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# The Development Of Theory Of Mind And Emotion Regulation Between The Ages Of Zero And Four: A Parent Report

Throughout life, children are constantly going through change. There has been much debate about the pathway of development from birth to adulthood; some argue that development occurs in 'stage like' periods whereby the stages are chronological (children develop according to their age). A person may become stuck at a specific stage if they do not have the necessary tools to progress. Other psychologists argue that development may not be so fixed as suggested by stage models and sometimes children can even regress through stages. It is said that children go through five types of development: physical, intellectual, moral, social and emotional development. Every child is different and sometimes children don't show age appropriate behaviour and may develop certain skills before or after their peers. In the first four years of life, infants learn language skills, how to walk, play, write, as well as learn how to express their emotions. These experiences are crucial for the development of their personality and behaviour. The way a child develops depends on genetic and environmental factors, including: sex, nutrition and socio-economic status, amongst others. In this parent report, social and emotional development in children aged zero to four will be explored as well as exploring explanations for atypical development.

Between the ages of zero to four, infants learn how to communicate with others. A part of communication is being able to understand our own thoughts as well as being able to understand that others have different thoughts and beliefs that drive their behaviour. This is called 'Theory of Mind' (ToM) (Premack & Woodruff, 1978). ToM is seen to develop throughout life. At birth, infants try to imitate the voices they hear and the faces they see, showing that trying to understand what others are experiencing is instinctual. At six months, infants can tell apart emotional expressions such as happiness, sadness and anger. By the end of the first year, children have a basic idea that other people's behaviour is caused by their desires and motivations (that may be different to their own). Pretend play plays a key role in symbolising the roles, feelings and behaviours of others. Children often are able to engage in play whereby they take on different roles, such as playing characters within a family. By age four, it is predicted that children should achieve ToM; by this age they are able to understand how and why their own thoughts differ from others (Mitchell, 2011). This helps children relate to their peers.

Knowledge about the development of Theory of Mind (ToM) has come from extensive research. Wimmer and Perner (1983) developed the 'false-belief' task to measure ToM. The 'false-belief' task aims to create a setting whereby the infant 'assumes' something about a situation. In this experiment children of all ages were told of a situation:

"Maxi puts his chocolate in the cupboard and leaves the room. While he is away, his mother moves the chocolate from the cupboard to a drawer. Maxi returns. Where will he look for his chocolate, in the drawer or in the cupboard?" Wimmer and Perner (1983, p.109)

Children who understand that Maxi is unaware that his mother moved the chocolate and would therefore look for the chocolate in the kitchen cupboard, it is said that they have 'ToM'. Wilmer

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and Perner (1983) found that four-year olds tend to pass this test, showing that by age four, children have developed a ToM. Passing this task involves being able to distinguish real world events from false events. However, other research has found that children as young as three-years-old pass the false belief task (Wellman, Cross & Watson, 2001). Researchers claim that the original false-belief tasks were too difficult and younger children show better understanding of the task if it is targeted at their age (Siegal & Beattie, 1991).

Although there has been some inconsistency in establishing the age at which children develop ToM, it is important to clarify that even though younger children do not pass the false-belief task, it does not mean they do not understand their own mental state and the mental state of others to a certain degree. It could be said that younger children have difficulty understanding abstract tasks such as the 'false-belief' task.

Not all children follow this developmental trajectory. Even at age four, some children may not have developed a ToM. Administering the false-belief task to a range of children can help understand these developmental delays. Autistic children have trouble with false-belief tasks even after the age of four. Autism Spectrum Disorder is a pervasive developmental disorder that can range from mild to severe. It is characterised by difficulty with social interaction, communication and language, with repetitive behaviour (Bishop & Lord, 2009). Due to the fact that Autistic individuals experience 'social disconnectedness' they are unable to understand the mental capacity of others (Baron-Cohen et al., 1995).

Theory of Mind in Autistic children can also be measured using the false-belief task. Baron-Cohen, Leslie and Frith (1985) created the "Sally-Anne Task". In this task, two dolls (Sally and Anne) are shown to the child. The experimenter tells the child the following:

"Sally has a basket and Anne has a box. Sally puts a marble inside her basket. Sally leaves. When Sally leaves, Anne puts the marble inside her box. Sally comes back." Baron-Cohen, Leslie and Frith (1985, p.41)

To ensure the child has understood the situation, they are asked clarifying questions like 'which doll is Sally/Anne?'. The critical question is: 'Where will Sally look for her marble?'. For a child to be said to have 'Theory of Mind', they must state that Sally will look for the marble in the basket and not in the box. They found that only 20% of children with autism got the question correct compared to 85% of 'typically' developed children. This shows that children with Autism may not understand the thoughts and behaviours of others.

However, not all individuals with autism fail ToM tasks. Happe (1994) found that approximately 20% of autistic children pass false belief tasks. He argued that these children may be using other strategies to combat these tasks. Autistic children may be using logic to pass false-belief tasks and may not understand the mind at all. It is argued that these children may learn through their own experiences but lack the fundamental understanding that others have different thoughts.

Between the ages of zero and four, understanding emotions is a challenging task. Emotional development refers to the ability of a child to recognise their own feelings and express and manage them appropriately. At six weeks, infants try to imitate emotion through what is said to be the 'Social Smile'(Caron et al, 1982). The 'Social Smile' is an adaptive trait (a trait that promoted survival in ancestral time) as it provokes an affectionate response from their

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caregivers. At four months old, infants begin to laugh. This shows that they can recognise behaviour that deviates from the 'norm' of their day-to-day life. By the first year, infants can understand and express the six basic emotions of happiness, fear, disgust, anger, surprise and sadness. By age two, children express more complex emotions that they develop through their own social interactions such as embarrassment and pride (Tracy et al., 2005). By age three, children begin to understand how to express their emotions appropriately according to societal norms and by age four, children can 'self-regulate' their emotions. They have the ability to alter how they express emotions without as much input from parents. For example: feeling disappointment by a toy they receive can be manipulated to appear as happiness instead. Pretend play can foster this emotional maturity as they interact with their peers and begin to understand the feelings of others (Barrett, 1997). Emotion regulation is vital by this age because the environment the child finds themselves in is becoming increasingly socially demanding (i.e. they start school).

The role of the parent cannot be underestimated in the development of emotion. From birth, parents play an important role in times of need. Parents introduce their children to societal norms regarding expressing and regulating emotions (Hochschild, 1983). When a child is securely attached to their caregiver, it promotes the development of the understanding of basic emotions (Laible & Thompson, 1998). Other factors can affect the development of emotion recognition and these include: socio-economic factors, verbal ability and sex. Smith and Walden (1998) found that African-American children from low-income families were more accurate in the perception of fearful expressions. This shows that the situation a child grows up in influences the ability to recognise emotions. Ridgeway et al. (1985) found that verbal ability influences emotion recognition as being able to label different facial expressions helps in recognising them. Lastly, McClure (2000) found that more labels are used when establishing emotions with girls and therefore females have an advantage when recognising emotions. These factors have an impact on emotional development and shows that environmental factors influence emotion recognition.

Kochanska (2001) investigated the role of parents in emotional development. She investigated the development of fear, anger and joy in 112 children. The children were observed at four different time periods (nine months, 14 months, 22 months, 33 months). Kochanska explored three types of attachment that may affect emotion development and these included secure, resistant and avoidant attachments. Securely attached children are confident to explore an environment when their parents are present and seek comfort from them when distressed. Resistant children are independent from their parents emotionally. Finally, avoidant children exhibit both clingy and rejecting behaviour when distressed (Ainsworth, 1979). Kochanska (2001) found that securely attached children became less angry over time whereas avoidant and resistant children experienced an increase in negative emotions. For example, they became more fearful and less joyful over time. It can be concluded that parents play a vital role in how children develop positive and negative emotions.

Theory of Mind and Emotional Development are arguably inextricably linked throughout a child's development. Not all children develop the ability to process and express emotions. Children with a range of mental disorders such as Autism, Conduct Disorder (antisocial behaviour) and Dysthymia (mild depression) often have problems understanding emotions and this impedes development of other functions like Theory of Mind (Hobson, 1989). Buitelaar et al. (1999) studied 80 children from four groups: autistic disorder, developmental disorders, psychiatric disorders and 'normal' children. They were given a battery of tasks including the

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false-belief task and an emotion recognition task whereby the children had to match photographs that showed the same emotion. It was found that children with conduct disorder or dysthymia performed just as well as 'normal' children on the tasks. Autistic children did not perform as well as the other groups and the task measuring ToM contributed to this difference. This indicated that Autistic individuals do not lack in emotional recognition but there is an inability to understand different mental states. Autistic individuals often exhibit a lack of emotional awareness and psychologists have suggested this is due to the fact that they struggle to apply their emotional knowledge to real world situations and not the lack of knowledge in the first place (Bowler, 1992). Bowler's finding gives hope to individuals that have difficulty understanding and expressing emotions as with appropriate intervention children may be able to learn these skills.

By the age of four, children have gone through some important milestones such as recognising that they have unique thoughts and emotions and that others have the capacity to have different motivations that drive their behaviour. It is important to emphasise the key factors in development such as the role of the parent, nutrition and education to aid our understanding of the changes a child goes through. Between the ages of zero and four a copious amount of development occurs and although a universal trajectory has been established for what 'normal' development should look like, this report emphasises that all children are different and not all will follow this; but with time and research, the information grows on how to aid development in social and emotional development.

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