Object permanence essay

Critically examine views and works on infants' understanding of the existence of objects which are out of sight and their abilities to imitate. There has been much study into the development of an infant from birth. Attempts have been made to understand how infants perceive the world around them and then how they represent objects and how imitation then develops. In this paper we will consider the work of Piaget and the research that follows to consider if these view provide valid explanations (Bancroft and Flynn, 2005, 133-136). First we will consider how infants understand objects.

Object Permanence When an object disappears from sight like that of a ball rolling under the coach, a four year old will know that it is simply out of view and just needs to retrieve it. However this is different for a 6 month old, who will assume that the ball is no longer there. The development of an understanding of object permanence for an infant was regarded by Piaget as an essential part of the basis of the cognitive system. Once a child has completed this developmental phase it allows then to build mental activities such as planning and prediction.

Given that people could be considered objects then it may follow that object permanence is also important in social relationships. Hence it has been argued that the developing an awareness of permanence and individual identity of objects is a major accomplishment during the early stages of a child's life (Butterworth, 1981, as cited, Bancroft and Flynn, 2006, 135-136). Jean Piaget was a pioneer in the study of child development and was one of the first to study object permanence.

Piaget and Inhelder (1969) did investigations with children under two years old and he found that six month old babies will not look for a toy once it has been covered by a cloth as they assume it has disappeared, even though they are capable of reaching for the object. By nine months the child would be able to uncover the toy understanding the object still exists. Piaget saw that this understanding of object permanence as being an important part of cognitive development for infants and that it was essential for many aspects of life (Piaget and Inhelder, 1969, as cited, Bancroft and Flynn, 2006, 135-136).

Following Piaget work there has been many other studies into object permanence one of which was made by Bower et al. (1971). Given that it was possible with the observations made by Piaget could have been affected by the infants not having the ability to coordinate the movement to uncover the hidden item Bower devised an experiment that relied only on the infant's visual system. Using two month old children, they where placed in front of a model train track and their gaze was observed when a screen was placed to block the view of the moving train from one end to the other.

The train was occasionally stopped behind screen and again the infants gaze was observed. According to Piaget's work it would be expected that the infant would stop looking for the train, however it was found that they continued to look towards where the train should be if it kept moving. But there are some problems with this experiment as normally the eye will track moving objects and may not mean and understanding of object permanence (Bancroft and Flynn, 2006, 136). The violation of expectations Another

method used to understand early cognitive development is the ‘ violation of expectations’ procedure.

Children will become habituated to seeing an event for example watching a ball drop and knowing that it will always fall to the ground. However if the ball stoped and floated in mid air this becomes an impossible event and hence a ‘ violation of expectations’. Baillargeon (1995) devised two methods to observe infants. The showed a five month old baby a sheet of card laying flat on a table. Then they showed the sheet moving up and away from them, similar to a drawbridge. The card would travel through a full 180 degrees and finish at a flat position on the table. This was repeated until the baby had become habituated.

Then a wooden block was placed in the path of the paper which was visible to the baby. Then two conditions where made, one in which the paper would stop as expected once hitting the block and the second was the paper continuing to travel as if moving through the block (imposable event). The gaze of the baby was then measured for both events (Baillargeon, et al, 1995, as cited Bancroft and Flynn, 2006, 138). The expectation of the experiment was that the child would spend more time looking at the impossible event, inferring that they understand like an adult would understand that the paper cannot travel through a solid object.

The results of the experiment found that as expected once habited to the first condition they would spend more time gazing at the 120 degree rotation that saw the drawbridge stoped by the block. Once the block was removed, they then spent more time watching the impossible event as seen in the

chart below (Baillargeon, et al, 1995, as cited Bancroft and Flynn, 2006, 138). [pic] Figure 1 But these results where not conclusive as it could have been the child would watch the 180 rotation because it took longer during the removal of the block.

Baillargeon then adapted the experiment by putting the block to one side to aid the unhindered travel of the drawbridge the results are seen below. [pic] Figure 2 It can be shown from the chart above that there was a small increase in times between the two conditions but is not significant. Baillargeon then devised another experiment using a toy car on a track and screen to block the view. Then a block was either placed on the track or beside the track. From the observations it was concluded that the child showed a preference for the impossible event over the possible event.

Implying that they had an adult understanding of what should happen with the toy car in that block and the car continues to exist after it was covered (object permanence) and that the car should not be able to travel trough the block. This was even shown by Aguiar and Baillargeon (2002) in later experiments that children at 2. 5 months would expect an object to be hidden when behind an occluder. Piaget saw this as a later development stage whereas Aguiar and Baillargeon claim that infants have this ability from the start (Aguiar and Baillargeon, 2002, s cited Bancroft and Flynn, 2006, 142, 143). In contrast to Baillargeon experiments, Hood and Willams (1986) studied 13 infants aged 5 months old by observing them of searching for an object in the dark using a Christmas tree. It was found that when the lights where turned off infants would reach more towards where the object had been, suggesting they had an understanding of object permanence

(Hood and Willams, 1986, as cited, Bancroft and Flynn, 2006, 145). Imitation Piaget studied his own children to establish an understanding of how infants established the ability to think and reason.

He surmised that infants are born with a small set of behaviours or reflexes which they begin having little control over. He was particularly interested with the child's ability to store experiences to memory. He concluded that once the child can store such memories then they will be able to think and reason. Piaget thought that the ability to imitate showed the commencement in the development of memory. When infants are able to imitate an event for themselves, Piaget was sure that they have ' coded' and ' stored' this experience, and had access to it as a guide to their own behaviour (Piaget, 1951, as cited, Bancroft and Flynn, 2006, 145).

Some points that Piaget thought were very important was that in the early stages of imitation, children can only imitate actions that they are already able to execute and not new activities. Secondly was the difficulty for infants to imitate actions using parts of their bodies which they cannot see, for example, their own face. Piaget used the term ' schema' to describe a pattern of actions or behaviours. So an older child with a schema for picking up objects would ' know' the pattern of looking, reaching and grasping (Piaget, 1951, as cited, Bancroft and Flynn, 2006, 145).

Piaget thought that to know a child can store a memory and reproduce the same performance there need to be a time delay of least one day. Others have thought that this is a long delay to learn the behaviour and reproduce it. This prevented a full recognition of the infants' true abilities (Piaget, 1951,

as cited, Bancroft and Flynn, 2006, 145). Another issue that was raised was that Piaget observation where from such a small sample being his own children that they may not be typical of the general population which lead to further research that replicated Piaget's findings using a larger sample (Bancroft and Flynn, 2006, 151).

This study was made by Uzgirls and Hunt (1975) using twelve children during the period of one month through to two years. It was observed that by six months the children could imitate very complex behaviours but not complete them. Between nine and twelve months they where seen to be able to reproduce actions that they could not see them selves doing like tongue poking this was described by Piaget as a more sophisticated developmental action.

Between twelve and eighteen months infants where able to perform novel actions by combining new sighted actions with new actions of the own (Uzgirls and Hunt, 1975, as cited, Bancroft and Flynn, 2006, 151). These observations seemed to mirror those of Piaget and highlighted the ability to imitate facial gestures between nine and twelve months (Bancroft and Flynn, 2006, 151). Following on from Uzgirls and Hunt experiments, Melzoft and Moore (1977) conducted a several observations of infant imitation by looking at four actions, tongue poking, lip protrusion, mouth opening and finger movement.

Using six infants between twelve and twenty one days old, each child was shown one of the gestures four times during a 15 second period. The results where video taped and then interpreted by a panel of six judges. They where

asked to indicate which one of the four gestures had been imitated but not told which one had be shown. Based on these finding Melzoft and Moore concluded that infants where able to selectively imitate adult expressions. They then went on to change the experiment by using two week old infants and showing them a series of tongue poking followed by mouth opening and vice a versa.

By doing this they hoped to eliminate any ‘ by chance’ expressions given by the child (Melzoft and Moore, 1977, as cited Bancroft and Flynn, 2006, 154). Another investigation into early imitation was also performed by Jacobson (1979) using twenty-four infants aged between six and fourteen weeks. Using a various objects like a white ball or a pen it was found that the infants would produce tongue poking by both adult stimulus and object stimulus which brings into doubt that infants at this age can selectively imitate (Jacobson, 1979, as cited Bancroft and Flynn, 2006, 156).

This lead Melzoft and Moore to investigate even younger infants of 72 hours old with increased scrutiny using a second level of judges. Of the 40 infants it was suggested that 30 produced more mouth opening during the mouth opening phase and 25 did more tongue poking during the tongue poking phase (Melzoft and Moore, 1983, as cited Bancroft and Flynn, 2006, 154). This evidence contradicted Piaget’s conclusion that infants are unable to imitate until they reach 9-12 months (Bancroft and Flynn, 2006, 154).

Conclusion

All of this research is helpful in showing how infants develop cognitive ability to understand both the existence of objects and imitate actions. Piaget

concluded that much of what is acquired by infants is gained via an interaction with the environment and that the child will begin life with a blank slate hence a constructivist perspective. This is in contrast to the finding of Melzoft and Moore who claim that infants have an innate ability from birth. They take a biological stance that assumes we come as a pre programmed package with information stored in our genes, known as nativism.

Another difference between Piaget and other research is that Piaget used a qualitative method by only studying his own children, hence providing detailed individualistic information about each child. This is in contrast to other research like that of Jacobson who studied 24 infants, adapting a quantitative method to provide generalised findings. This provides a broad view of development but can see valuable data become invisible due to generalisation. Whereas Piaget provides detailed accounts of development but may not apply to the general population. Both accounts provide pieces to the puzzle in development.

It would be hard to say that development is either all nature or all nurture as science has already shown that both have a part to play in our development. My experience as a father I have noticed many amazing developments from my son. From the fist opening of his eyes to being able to grasp my finger at just a few hours old. It is clear that there are already leant actions by an infant before they are born and there is evidence that much learning goes on in the womb (Paul, 2011). This seems to validate Melzoft and Moore idea that we are born with the ability to intimate