy & Bakeman (1984) found a third of their sample to be Type C and only 47% were Type B
- Antonucci & Levitt (1984) found that 36% of their sample were Type A attachments

Also, intra-cultural and inter-cultural comparisons produced interesting findings. One German samples was different from another German sample in Berlin. Similarly, Berlin greatly differed from an Israeli Kibbutz sample. Additionally, one of the Japanese samples, Tokyo, was more similar to two of the US samples than it was to the other Japanese samples. Last, the Israeli city sample more closely resembled the US samples than the other Kibbutzim sample included.

Evaluating the Strange Situation and Ainsworth's Research

Researchers consider the strange situation procedure the typical protocol for investigating the attachment style of the mother-child bond.

Some reasons why this experiment is so widely used and powerful are:

- The findings are generalised. Researchers have done multiple studies in multiple countries using cross-cultural research methods and meta analysis
- The standardized procedure with strong controls indicates that all collected data is reliable. Additionally, the task can be replicated. In fact, Ainsworth and other researches replicated the study numerous times
- The results of the studies are not **ethnocentric**, where results are confined to one culture

Ainsworth found similar reactions from children placed in a controlled setting as she did when studying real babies in their real homes in Uganda. This similarity of laboratory setting and naturalistic settings strengthened her conclusions.

However, some of the weaknesses include:

- In the laboratory strange situation procedure, there is a lack of ecological validity since the setting is unnatural
- Cultural bias in the categorization of the attachment types. In other words, categories were based on standardized western ideas, something referred to as categorical ethnocentricity. This problem was the primary barrier Van Ijzendoorn and Kroonenberg set out to overcome
- The judgment of the infants' behaviours is subjective, and not easily operationalized
- Ainsworth's original three attachment types did not cover all cases of attachment. After her work, researchers discovered a fourth attachment type, disorganized and disorientated attachment. Thus, her ideas were not complete
- The ethics of the strange situation procedure are questionable, as children are being put in stressful situations. If the mother feels the baby is under too much stress, however, they may withdraw at any time. But, realistically, this method is the only true way to assess attachment, and so it has to be done. Researchers cannot simply a baby questions instead.
- Researchers have not controlled for all extraneous variables. For example, the gender of the child or whether the child has repeatedly been separated from its mother in the past.

Further Reading:

- ✓ ***Thrivers: The Surprising Reasons Why Some Kids Struggle and others Shine, (2021), By Michele Borba***
- ✓ ***Navigating Autism: 9 Mindsets for helping Kids on the Spectrum, (2021), By Temple Grandin, Debra Moore***

