Teaching “Thinking for Social Problem Solving”

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Thinking and Problem Solving

• People of all ages experience problems that arise from everyday conflicts and encounters with unsatisfied needs and desires.
Thinking and Problem Solving

Many of us have learned how to resolve such problems by...

– persisting at working out a solution, or
– asking others for help, guidance or assistance.
Thinking and Problem Solving

As we grow, however, we start to encounter problems that require more than simply persisting at task or asking others for help. These types of problems require us to

- weigh options
- consider possible outcomes
- decide a course of action
Thinking and Problem Solving

- These kinds of problems require what we call “thinking”
  - “Well, that seems perfectly obvious. So, how do we teach “thinking”?”
How Do We Teach Thinking?

• To answer the above question we must first answer another.
  – That question is, “What is the problem?”
  – For as the Cheshire cat informs Alice...

"Would you tell me, please, which way I ought to go from here?"

"That depends a good deal on where you want to get to," said the Cat.

"I don't much care where—" said Alice.

"Then it doesn't matter which way you go," said the Cat.

"—so long as I get somewhere," Alice added as an explanation.

"Oh, you're sure to do that," said the Cat, "if you only walk long enough."
How Do We Teach Thinking?

• So, part of answer to “How do we teach thinking?” is dependent on “Where you want to get to.”

• Do we want to teach thinking that leads to the solution of a single problem (like writing a formula that always generate a prime number) or an ability to solve many types of problems.
  – For the purposes of this presentation we will focus on teaching thinking skills that help solve many problems of social adjustment and participation.
The Rudiments of Social Thinking Skills

• One of the first social maps or “frames” that a child must learn when developing social thinking skills is that “‘I’ am me” and “‘You’ are you”.

  – This “I/You” distinction is fundamental to understanding and thinking about social interactions.
The Rudiments of Social Thinking Skills

- A second social map or frame that a child must learn is “I am here” and “You are there”.

  – This “Here/There” distinction is also fundamental to understanding and thinking about social interactions.
The Rudiments of Social Thinking Skills

- A *third* social map or frame that a child must learn is “Now/Then”.

  - We and other people do things either “now,” or have done things “then,” in the past, or will do things “then,” in the future.
These three “maps” for “frames” establish the underpinnings of social perspective-taking and may be understood in terms of the development of a specific family of such frames called “deictic relational frames”.

In summary, these frames consist of:

I versus YOU
HERE versus THERE
NOW versus THEN
Before we can begin teaching these critical frames for social thinking, there are many precursor skills that need to be taught.

• We’ll review just a few of these precursor skills and competencies in the following slides
Precursors to Social Communication: Joint Attention

Referencing

Coordinated Joint Attention
Another Example of Coordinated Joint Attention (JA)

The organic emergence of the infants’ understanding of the specific action plans of other persons, the knowledge of which they subsequently use in their activities with others.
Behavioral Accounts of Joint Attention

Dube et al (2004) discussed how stimuli that an adult attends to become

• conditioned reinforcers following a learning history in which the attended to stimuli become predictors that the adult will respond to them,

• and that the adult’s response will result in reinforcement for the infant
Referential Looking

Early understanding that people have intentions directed to the external environment.

Underlies many important social repertoires:

• looking at others during joint play
• following people’s gaze in relation to external events and situations
• checking others emotional perspective to provide cues in novel situations
Behavioral Accounts of Social Referencing

The child observes the emotional expressions of others to appraise events and guide action.

A child may observe that her mother is smiling when a stranger approaches. A history with this type of event eventually leads to the child coming to think that reinforcement is likely when her mother smiles at someone.

Facial expression - becomes an event that establishes the stranger as someone who is positive or negative.
ABA-based skills training programs provide concrete instructions, modelling techniques and corrective feedback that directly target social skills (Miltenberger, 2004)

These programs typically include:

Social Skills Training

However, one issue that has emerged across all the behavior analytic social skills training literature is the lack of \textit{generalization} of the trained skills.

For example,...
LeBlanc, et al., 2003

An intensive behavioral intervention involving video modelling and positive reinforcement

• Sally Anne task

However, even after the intervention the ASD children’s performance on generalization perspective-taking tasks was weak

In the Sally Anne task, the experimenter uses two dolls, "Sally" and "Anne." Sally has a basket; Anne has a box. Experimenters show their subjects (usually children) a simple skit, in which Sally puts a marble in her basket and then leaves the scene. While Sally is away and cannot watch, Anne takes the marble out of Sally's basket and puts it into her box. Sally then returns and the children are asked where they think she will look for her marble. Children are said to "pass" the test if they understand that Sally will most likely look inside her basket before realizing that her marble isn't there. Children under the age of four, along with most autistic children (of older ages), will answer "Anne's box," seemingly unaware that Sally does not know her marble has been moved.
Language Ability and Understanding Other Minds

A number of researchers have linked language ability and Theory of Mind (ToM) competency (Arbib, 2005; Cutting & Dunn, 1999).

In fact, a number of studies have found significant correlations between standardized language measures and pre-schooler performance on typical theory of mind (ToM) tasks (e.g., Cutting & Dunn, 1999; Hughes & Dunn, 1997).
Fundamental Types of Language Abilities Established Through Relational Frames

same  different  opposite  causal
more / less  spatial
temporal  deictic
hierarchical

logical  analogical
Relational Frame Theory (RFT): A Significant Advance in ABA-Based Social Skills Training

Relational Frame Theory is a branch of Applied Behavior Analysis (ABA) that provides an very useful account of language, cognition and social perspective taking.

“So. What is this RFT stuff?”
RFT and Perspective-Taking

Let’s look at what RFT suggests for teaching **social perspective taking**.

RFT proposes that perspective-taking may be understood in terms of the development of a specific set of “relational frames” called *deictic* relational frames. Deitic frames specify a relation in terms of the perspective of the person who is speaking.

Consider the three frames of:

- *I versus You*
- *Here versus There*
- *Now versus Then*
RFT and Perspective-Taking

Each time a child is asked or answers questions such as:

“What are you doing here?”
“What was I doing then?”
“What am I doing now?”
“What were you doing there?”

Or, “What is she thinking now?”
(the Sally Anne question)

the physical environment will likely be different...

The only constant across such questions are the relations that exist between:

I versus You
Here versus There
Now versus Then
RFT and Perspective-Taking

*I* is always from this perspective of the person speaking being “*here,*” not from someone else's perspective, where that person is always, “*there,”* or somewhere other than where the speaker is standing.

A sense of perspective is therefore abstracted through learning to talk about one's own perspective

For example, “I am speaking from here right now” in relation to another person’s perspectives

For example, “You are listening there right now”
McHugh, Barnes-Holmes & Barnes-Holmes (2002)

RFT based tasks involve two important variables:

**Relation Type:**
- I / YOU
- HERE / THERE
- NOW / THEN

**Complexity:**
- Simple Relations
- Reversed Relations
- Double Reversed Relations
A Simple Relation Task

I have a white brick and you have a red brick

Which brick do you have?

Which brick do I have?
A Reversed Relation Task

“I’m sitting **here** on the blue chair and **you**’re sitting **there** on the black chair”

**Here:**

**There:**

"**If HERE was THERE**  
**and**  
**THERE was HERE**"

Where would **I** be sitting?

Where would **you** be sitting?
A Reversed Relation Task

“I’m sitting here on the blue chair and you’re sitting there on the black chair”

So, “If HERE was THERE and THERE was HERE”

Where would I be sitting?

Where would you be sitting?
A Double Reversed Relation Task

“Today I am sitting here on the blue chair, yesterday I was sitting there on the black chair.”

I Here Now

I There Then

"Now, let’s pretend that... the black chair is here and the blue chair is there, and today was yesterday"

Where would I be sitting now?

Where would I be sitting then?
“Humh?” If you feel confused,
Just Imagine What a Child with PDD Might Feel Like
A Double Reversed Relation Task

“Today I am sitting here on the blue chair,
yesterday I was sitting there on the black chair.”

“Now, let’s pretend that...
the black chair is here and the blue chair is there,
and today was yesterday

Where would I be sitting now?

Where would I be sitting then?
A Double Reversed Relation Task

“Yesterday I was sitting **there** on the black chair, today I’m sitting **here** on the blue chair”

Then I there

Now I’m here
A Double Reversed Relation Task

“Yesterday (then) I was sitting there on the black chair,

Today (now) I’m sitting here on the blue chair”
"Yesterday (then) I was sitting **there** on the black chair, 

Today (now) I’m sitting **here** on the blue chair"
"Yesterday (then) I was sitting **there** on the black chair, Today (now) I’m sitting **here** on the blue chair"
The Double Reversed Relation Task

“Yesterday (then) I was sitting there on the black chair,

Today (now) I’m sitting here on the blue chair”

If

Then

there

Now

here
Studies on Training Relational Perspective Taking

Four RFT training studies:

- Barnes-Holmes, 2001
- McHugh, Barnes-Holmes, & Barnes-Holmes, 2004
- Heagle & Rehfeldt, 2006
- Weil, unpublished doctoral thesis
Current Publications to Guide Teaching

**Warning**: Use only with the guidance of a Board Certified Behavior Analyst (BCBA)