

Where are people putting your dot?

Social Awareness' Impact on Social Skills

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My Books



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Development of ToM

- Understanding of attention in others is a critical precursor to the development of theory of mind
- This skill is typically found by 7 to 9 months of age



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Understanding Attention

- Involves understanding that seeing can be directed selectively as attention.
- That the looker assesses the seen object as "of interest."
- That seeing can induce beliefs.



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"Of interest"
could be something positive...



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...or negative



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- Attention can be directed and shared by the act of pointing
- Pointing requires taking into account another person's mental state, particularly whether the person notices an object or finds it of interest.



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Intentions

- Understanding of others' intentions is another critical precursor to understanding other minds
- It is a fundamental feature of mental states and events.
- Research in developmental psychology suggests that the infant's ability to imitate others lies at the origins of both a theory of mind and other social-cognitive achievements like perspective-taking and empathy. Meltzoff, A. N. (2002). Imitation as a mechanism of social cognition: Origins of empathy, theory of mind, and the representation of action. In U. Goswami (Ed.), *Handbook of Childhood Cognitive Development* (pp. 6-25). Oxford: Blackwell Publishers.

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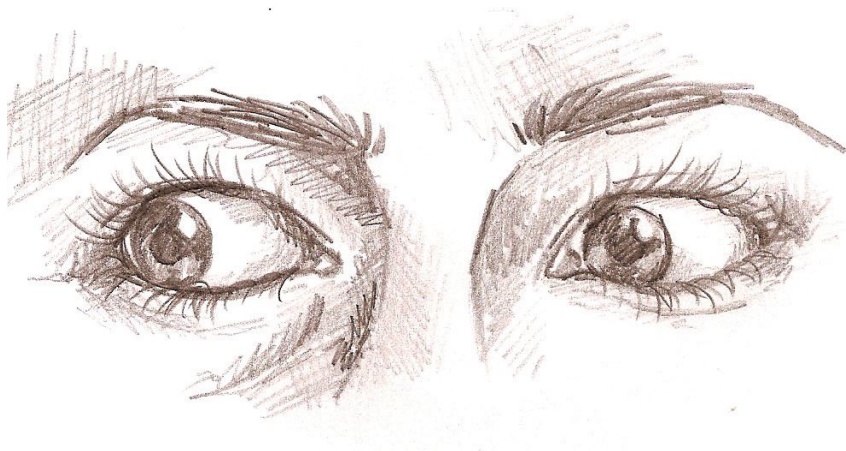
Inherent Difficulty

- Humans can only intuit the existence of their own mind through introspection, and no one has direct access to the mind of another.
- However, Vulcan's can.



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Why it's necessary to develop "Aspie-Eyes"



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Assumptions impact intervention

- Decisions are based on what we see and infer.
- But what if our decision is incorrect?



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Social Awareness is a Learned Behavior

- Conformity by embarrassment
- Need to be seen as part of the group
- How will people think about me?

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A developing
Theory of Mind



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Networked brains

- The Borg have them
- Humans do not



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Deficits Related to ToM

B. Myles and J. Southwick (1999) *Asperger Syndrome and Difficult Moments*. Shawnee Mission KS: Autism Asperger Publishing Co.

- difficulty explaining one's own behaviors
- difficulty understanding emotions
- difficulty predicting the behavior and emotional states of others
- problems understanding the perspectives of others

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- problems inferring the intentions of others
- lack of understanding that behavior impacts how others think and/or feel
- problems with joint attention and other social conventions
- problems differentiating fiction from fact

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Requirements for ToM

- For children to be able to recognize and act upon assumptions acquired from observations, **it is critical that they understand the nature and causes of emotions**

Rueda, P., Fernández-Berrocal, P. & Schonert-Reichl, K.A. (2014). Revised Journal of Autism and Developmental Disorders. 1: 327. <https://doi.org/10.1007/s40489-014-0026-5>; E. Silliman, S. Diehl, R. Bahr, T. Hnath-Chisolm, C. Zenko, S. Friedman (2003). A new look at performance on theory-of-mind tasks by adolescents with autism spectrum disorder. *Language, Speech, and Hearing Services in Schools*. 42: 236-252.

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Sally-Ann Test

- Only 20% of a sample of autistic children were able to pass this task despite having mental ages over 4 years. Leslie and Frith (1988). Autistic children's understanding of seeing, knowing and believing. *British Journal of Developmental Psychology*, 6: 315-324
- Almost all neurotypical children over the age of 4 years passed the task. Wimmer and Perner (1983). Beliefs about beliefs: Representation and constraining function of wrong beliefs in young children's understanding of deception. *Cognition*. 13: 103-128.



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1st Order ToM

- The ability to infer the thoughts of another person
- “You can think what Joe is thinking about.”



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2nd Order ToM

- The ability to reason about what one person thinks about another person's thoughts
- You can think what Bobby is thinking about Joe



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Use Caution

- False-negatives are high with AS
- Many individuals with AS can pass structured tests designed to assess both orders of ToM Iao and Leekam (2014). Nonspecificity and theory of mind: new evidence from a nonverbal false-sign task and children with autism spectrum disorders. *Journal of Experimental Child Psychology*, 122: 1-20.
- Cognitive assessment vrs functional social assessment

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Another Way To Look At It

- I know that not everyone like's what I like.
- I know that what I do (or don't do) impacts your decision to like me (or not like me).

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ToM Differentiation

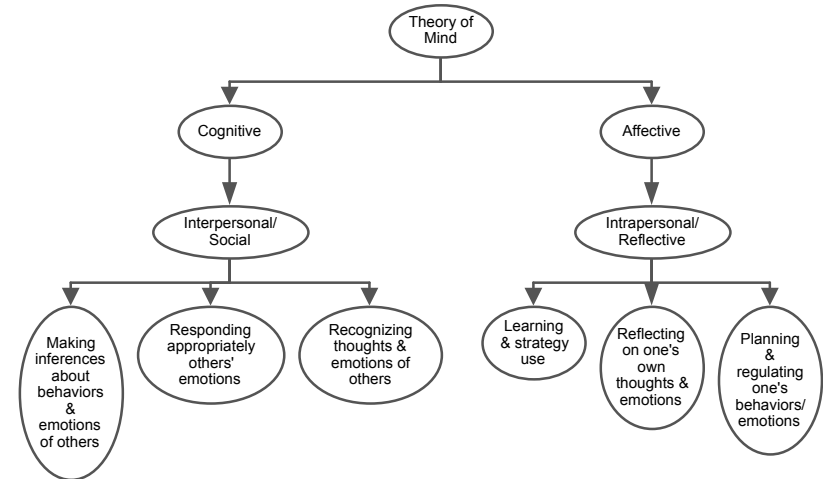
Tine and Lucariello (2012). Unique Theory of Mind Differentiation in Children with Autism and Asperger Syndrome. *Autism Research and Treatment*. Vol. 2012, Article ID 505393, 11 pages. <https://doi.org/10.1155/2012/505393>.

- Social ToM
 - weak skill in AS/HFA group
 - needed for social development
- Intrapersonal ToM
 - no difference across groups
 - needed for learning

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Types of Theory of Mind

Baron-Cohen, S. (2011). *The Science of Evil: On Empathy and the Origins of Cruelty*. New York: Basic Books;
 Keysers, C. (2011). *The Empathic Brain*. Social Brain Press.



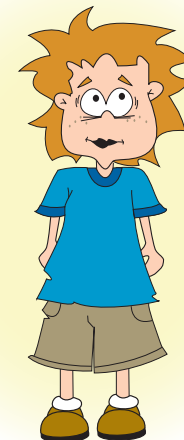
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Language and ToM

- language functioning contributes to ToM development BJ. de Villiers and P. de Villiers (2014). The Role of Language in Theory of Mind Development. *Topics in Language Disorders*. 34:313-328.
- previous studies relied on false belief tasks as metarepresentational ToM measure
- language accounted for more variance in ToM tasks that were social in nature than those that were object-oriented M. Tine and J. Lucariello (2012). Unique Theory of Mind Differentiation in Children with Autism and Asperger Syndrome. *Autism Research and Treatment*. vol. 2012, Article ID 505393, 11 pages, 2012. <https://doi.org/10.1155/2012/505393>.

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What's the Zone?



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Borrowing from a movie...



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"The Zone" is...

T. Kowalski (2010) *Are You In The Zone?* Orlando: Professional Communication Services, Inc.

- a term used to describe what most people would expect to see in a given situation
- based on the idea that for any situation, a set of expectations has already been decided upon by a majority of individuals

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Good social skills are seldom noticed

- we only pay attention to the "unusual" or "unexpected"
- Richard LaVoie calls this concept "Zero Order Skills"
 - "skills that are only significant when they fail to exist"

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When walking in a mall...



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But then
you see...

What do
YOU
do?



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No one enjoys
going to the
dentist. But is
THIS what you
expected?



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Passive & Active Awareness



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We've all been "Out of the Zone" at times

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Ever been told your zipper is down?



But did you
purposely
leave the house
KNOWING
it was down?

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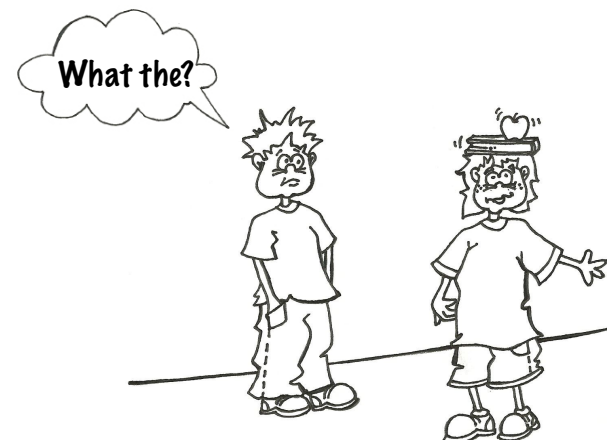
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Many people with social difficulties are
unaware how they are seen by others

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Surprise!

People **DO** think about you



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Terms used to describe these individuals

odd • weird • rude • foolish • unusual

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Why do they act that way?

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Could it be a smaller brain mass?

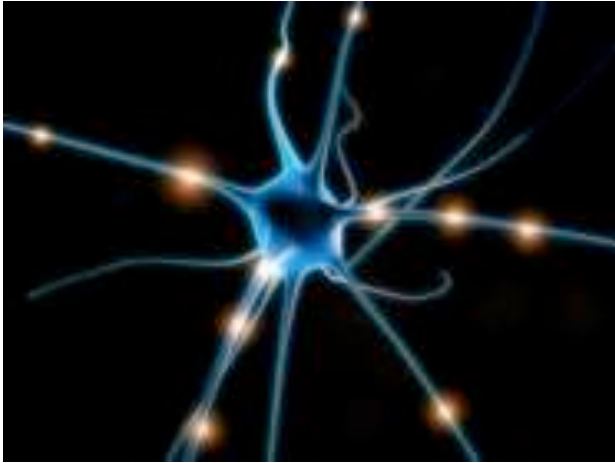


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Could it be Mirror Neurons?

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Mirror Neurons: an accidental discovery



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Do mirror neurons
impact individuals with ASD?

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Research supporting mirror neuron theory

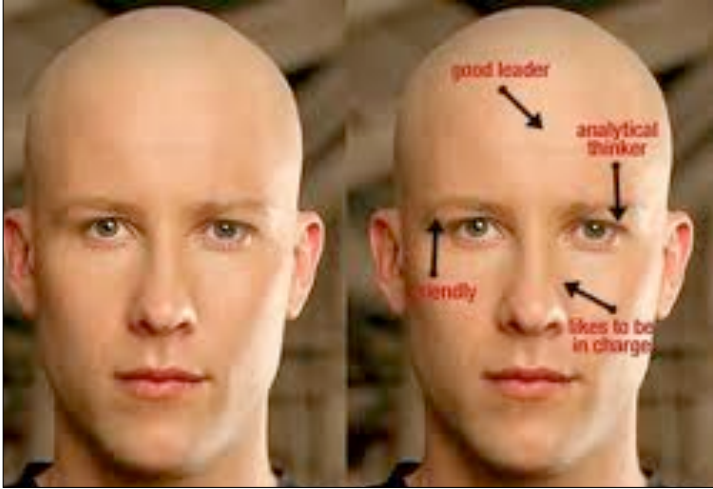
- EEG studies support the hypothesis of a dysfunctional mirror neuron system in high-functioning individuals with ASD
Obermana, L., Hubbard, E., McCleeryb, J., Altschulera, E., Ramachandrana, V., Pinedad, J., (2005). EEG evidence for mirror neuron dysfunction in autism spectrum disorders. *Cognitive Brain Research*. 24: 190-198
- mirror neurons necessary for normal development of recognition, imitation, theory of mind, empathy, and language
Obermana, L. and Ramachandrana, V. (2007). The simulating social mind: The role of the mirror neuron system and simulation in the social and communicative deficits of autism spectrum disorders. *Psychological Bulletin*. 133: 310-327

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- Research suggests that ASD is associated with altered patterns of brain activity during imitation ...[and] is likely to adversely affect the development of ToM through imitation as well as other aspects of social cognitive function in ASD
Williams, J., Waiter, G., Gilchrist, A, Perrett, D., Murray, A., and White, A. (2006). Neural mechanisms of imitation and 'mirror neuron' functioning in autistic spectrum disorder. *Neuropsychologia*. 44: 610-621

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Face reading



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This guy's face is hard to read



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