

To what extent is an acquisition of a 'theory of mind' essential for the 'typical' development of the child?

To answer this question, this essay will firstly discuss what is meant by Theory of Mind (ToM). It will then go on to look at evidence to support ToM while discussing the extent to which ToM is essential for the 'typical' development of the child.

ToM resides under social cognition, where people think about people (Rommel, et al., 2001). Through the course of early childhood development, children distinguish that people, including themselves, have thoughts, intentions, wants, and feelings. ToM describes a child's understanding that people's behaviours can be predicted or explained by mental states. ToM enables us to recognize there may be multiple viewpoints held by individuals for particular situations, and we can take on those perspectives even when they vary from our own (Gray and Hosie, 1996; Gray, et al., 2001; Marschark, et al., 2000; Siegal and Varley, 2002). This understanding of mental states and their impact on others' behaviour notably affects our interpersonal relationships. Siegal and Varley (2002) further described ToM as crucial to social competence and necessary for the creation and maintenance of a range of relationships with other people.

Examples of the relationship between mental state and understanding behaviour include the following (Marschark, et al., 2000; Meltzoff, 1999; Reiffe and Terwogt, 2000): Desires: A child recognizes that Mum reaches into the biscuit barrel because she wants a biscuit. Emotions: A child observes that another child is crying and comments that the child feels sad. Intentions: When an adult throws a ball toward a basket but misses, a child will pick up the ball and drop the ball in the basket because the child understands that the adult intended to have the ball go into the basket. Beliefs: A child sees that her parent's keys are on the kitchen table. However, the child recognizes that the parent is looking in her purse for her keys because she thinks (believes) they are there.

The general supposition is that a theory of mind is developed around the age of four. This is supported by the false belief paradigm. An understanding of false belief is often measured by an unexpected contents task or a displaced object task (Marschark, et al., 2000; Peterson, 2004). Wimmer and Perner (1983) conducted research where children aged three and four were presented with stories in which a character holds a belief which the child knows to be false and thus different from his/her own. The question is whether the child can correctly predict the character's action given the false belief. An example of this is the 'Sally Anne Task' (Frith, 1989). Sally places a marble in a basket and then leaves the room, whereupon Anne moves the marble to another location. Sally returns and looks for the marble. The child being tested is then asked where Sally will look. Most three year olds will think that Sally will look in the new location, therefore showing their inability to infer a false belief to Sally. However, from four years on children will give the right answer; they can understand that others may have beliefs which do not reflect reality (Frith, 1989).

Until around four years of age children assume that there is only one world, which matches with their own experience. The false belief paradigm shows that such children cannot yet mentally represent to themselves alternative views - those different from their own - of a particular event. When children have developed a theory of mind they obtain the ability to represent another person's conflicting view and can understand another's lack of knowledge. They have come to realise that what one person believes to be true may actually be false (Schaffer, 1996).

These new abilities depend on various precursors which are evident at earlier ages. Harris (1989) argues that the acquisition of a theory of mind depends on the development of self-awareness, the capacity for pretence and the ability to distinguish reality from pretence. Self awareness is apparent from quite an early age, it is obvious in children's expression of their feelings and desires. This is an indicator of a child's

understanding of mental operations generally. We can see children developing a capacity for pretence through make-believe play as they attribute mental states to dolls, for example, therefore suggesting an understanding of how other people work.

Harris (1989) suggests that when children manage to differentiate between reality and pretence, realising that other people are not just an extension of the child's only desires, this is when children will not confuse the mental states of others with their own. It is not until the fourth year that children can imagine another person's feelings and views even though they are not the child's own (Harris, 1989).

Durkin (1985) developed this path to a theory of mind and knowledge of others and argues that it involves distinguishing people from other things, discovering the characteristics of individuals, and finally learning that others have an independent psychological existence (a theory of mind).

Unlike adults, infants have much less experience in distinguishing between people and other things. Piaget (1936) argued that children only became concerned with people and their differences from other people at the end of the first year. However, many have argued that infants are interested in people from birth. People provide the most interesting stimulus. They have vivid facial expressions and sound producing devices, and provide food.

However, this does not mean that infants are aware of people's internal properties, such as feelings. Experiments by Richards (1974) show infants to be more responsive to a mother, adjusting their facial behaviour and looks, than to an inanimate object which was moving. This appears valid only when mothers interact with the child, as Tronick et al's (1978) experiments show, when a child does not "know" they are interacting with a person because they are not responsive and inanimate, the child clearly shows signs of distress and smiles less.

An experiment by Feldman and Ruble (1981) suggests that children of a young age, although commenting less on the internal states of others than older children or adults, do make character assessments and attribute feelings to other children if a social motivational variable is introduced. That is, when they anticipate future interaction with the other child. Once children begin to appreciate other's character, they can see that it may be different from their own, shown, for example, in their expression of dislike for another child, and this is culminated in the acquisition of a theory of mind as they understand that other's may hold views different from their own. However, at this juncture, it is important to note that the attainment of a theory of mind is not immediate, and just as gradually as children develop understanding of others in stages, their theory of mind is developed throughout their childhood. Selman (1980) argues that it is not until 8 or 10 years old that a child can properly put themselves in a person's place to really understand their intentions (which conflict with their own).

Schaffer (1996) puts forward the argument that because children display empathy they are therefore not entirely egocentric until they acquire a theory of mind. Hoffman (1988) explains empathy as a four stage process, showing a developing precursor to children managing to attribute internal states to others. The first level is global empathy whereby in the first year, children may replicate the emotion they witness, such as crying when another child is crying, however, Hoffman (1988) argues that the emotion is "involuntary and undifferentiated". The second level is egocentric empathy when children offer help to those in distress, help which they would find comforting themselves. Third is empathy for another's feelings; children have developed role-taking skills initiated by make believe play, as argued by Harris and are more aware that other people can have different feelings than the child's own. Therefore their responses to distress are more suited to the other person's needs. This is the final stage in the development of empathy. This coincides with the attainment of a theory of mind. Empathy for another's life condition occurs by late childhood and they can appreciate

that the person's distress may stem from earlier experience and not just the immediate situation; and can also be found with respect to entire groups of people, the poor for example, enforcing this idea.

The research on empathy shows that, from a very early age, children do have a capacity for the appreciation of other people as thinking and feeling individuals. Studies by Bretherton and Beeghly (1982) show that children's spontaneous talk about other people's internal states leads to the same conclusion. From the third year children are more aware of other people's emotions and can comment on their motivations. For example, the excerpt "you sad, Mummy. What Daddy do?" shows a child's discussion of how his or another person's state has been caused or changed. Examples such as this show that children cannot therefore be completely egocentric as they appear aware that another person may be experiencing feelings different from their own.

Theory of mind (TOM) is the intuitive ability we develop through early childhood to know that others have a different point of view to our own. No other species, as far as we know, can 'put itself in someone else's shoes' to see how they might be feeling to the same extent that we can. To take it a step further, from putting ourselves in the place of another we can predict certain courses of events. TOM is not just interpreting how another behaves but how they think, so for example one does not just understand that if someone puts their hand on an iron they will pull it away quickly afterwards, but that in touching it the other has felt pain from the heat of the iron and therefore has moved the hand so it is no longer touching the source of pain. If you see someone else getting too close to an iron it immediately runs through your head what might happen next: that is one example of TOM. Another might be that although someone is smiling the person they are talking to knows they are really trying to hide their true feelings. TOM enables the 'person' singular to share feelings with, and understand, others, and consequently become part of an interacting social group rather than just an individual (Wellman, 1990).

Humphrey suggests that 'A crucial aspect of society (is) the ability to understand or read the mind of another individual' (as cited in Miell, Phoenix and Thomas (2002), p125). Part of human evolution has been the emergence of society. Evolutionary psychology studies this as a differentiating factor to non-humans, and theory of mind can be seen as important to the establishment of society.

To take another example of the importance of TOM, Byrne and Whiten's Machiavellian hypothesis (Miell, Phoenix and Thomas, 2002) theorise that we reached our present level of creative intelligence through the adaptive nature of our deception, opportunism and 'cunning' cooperation. Paramount to this must be TOM. One cannot deceive by accident: by definition it is a purposeful and thought-through act. The same goes for cunning cooperation and social manipulation - the theory may not be based on TOM but its basis would not even be possible without TOM - in other words it does not contradict theory of mind but strengthens it.

Many researchers have argued that lack of TOM is the fundamental impairment at the root of autism. Studies using false belief tasks suggest that it might be so: in a controlled study comparing four year -old "normal" children with autistic children and Down syndrome children with a mental age of at least four, over eighty percent of the normal and Down children answered correctly, but only twenty percent of the autistic children did (Baron-Cohen *et al*, 1985). Other false belief tasks give similar results, but there are other impairments too. Lack of TOM would certainly explain the social withdrawal and communication disorders associated with autism, but this cannot be the whole story because not *all* autistic children fail the false belief tasks. Nor can it explain other symptoms like the need for sameness. More recently, Baron-Cohen (1995) has argued that the real root of autism might be the inability to follow another's gaze. Children were asked to sit in front of the researcher with four pieces of chocolate between them. When the researcher looked at one piece, the normal children could follow the gaze and knew which piece was being

looked at. They also associated the look with desire, and would offer the piece to the researcher. Autistic children were deficient in both these respects. If a child is unable to tell what another person is looking at, they will never fully understand that they have a different view of the world. If they cannot associate this view with desire, they will never understand the motivations or intentions of others.

Autism shows clearly what the advantages of TOM are at the social level, and the importance of TOM to the discipline of evolutionary psychology seems to be paramount. A child's awareness and understanding of the mind influences several aspects of human life. ToM can influence pragmatic language skills and participation in communicative interactions. Gray and Hosie (1996) described ToM as "mind reading", while Schick, et al. (2002) relate ToM to our ability to perceive the emotions of others allowing us to respond appropriately. The ability to understand the relationship between action and mental states affects a child's understanding of surprises, secrets, tricks, mistakes, and lies, as well as impacting a child's ability to take perspective and infer (Schick et al., 2002). ToM can impact how we adopt the beliefs of a particular culture and how we recognize the meaning of words (Siegal and Varley, 2002). Research associates the importance of ToM in literacy development and a child's understanding of stories (Gray and Hosie, 1996; Schick, et al., 2002). ToM significantly impacts our ability to communicate and function.

Wellman, Cross, and Watson (2001) identify a pattern in children with typical development: "The understanding of belief, and related, understanding of mind, exhibit genuine conceptual change in the preschool years" (p.655). Peterson and Slaughter (2003) noted that "...by the time they reach age 6, most normally developing children have acquired ToM, enabling at least a rudimentary understanding of their own and other people's true, false and imaginary mental states" (p. 399 - 400). Evidence consistently notes the development of ToM (as measured by success with false belief tasks) in preschoolers with typical

development at approximately 4 years of age. Patterns demonstrate the progression of understanding increasingly complex situations with action attributed to mental states (Gray and Hosie, 1996).

In conclusion, ToM does seem to be very important in many areas of the typical development of the child. Our sense of understanding of others is our most essential source for introducing meanings in a world of causes. A typically developing child's ToM comprehends where facts come from, so that they can work out who knows what, and more importantly, who doesn't know what. This is a crucial development simply because it supports proper communication, telling people what they don't know, other than telling them what they already know (Grice, 1975/1957). It is also a basis for the understanding of deception, which depends on being able to work out what a person might know about. The ability to predict the behaviour of others is a crucial component of social skill development (Baron-Cohen et al. 1985).

By 4 years old, normally developing children can also pick out words from list that relate to what happens in the mind, or what it can do. These words comprise "think", "know", "dream", "pretend", "hope", "wish", and "imagine". These are easily differentiated from other kinds of words like "jump", "eat", or "move". Autistic children find it much harder to make this judgment (Baron-Cohen et al., 1994).

Children with no ToM may have difficulty understanding that their peers or classmates have thoughts and emotions, and may thus appear to be self-centred, eccentric, or uncaring and end up being someone who cannot interact with society. It is a vital part of growing up and without it, many things would continue to be a mystery for the child and learning and social interaction would become increasingly difficult.

Meltzoff (1999) sums it up perfectly when he says "People are more than physical bodies. We are more than dynamic bags of skin that can be seen, heard, and weighed. In the adult framework, persons also have

beliefs, desires, and intentions that lie below the surface be haviour. One cannot directly see, taste, smell, or hear mental states, but it is an essential part of our ordinary adult understanding that other people have them. . . ” (p.257).

Words 2804

References

- Baron-Cohen, S., Leslie, A.M., and Frith, U. (1985). Does the autistic child have a 'theory of mind'? *Cognition*, 21, 37–46.
- Baron-Cohen, S. (1995). *Mindblindness: an Essay on Autism and Theory of Mind*. London: MIT Press.
- Baron-Cohen, S., Ring, H., Moriarty, J., Shmitz, P., Costa, D., and Ell, P. (1994). Recognition of mental state terms: a clinical study of autism, and a functional neuroimaging study of normal adults. *British Journal of Psychiatry*, 165, 640 -649.
- Bretherton, I., and Beeghly, M. (1982). Talking about internal states: The acquisition of an explicit theory of mind. *Developmental Psychology*, 18, 906-921.
- Durkin, K. (1985). *Developmental Social Psychology: From infancy to old age*. Oxford: Blackwell.
- Feldman, N. S. and Ruble, D. N. (1981). Social comparison strategies : Dimensions offered and options taken. *Personality and Social Psychology Bulletin*, 7, 11 -16.
- Frith, U. (1989). *Autism: Explaining the Enigma*. Oxford: Blackwell.
- Gray, C.D., and Hosie, J. A. (1996). Deafness, story understanding and theory of mind. *Journal of Deaf Studies*, 1(4), 217-233.
- Gray, C.D., Hosie, J.A., Russell, P.A. and Ormel, E.A. (2001). Emotional development in deaf children: facial expressions, display rules, and theory of mind (pp. 135-160). In M.D. Clark, M. Marschark, and M.

Karchmer (Eds.) *Context, cognition, and deafness*. Washington: Gallaudet University Press.

References

Grice, H. P. (1975/1957). Logic and conversation. In R. Cole & J. Morgan (Eds.), *Syntax and Semantics: Speech Acts*, . New York: Academic Press.

Harris, P.L. (1989). *Children and Emotion*. Oxford:Blackwell.

Hoffman, M. L. (1988). Moral development. In M. Bornstein and M. Lamb (Eds.) *Developmental psychology: an advanced textbook* . (pp. 497-548). London: Erlbaum.

Marschark, M., Green, V., Hindmarch, G., and Walker, S. (2000). Understanding theory of mind in children who are deaf. *Journal of Child Psychology and Psychiatry*, 41(8), 1067-1073.

Meltzoff, A.N. (1999). Origins of theory of mind, cognition, and communication. *Journal of Communication Disorders*, 32, 251-269.

Miell, D., Phoenix, A. and Thomas, K. (2002). *Mapping Psychology*. Milton Keynes: The Open University.

Peterson, C.C. (2004). Theory-of-mind development in oral deaf children with cochlear implants or conventional hearing aids. *Journal of Child Psychology and Psychiatry*, 45(0), 1-11.

Peterson, C., and Slaughter, V. (2003). Opening windows into the mind: Mothers' preferences for mental state explanations and children's theory of mind. *Cognitive Development* 18, 399-429.

Piaget, J. (1936). *The origins of intelligence in the child*. London: Routledge and Kegan Paul.

References

- Reiffe, C., and Terwogt, M.M. (2000). Deaf children's understanding of emotions: Desires take precedence. *Journal of Child Psychology and Psychiatry*. 41(5), 601-608.
- Rommel, E., Bettger, J.G., and Weinberg, A.M. (2001). Theory of mind development in deaf children (p p. 113- 134). In M.D. Clark, M. Marschark, and M. Karchmer (Eds.) *Context, cognition, and deafness*. Washington, DC: Gallaudet University Press.
- Richards, R.J. (1974). The innate and the learned: the evolution of Konrad Lorenz's theory of instinct. *Philosophy of Social Science*, 4, 111 - 133.
- Schaffer, R.H. (1996). *Social Development*. Cambridge: Blackwell Publishers Ltd.
- Schick, B., de Villiers, J., de Villiers, P., and Hoffmeister, B. (2002). *Theory of mind: Language and cognition in deaf children*. The ASHA Leader Online. Retrieved May 1, 2005 from <http://www.asha.org/about/publications/leaderonline/archives/2002/q4/f021203.htm>
- Selman, R. L. (1980). *The growth of interpersonal understanding*. New York: Academic Press.
- Siegal, M., and Varley, R. (2002). Neural systems involved in 'theory of mind'. *Neuroscience*, 3, 463-471.
- Tronick, E., Als, H., Adamson, L., Wise, S., and Brazelton, T B. (1978). The

infant's response to entrapment between contradictory messages in face-to-face interaction. *Journal of the American Academy of Child and Adolescent Psychiatry*, 17, 1-13.

References

Wellman, H.M., Cross, D., and Watson, J. (2001). Meta-analysis of theory of mind development: The truth about false belief. *Child Development*, 72, 655-684.

Wellman, H. (1990). *The Child's Theory of Mind*. Cambridge, MA: MIT Press.

Wimmer, H., and Perner, J. (1983). Beliefs about beliefs: representations and constraining functions of wrong beliefs in young children's understanding of deception. *Cognition*, 13, 103-128.