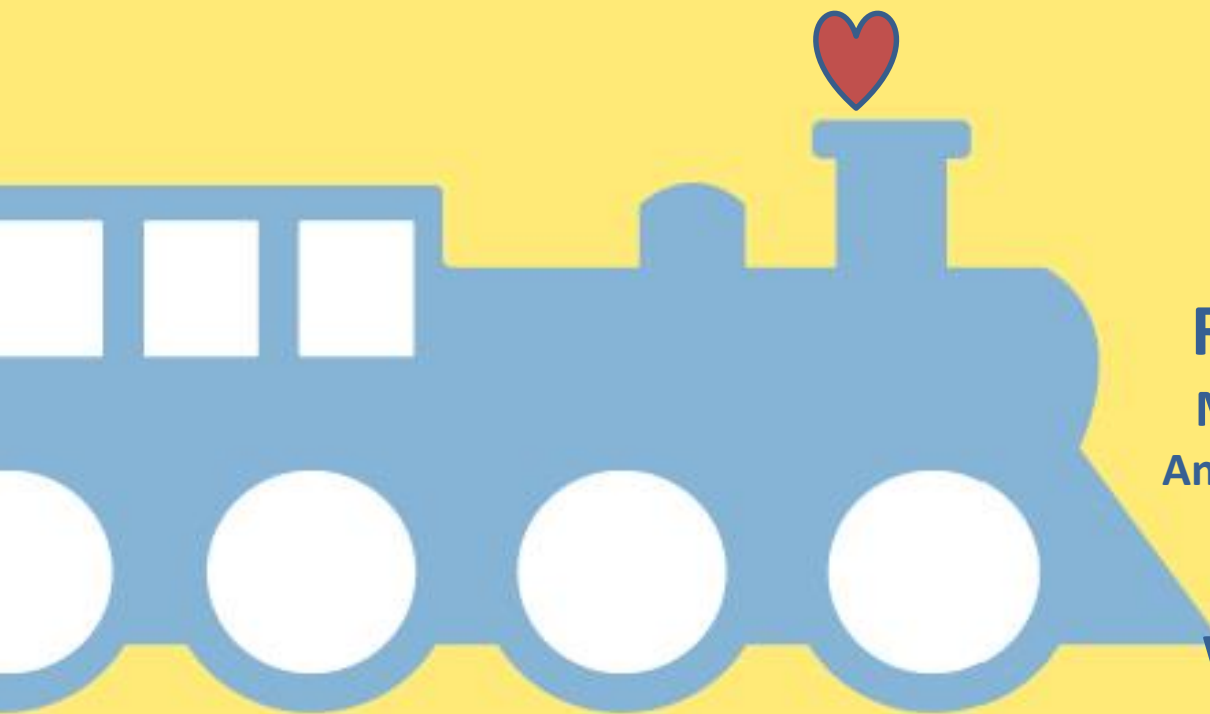




THE PLAY PROJECT™

Autism, Empathy, & Imagination



Richard Solomon, MD

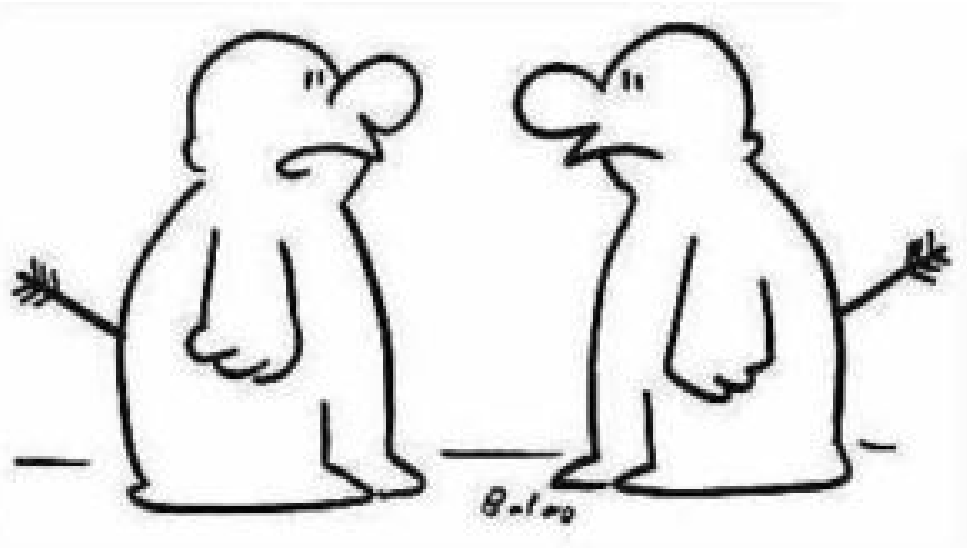
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www.playproject.org



Empathy



"I know exactly how you feel."



Introduction

- It is generally believed that children with autism cannot learn to be empathic
 - **WRONG!**
- “Autism, Empathy, and Imagination”
 - Empathy, a cornerstone of social ability, can be promoted in children with ASD if we take into consideration
 - Developmental levels
 - Relationship building
 - Imagination and pretend
 - Strategies to promote empathy



Overview

- Definitions of “Empathy”
 - Theory of Mind (ToM)
- Research
 - Neurological studies
 - Psychological studies
- Developmental considerations
- Empathy & Imagination
 - 9 Strategies for promoting empathy



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Definitions of Empathy





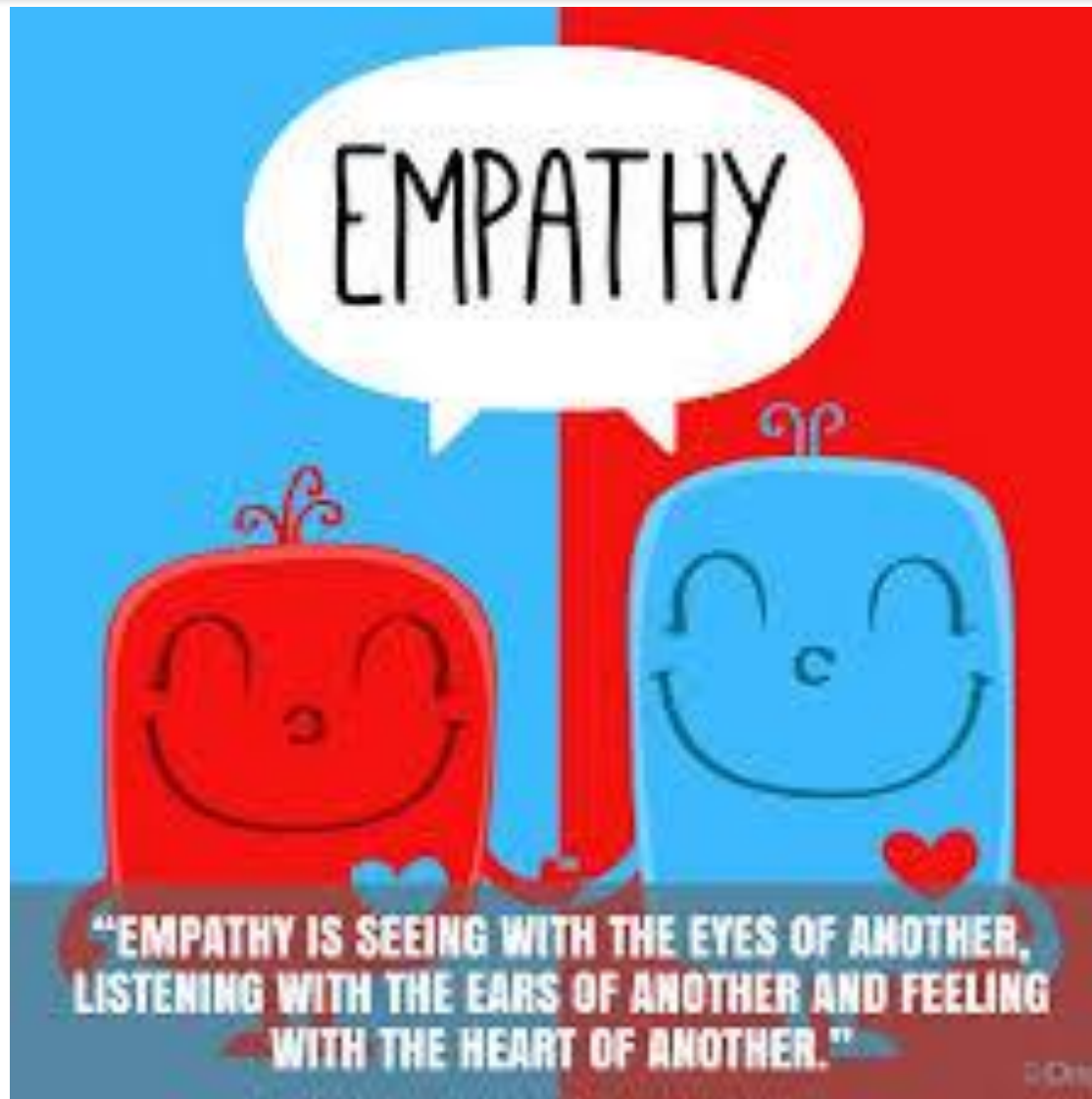
Autism, Empathy, & Imagination

Empathy: Definitions

- *Empathy*: Psychological inferences about other persons' mental and emotional states, allowing for socially appropriate emotional responses like shared affect, perspective taking, and self-other distinctions
- *In short*: Understanding how other people feel
- *Theory of Mind*: Ability to represent other persons' intentions, beliefs and desires as different from one's own



Empathy





Autism, Empathy, & Imagination

Sally-Anne: Theory of Mind (ToM) Research

This is Sally. This is Anne.

Sally has a basket. Anne has a box.

Sally has a marble. She puts the marble into her basket.

Sally goes out for a walk.

Anne takes the marble out of the basket and puts it into the box.

Now Sally comes back. She wants to play with her marble.

Where will Sally look for her marble?



Autism, Empathy, & Imagination

ToM: False Belief Tasks

- In the Baron-Cohen *et al.* (1985) study, 23 of the 27 children who are clinically unimpaired (85%) and 12 of the 14 children with Down syndrome (86%) answered the *Belief Question* correctly
- Four of the 20 children with autism (20%) answered correctly
- Overall, *children under the age of **four***, along with **most** children with autism (of older ages), answered the *Belief Question* with "Anne's box", seemingly unaware that Sally does not know her marble has been moved
- A fully-fledged ToM occurs around age 4



ToM: Critique

- There is a growing uncertainty among scientists about the importance of the underlying theory-of-mind hypothesis of autism
- In all studies that have been done, some children with autism **pass** false-belief tasks such as Sally-Anne



Empathy: Definitions

- **Affective empathy, emotional empathy**
 - Capacity to respond with an appropriate *emotion* to another's mental states
 - Our ability to empathize emotionally is based on emotional contagion: being affected by another's emotional or arousal state
- **Alexithymia**
 - An inability to verbalize emotion



Empathy: Definitions

- **Cognitive empathy**
 - Capacity to *understand* another's perspective or mental state
 - The terms *cognitive empathy* and *theory of mind* or *mentalizing* are often used synonymously
 - Due to a lack of studies comparing *theory of mind* with types of empathy, it is unclear whether these are equivalent



Autism, Empathy, & Imagination

Sympathy vs. Empathy

- **Sympathy:** Having a concern or feeling of sorrow for the other person, not necessarily feeling the same emotions as the other is experiencing in that moment
- **Empathy:** Feeling what someone else is currently feeling, an experience akin to “walking in someone else’s shoes”



Sympathy vs. Empathy

HOW TO BE SYMPATHETIC

That's too bad



HOW TO BE EMPATHETIC





Autism, Empathy, & Imagination

Emotions Related to Empathy

Considering

Caring

Sympathy

Kindness

Empathy

Compassion

Pity

Shame/Embarrassment

Guilt

The Golden Rule



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Research on Empathy





Research on Empathy

Empathy & Research

- Atypical empathic behavior in early childhood is a key symptom of ASD in children
- Atypical self-processing has been reported for ASD both on the neural and behavioral level
- Empathic abilities, emotional responsiveness and social behavior improve during adolescence and early adulthood in patients with ASD (Shattuck et al., 2007; Farley et al., 2009)



Research on Empathy

Neuro-imaging & Empathy



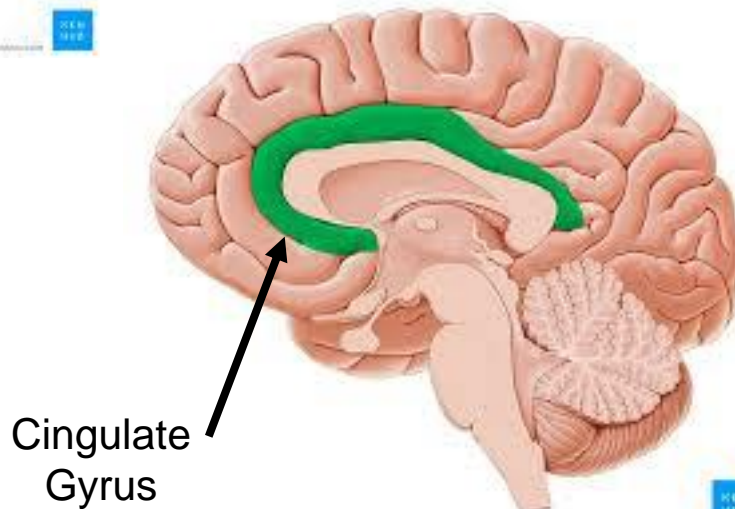
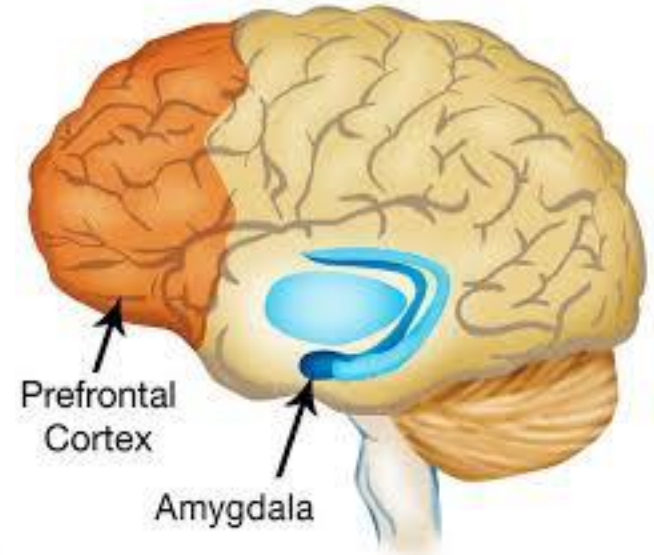
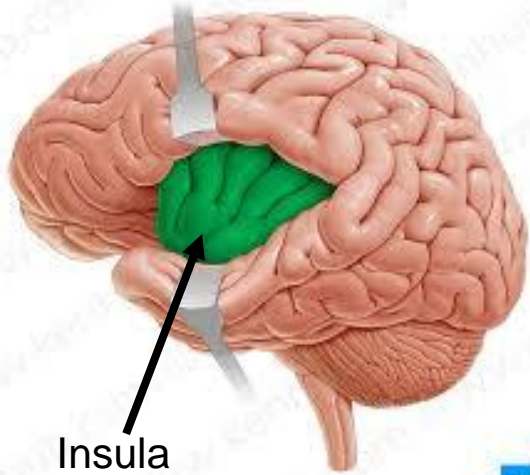


Neuro-imaging

- In ASD, most of the brain structures involved in empathic processing have been reported to show aberrant brain activation during empathy-related tasks
- A recent meta-analysis of 40 fMRI studies:
 - Affective empathy is correlated with increased activity in the **insula**
 - Cognitive empathy is correlated with activity in the **mid cingulate cortex** and adjacent **dorsomedial prefrontal cortex**



Neuro-imaging





Neuro-imaging

- Cortical areas have also been shown to play an important role for self- referential processing and self-other distinction
- Human mirror neuron system in the limbic structures and the insula foster **imitation**
 - Recent research on the mirror neuron system, however, has been overemphasized as a source of problems for those with ASD



Mirror Neurons & Empathy

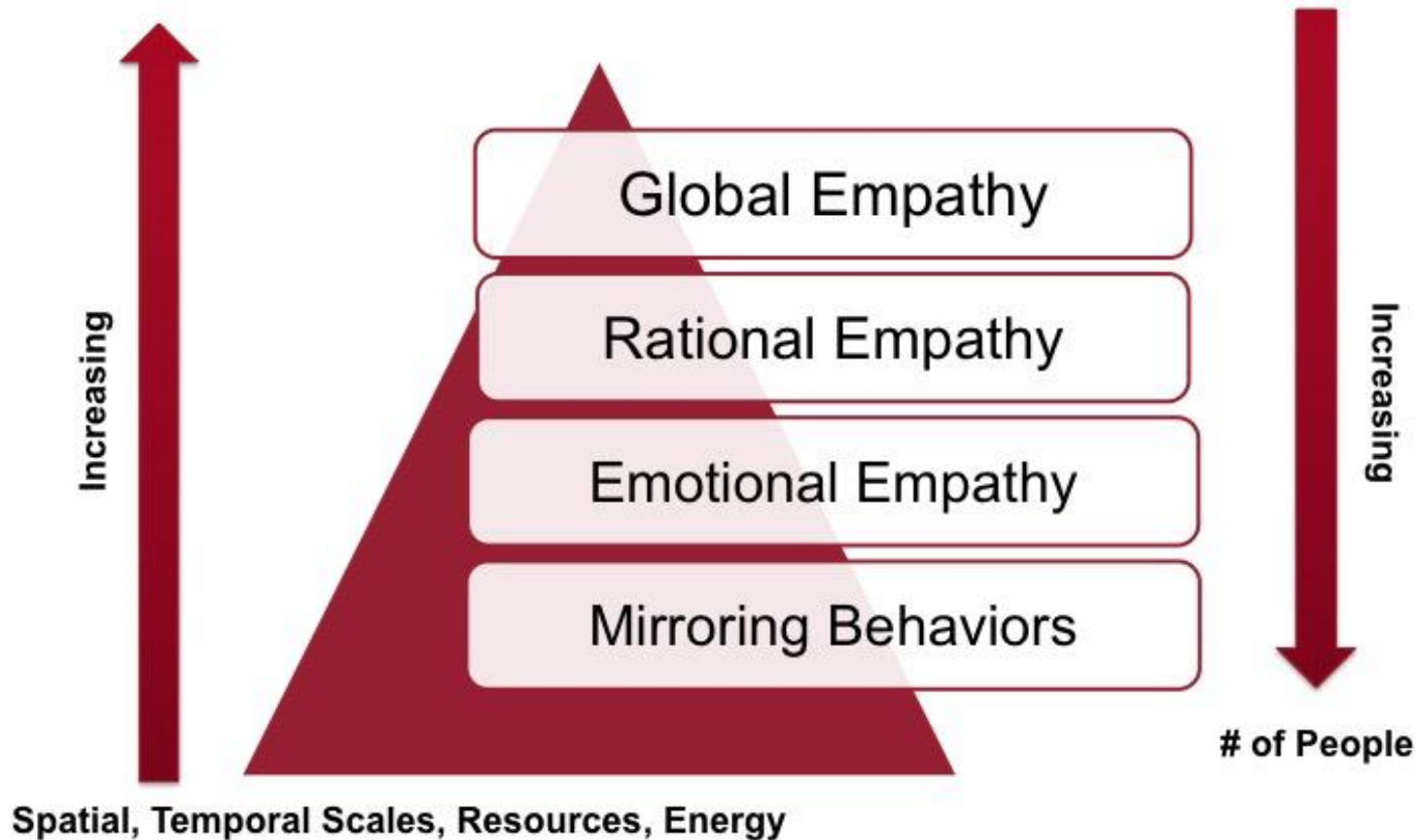
[Dev Cogn Neurosci.](#) 2013 Jan;3:91-105. doi: 10.1016/j.dcn.2012.09.008. Epub 2012 Oct 13.

- **Reflecting on the mirror neuron system in autism: a systematic review of current theories. Author: Hamilton AF**
- **Abstract**
- There is much interest in the claim that dysfunction of the mirror neuron system in individuals with autism spectrum condition causes difficulties in social interaction and communication. **This paper systematically reviews all published studies** using neuroscience methods (EEG/MEG/TMS/eyetracking/EMG/fMRI) to examine the integrity of the mirror system in autism. 25 suitable papers are reviewed. The review shows that current data are very mixed and that studies using weakly localized measures of the integrity of the mirror system are hard to interpret. The only well localized measure of mirror system function is fMRI. In fMRI studies, those using emotional stimuli have reported group differences, but studies using non-emotional hand action stimuli do not. **Overall, there is little evidence for a global dysfunction of the mirror system in autism.** Current data can be better understood under an alternative model in which social top-down response modulation is abnormal in autism. The implications of this model and future research directions are discussed.



Research & Empathy: Implications

Levels of Empathy





Empathy: Panksepp's 7 Basic Emotions

- SEEKING
- RAGE
- **FEAR**
- LUST
- PANIC/**GRIEF**
- **CARE**
- **PLAY**



Research on Empathy

Research & Empathy Implications

- Can pre-determined questionnaires, hormone studies, and brain imaging tests inform conclusions about the consciousness of human beings?
- We are not the sum of our test responses, hormones, or brain waves
- All the studies show some individuals with ASD have within normal neuro-imaging and research findings
- **The potential for empathy is hard wired!**



Autism, Empathy, & Imagination





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Empathy & Development





Empathy & Parenting

- Many studies show that empathy and other emotional behaviors stems from parents' own use of empathy towards their children
- **Sympathetic parents** help to show their children how to cope with distressful emotions more than **non-sympathetic parents****
- **Empathy is learned!!**

Barnett, King, Howard, & Dino, 1980;
Spinrad, Losoya, Eisenberg, Fabes, Shepard, et al., 1999;
Strayer & Roberts, 2004). **Eisenberg, et al., (1991)



Developmental Research & Empathy

- When caregiver acted sad or stressed out children, as early as two years of age, were showing signs of emerging empathy as evidenced by children helping, sharing, providing comfort, and attending to others in distress*
- **Empathy is hard wired!**

*Zahn-Waxler and Radke-Yarrow (1990)



Empathy & Development

Empathy & Parenting

- A secure attachment to primary caregivers is fundamental for empathy
- Mothers with positive emotional communication have children who are better able to take the perspective of others
- A father's sympathy was related positively to his son's empathy levels
- Younger children rank closer together on empathy scales with parents than do older children
- Empathy evolves over time



Four Stages of Empathy Development

- 1. Global empathy (Age B-1 y):** Develops in infancy
 - Babies cry or become visually anxious when they hear another infant crying
- 2. Egocentric Empathy (2-3 y):** Develops at age 2
 - Child understands another person is upset and/or not themselves, so they may try to comfort the other person
 - Children still believe what is helpful to them would be helpful to other people as well



Four Stages of Empathy Development

3. Early Childhood (4-6): Develops when child's role-taking skills increase

- Less egocentric and now know someone else's feelings from their own emotions entirely

4. Middle childhood (7-11): Develops when the child begins to use past experiences to understand feelings known by the other person in question



FDL, ASD, & Empathy: Implications

- Empathy in children with ASD will typically occur at later ages
 - Functional/social development is delayed
- Autism costs, on average, 2 years developmentally speaking
- Each developmental level has its 'empathic milestones' leading to true empathy based on the 'normal' progression according to Greenspan*

*Greenspan S.I. *The Development of the Ego* (1989)



- Self regulation and shared attention (FDL 1)
- Engagement (FDL 2)
- Two-way Communication (FDL 3)
- Complex Two-way Communication (FDL 4)
- Shared Meanings & Symbolic Play (FDL 5)
- Emotional/Logical Thinking (FDL 6)
- Multi-causal Thinking (FDL 7)
- Shades of Gray Thinking (FDL 8)
- Thinking off an Internal Standard (FDL 9)





1. Global empathy: FDLs 1-3

- Shared/joint attention and engagement
- Recognition of the 'other'
- Early imitation

2. Egocentric Empathy: FDLs 4-5

- Synchronized, contingent, and reciprocal interaction (FDL 4)
- Problem solving/disobedience
- True imitation and early pretend
- Symbolic pretend play



Four Stages & Empathic Milestones

3. Early Childhood: FDLs 6-7

- Kindergarten-2nd grade
- Time awareness
- Logic: Two ideas connected
- Thematic pretend with role playing
- Peer relationships forming
- Empathy emerging but still self-centered
- Winning/losing is hard
- Early literacy



4. Middle Childhood

- 3rd grade+
- Literacy established
- Strong peer relationships
- Rules, games, and flexibility
- Empathy capacity well established

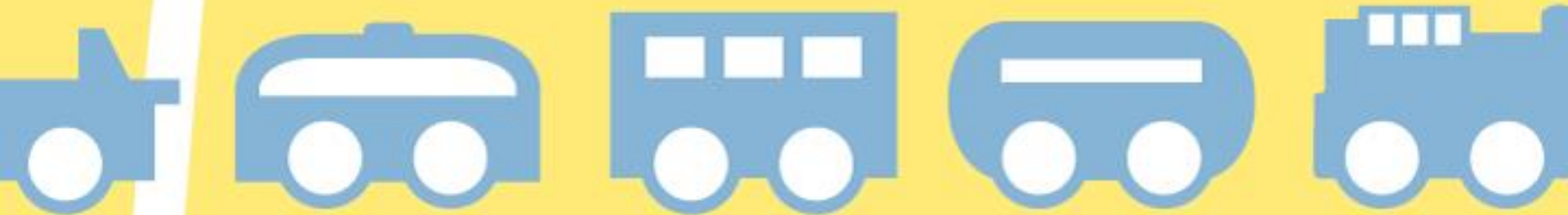


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Empathy & Imagination

9 Strategies

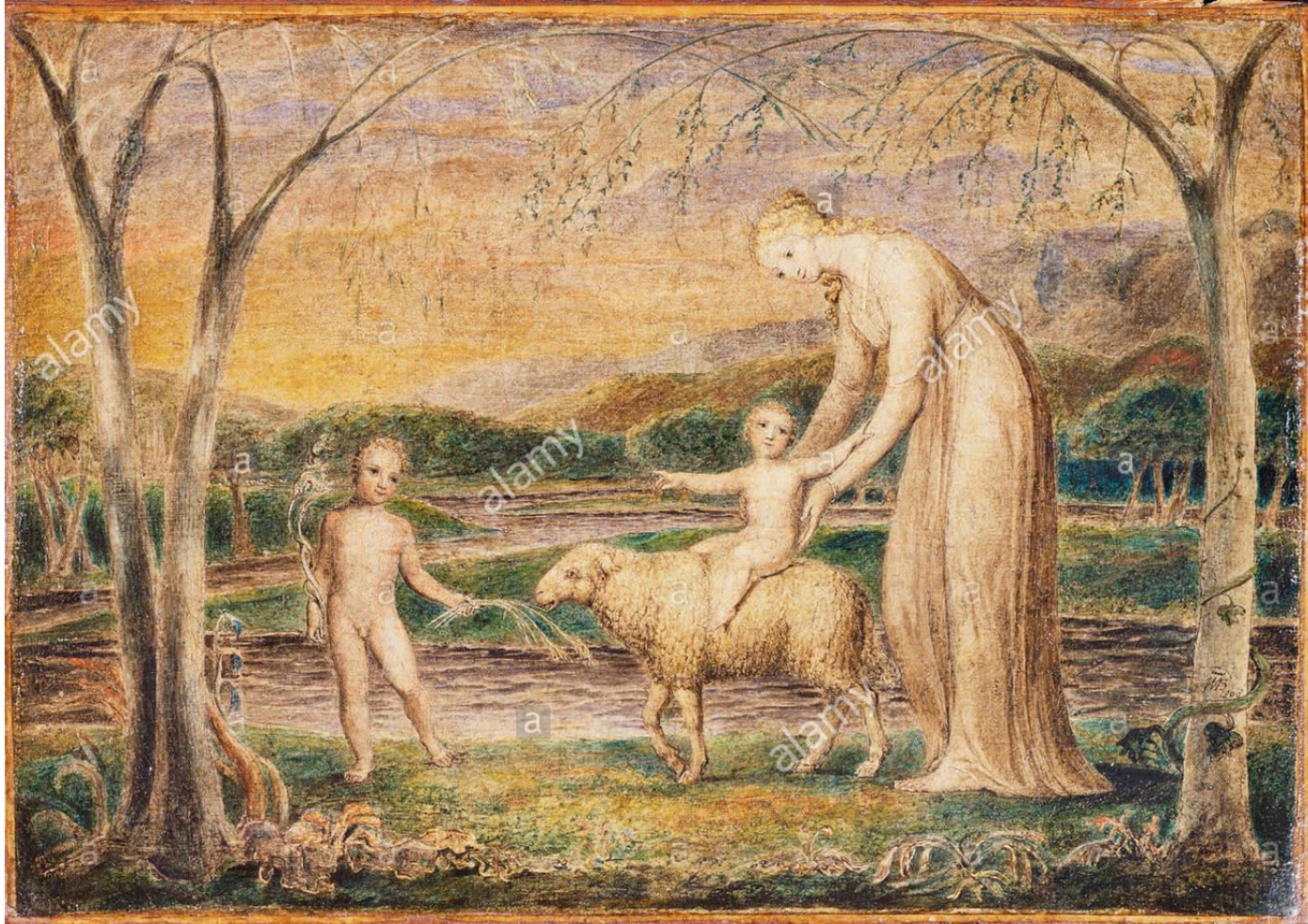
for Promoting Empathy





Empathy & Imagination

William Blake & Imagination





Empathy & Imagination

William Blake & Imagination

“The imagination is not a state: it is the human existence itself.”

“Imagination is the real and eternal world of which this universe is but a faint shadow.”

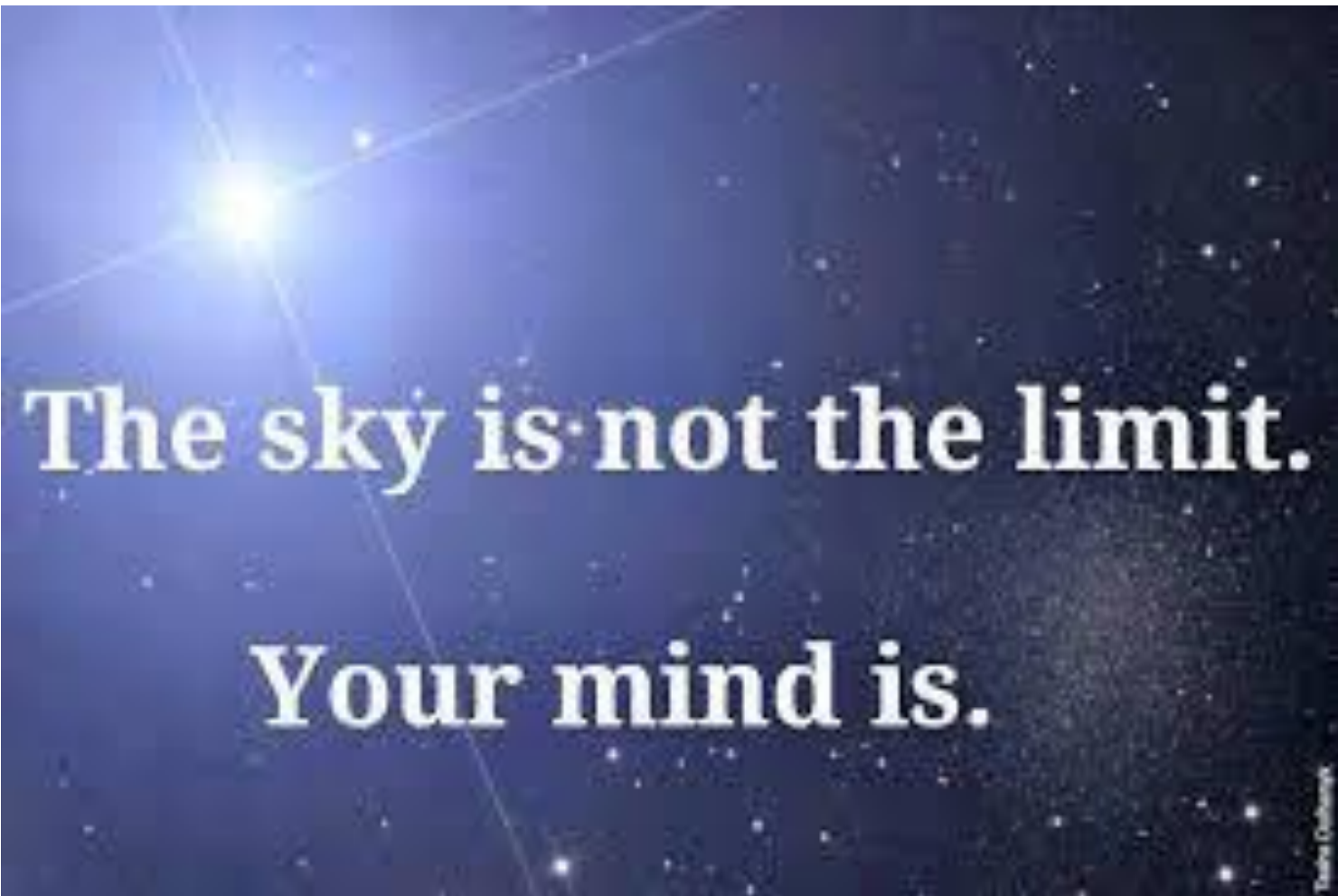
“What is now proved was once only imagined.”

—William Blake (1757-1827)



Empathy & Imagination

Autism, Empathy, & Imagination





Empathy & Imagination

Imagine Promoting These Feelings

Considering

Caring

Sympathy

Kindness

Empathy

Compassion

Pity

Shame/Embarrassment

Guilt

The Golden Rule



Empathy & Imagination

Promoting Imagination & Empathy

- Promoting does not mean forcing
- A child must be developmentally ready
- Stanley Greenspan: “wooing”
- When the child is ready, they will go there naturally
- But there are several strategies that will promote the imagination which will lead to empathy. . .



Empathy & Imagination

Promoting Imagination & Empathy

- Remember: The child with ASD has the brain circuits for **caring** and **play, fear** and **grief**
- Can we *promote* these circuits to *grow* their neurological connections?
- There are many ways to promote empathy throughout the day for parents and for those professionals who coach families
- Here are 9 Strategies to promote empathy. . .



Empathy & Imagination

Promoting Empathy: 9 Strategies

1. Daily interactions (FDLs 1-4)
2. Imitation (FDL 3-6)
3. Mirroring feelings (FDL 4-9)
4. Modeling caring/empathy (FDL 5-9)
5. Sharing positive and negative feelings (FDL 5-9)
6. Reasoning/reflecting about feelings (FDL 6-9)
7. Pretend play (FDL 4-9)
8. Books (FDL 5-9)
9. Joking (FDL 4-9)



1. Daily Interactions

- All day long parents and siblings are interacting
 - Be aware of the ‘interactional process’
- By attuning to the child, the child attunes to the caregiver, promoting **joint attention**: a social connection, the very first baby steps toward empathy
- Skillful interactions begin when parents, caregivers, and professionals use the **5 methods** of play-based developmental interventions



Promoting Empathy

1. Interactions - 5 Basic Methods of Interaction

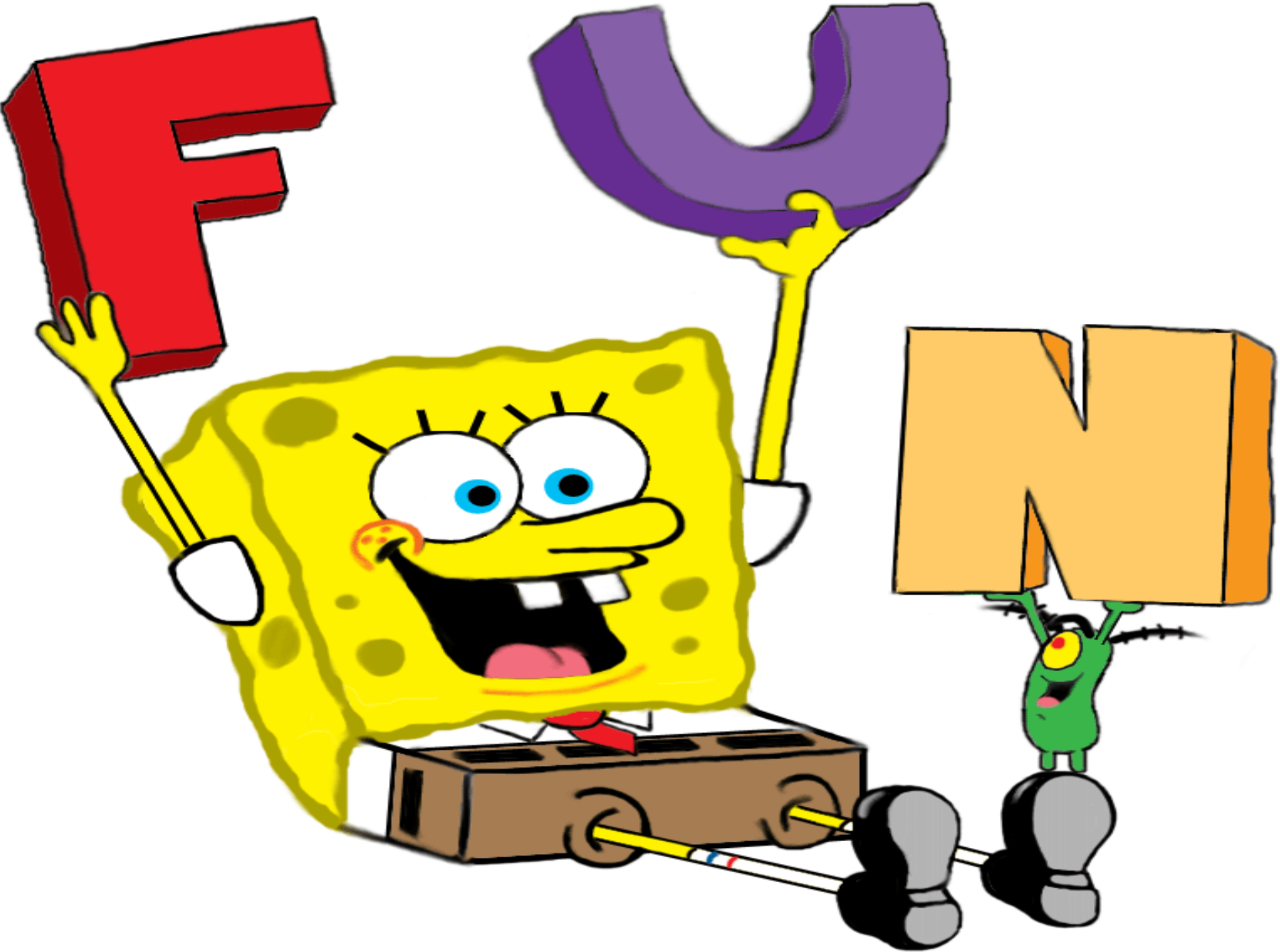
1. Follow the child's "lead" i.e. their intent or idea
2. Slow down the pace to wait for the child's idea
3. Then respond in a way that follow the child's intent or idea
4. Think about the interactional process in order to get back and forth 'circles' of communication
5. Expand on the child's intent/idea in a **fun** way to keep the interaction going



Empathy & Imagination

Fun Promotes Empathy







2. Imitation

- True imitation is not evident in infancy
 - Though they can stick out their tongues at T. Berry Brazelton!
- Imitation emerges in the second year of life around 12-14 months
 - Greenspan FDL 3-4
- Without imitation children cannot learn empathy
- Promoting imitation begins with imitating the child
 - This leads to the child imitating others



Promoting Empathy

2. Imitation - Imitation Games





2. Imitation - Imitation Games

- Simple imitation
 - Clapping, waving, high fives, kissing, running, singing
- Imitation songs
 - “Heads, Shoulders, Knees, and Toes”
 - “Wheels on the Bus”
- Simple pretend involves imitation
 - Feeding a baby, listening to a phone
- Complex imitation
 - Making silly faces in a mirror
 - Simon Says
 - Games and sports



Promoting Empathy

2. Imitation - Imitation Games





2. Imitation - Imitation Games

- 3-way modeling
 - Using others to model
 - Daddy you do it. Mommy you do it. Brother you do it.
- Eventually simple imitation leads to complex imitation
 - Making silly faces in a mirror
 - Simon Says
 - Games and sports
 - Theater



2. Imitation - Implications

- At a fundamental level, imitation is the ability to consider that the 'other' exists
- Imitation is closely allied to identification, the ability to learn by watching others and modeling after them
- This leads to more and more complex capacities like imitating caring and empathy





3. Mirroring Feelings

- Mirroring feelings is a form of complex labeling where the caregiver tells (not asks) the child how they are feeling
 - “You look so sad. Your brother
 - took your toy and
 - you want it back, now!!”
- This form of sympathetic listening is perhaps the most important form of parental empathic interaction especially when followed by caring interactions





Promoting Empathy

3. Mirroring Feelings





Promoting Empathy

3. Mirroring Feelings

- Mirroring feelings introduces the child to a range of feelings **by name**
- The child will begin to recognize and label a range of basic emotions **in themselves AND others**
 - Mad, sad, happy, disappointed, frustrated, etc.
- This ability forms the substrate of empathy
 - “If I have feelings, others have feelings”



4. Modeling Caring/Empathy

- Once a child has the capacity for complex imitation, the ability to model, and to understand basic feelings, parents can begin to **model caring and empathy for others**
- Throughout the day be aware of opportunities for demonstrating care for others' feelings
 - When someone gets hurt
 - When someone is emotionally upset
- Use video to show modeling of feelings



Promoting Empathy

4. Modeling Caring/Empathy





5. Sharing Positive and Negative Feelings

- Closely related to modeling caring/empathy is **sharing one's own feelings/emotions**
 - Both negative and positive emotions are good
 - The 'dark side' emotions
 - Anger, selfishness, not sharing, being mean, etc.
 - Pretend you are peer or sibling
- Let the children know how you feel in a way that does not create shame
 - “It is not following the child's lead to just follow their lead.”



Promoting Empathy

5. Sharing Positive and Negative Feelings

- Be careful about the difference between **guilt** versus **shame**
 - Guilt is based on **behaviors**
 - You hurt his feelings
 - Shame is based on the **person**
 - You are bad because you hurt his feelings

Guilt vs Shame



I did something bad



I am bad



6. Reasoning/Reflecting About Feelings

- Reasoning about and reflecting on feelings is different than sharing feelings
- **Reasoning** means putting two ideas together and involves the logical consequences of one's actions
 - When you don't share with your brother that hurts his feelings (empathy) AND he's not going to want to play with you
- **Reflecting** means talking about how you feel



6. Reasoning About Feelings

Our ultimate goal is for children with ASD to understand the 'Golden Rule' and be able to make mature ethical and moral decisions based on reasoning and empathy!

Golden Rules	
<u>DO</u>	<u>DO NOT</u>
★ Be gentle	★ Hurt anybody
★ Be kind and helpful	★ Hurt people's feelings
★ Work hard	★ Waste your or other people's time
★ Look after property	★ Waste or damage things
★ Listen to people	★ interrupt
★ Be honest	★ Cover up the truth



7. Pretend Play

- All the above strategies can be incorporated into pretend play
- Greenspan identifies 3 types of pretend
 - Imitative (FDL 4)
 - One-thematic (FDL 5)
 - Two-thematic (FDL 6)
- Thematic play promotes the understanding of feelings



7. Pretend Play

- In two-thematic pretend there is a story with a plot
- There is 'reasoning about feelings'
- Thematic pretend examples include:
 - Good guys and bad guys (why are good guys good?)
 - Injury and going to the hospital
 - Sickness and going to the doctor
 - Being hungry and going to dinner



Promoting Empathy

7. Pretend Play

Our ultimate goal is for children with ASD to be able to 'imagine' how people feel, to imagine the future consequences of their actions, and to use their imagination to be creative.





8. Books & Empathy

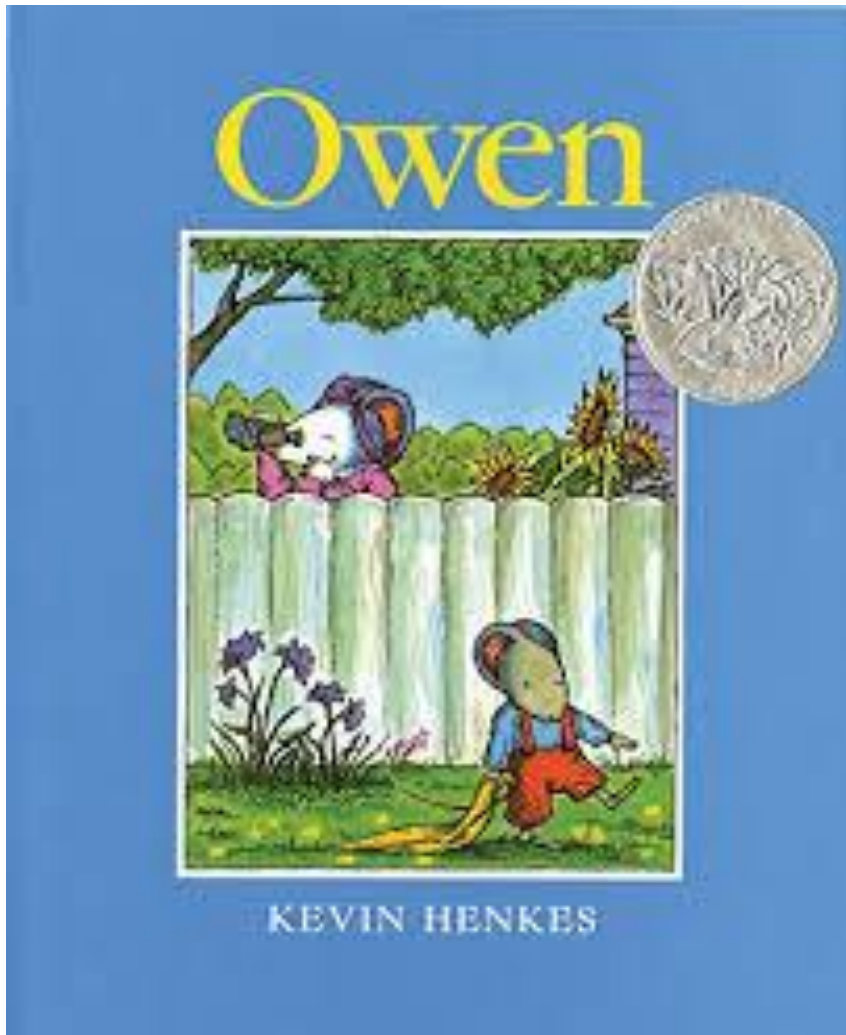
- Books encompass all the methods of invoking empathy, caring, conflict resolution. etc.
- “. . .on average, a reference to emotions or social events occurred every three sentences,” in children’s books*
- “Maternal expertise in choosing books is very productive and relates to both children’s empathy and socioemotional adjustment”*

*Aram & Aviram, 2009



Promoting Empathy

8. Books & Empathy



<https://open.buffer.com/empathy/>



Promoting Empathy

8. Books & Empathy - Best Empathy Books

1. *Owen* by Kevin Hankes
2. *The King's Equal* by Katherine Paterson
3. *The Golden Rule* by Ilene Cooper
4. *Babushka's Doll* by Patricia Polacco
5. *The Very Best of Friends* by Margaret Wild
6. *Best Friends* by Steven Kellogg
7. *That's What Friends Are For* by Valeri Gorbachev
8. *Bully* by Judith Caseley
9. *George and Martha* by James Marshall
10. *When Sophie Gets Angry—Really, Really, Angry* by Molly Bang



Promoting Empathy

8. Books & Empathy

Our ultimate goal is for children with ASD to **love** to read books. We want them to have great reading comprehension and literary insight into plot and character and write down their own opinions about what they read.





Promoting Empathy

8. Books & Empathy





Promoting Empathy

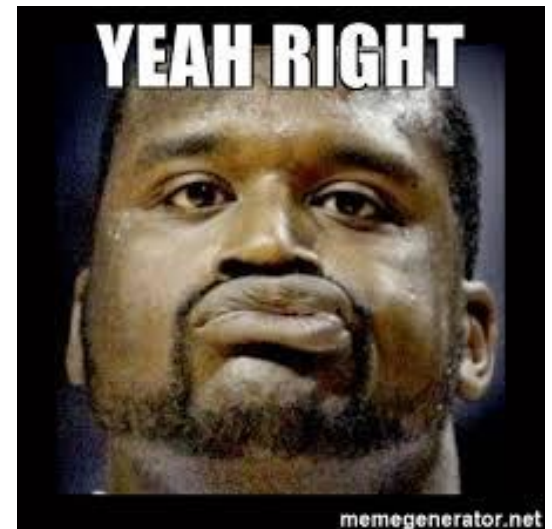
9. Jokes and Joking





9. Jokes and Joking

- The highest achievement of empathy is the ability to tell a really funny joke.
- Just joking.
- Though *I am serious about joking* as one great way to promote empathic relationships. . .





Promoting Empathy

No seriously. . .

- In fact there is a developmental progression to sense of humor that begins very early in life.



- YEAH!



Promoting Empathy

Developmentally Funny. . .

- Peek-a-boo is the first joke. A close second is. . .
- Chase: “Come back here. I’m going to get you!”
- Slap stick—Underwear on your head, Tom and Jerry, Three Stooges, Jim Carey—almost always gets a laugh.
- Tickling
- Disobedience as funny
 - Being “bad” — “Don’t you wake me up!”
- Irony—Meaning the opposite of what you you say. . .
- Jokes proper
 - Knock-knock jokes





Promoting Empathy

Knock Offs of Knock Knock Jokes



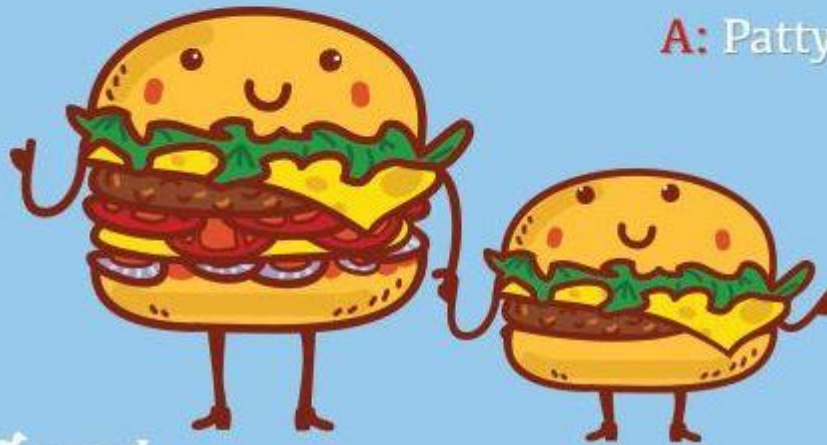


Promoting Empathy

Good Kid Jokes

Q: What did the
hamburger
name its baby?

A: Patty



Grand



Promoting Empathy

Scatological humor. . .



Underwear





Promoting Empathy

9. Jokes and Joking

Q: What did the electrician's wife say when he came home after midnight?

A: Wire you insulate?

Okay, okay

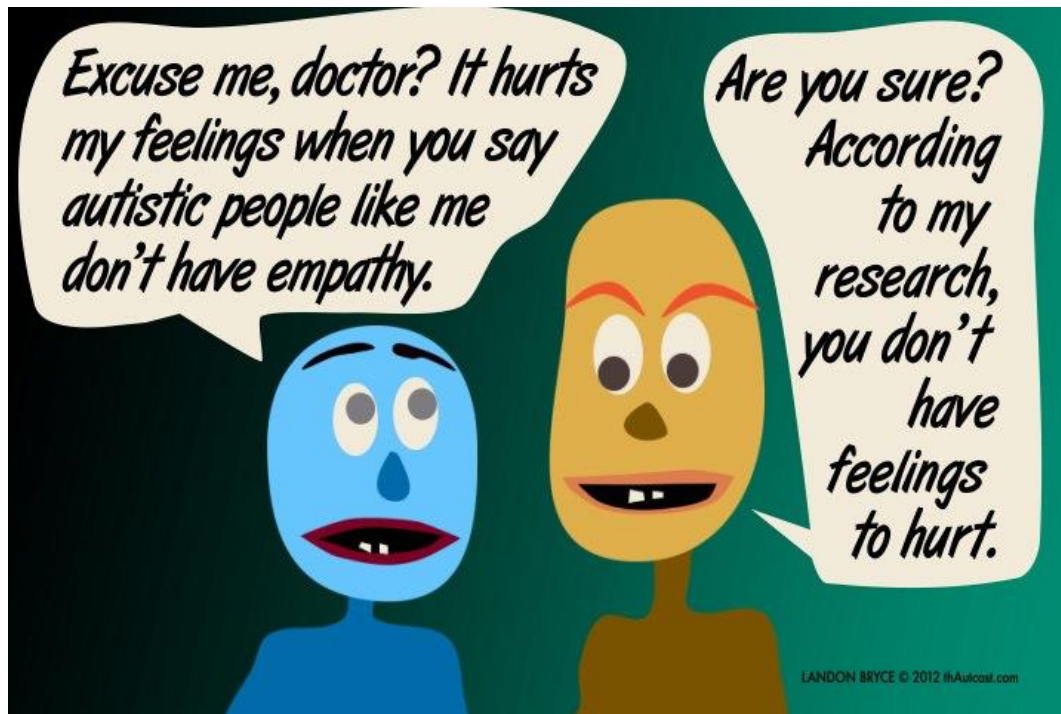
Q: What did the kid say when the Statue of Liberty sneezed?

A: God bless America!



Conclusion

It has been assumed, based on limited research, that children with ASD cannot take other's perspectives or develop empathy.





The Sky is the Limit

There is evidence that empathy is both hard wired and learned.





Compassion is Built In

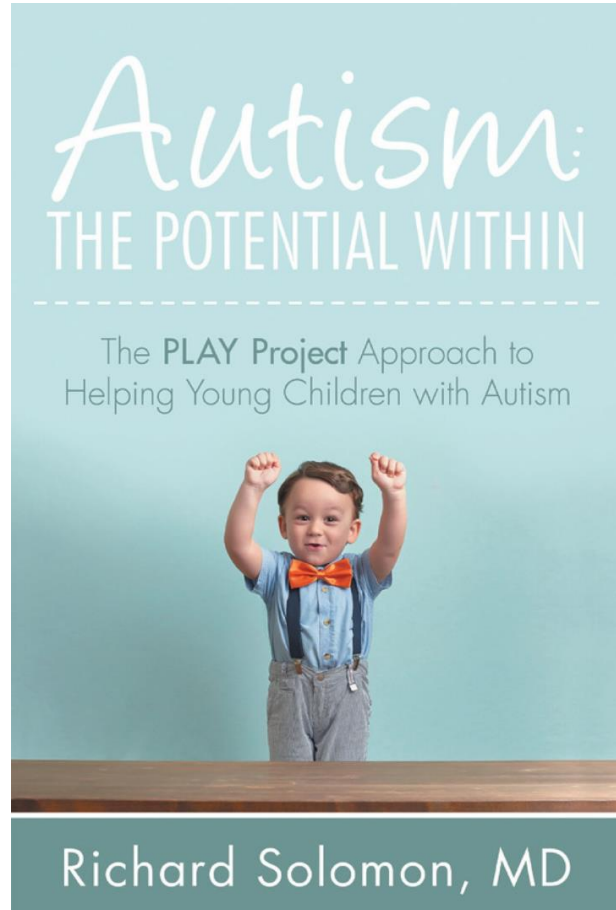
Hopefully, the strategic approach presented here will give all of you who help children with ASD ways to promote empathy and have fun all along the way.





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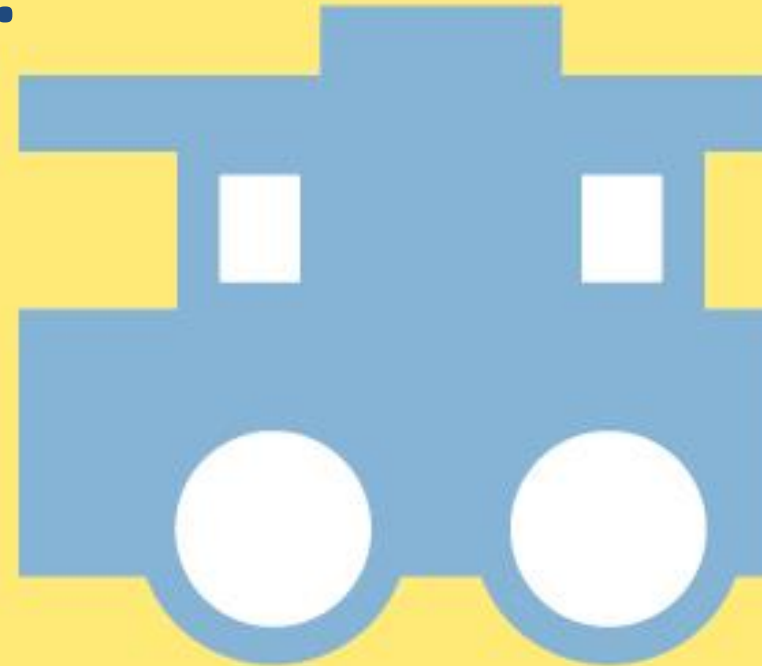
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