Literacy:
A Neglected Route to Language and Communication for Children with Autism

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The Children I Am Focusing On

• …”follow-up studies indicate that the prognosis for the majority of individuals with autism remains poor. And despite claims to the contrary, there is little evidence that very early, intensive interventions can significantly alter the long-term course of the disorder.“

• Children over 5-6 years who have minimal or no spoken language
The Language

- Language goals lowered to Simple commands ("touch the big one")

Augmentative devices (concentrating on ‘I want …’ requests)
The Problem

- Development is stymied
  - Without organized input, often get cognitive deterioration
  - Basically language is abandoned as a significant goal

Massive resistance sets in – making child unreachable to any imposed activity
Literacy?

The basic, reasonable, dominant view

“Rather rarely, one finds a child who cannot talk but who can eventually learn to read and write, and can communicate in this way.” Silent Words (citing Elgar & Wing, 1969)
What is Literacy?

- Ability to read and write a wide range of verbal material

- The material has the qualities of a complete language system in terms of
  
  **structure** (organized sentences, all key word classes, etc.)
  
  **function** (communication about non-present, extracting messages across sentences, etc.)
How Is Literacy Possible?

KEY CHILDREN ALONG THE WAY

• Paul - Insights from hyperlexia
• Stephen - Calling upon the motor domain-
• Adam - Hiding what you know
• Boruch - Reaching the non-verbal child
• Sophia/Max - Underestimating abilities
One Aspect of Reading in Autism

Hyperlexia:

- A precocious ability to read words, far above what would be expected at their chronological age or an intense fascination with letters or numbers
- Significant difficulty in understanding spoken & written language
REBUS

Find the answer by writing the names of the objects or symbols and combining them according to the clues.

Who eats by one glass?

A

+ +

AP + ME

- -

IE + G

- -

NT +

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Literacy and Autism

• Hyperlexics- self-taught; little or no comprehension

• Children who speak but not mainstreamed-limited, scattered efforts-results uneven (some become readers, others have fragmented skills)

• Children who do not speak-almost no effort at literacy; some work on isolated skills (e.g., alphabet) –50% of children with autism are non-verbal
“Flipping the Priorities of Intervention”

- Children attracted to written language
- Children resistant to spoken language
- Expand or replace concentration on spoken language with equal emphasis on written language
Achieving Literacy
I: Using Written Language to Foster Spoken Language

• Needed a means of production
• “Natural” alternative-writing
• Resistance to/difficulties with speaking
Illustration of Hand Support
Sample Writing:
Hand Support
Sample Writing:
No Hand Support

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Letters Sheet B
## Achieving Literacy: The Domains of Language

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<th>Syntax Grammar</th>
<th>Discourse Text (comp)</th>
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Teaching Decoding

- Focus on sound patterns → the teaching to rely on applying complex verbal rules to what appear to be “simple” words (cat, pin, bed, dad)
LESSON IV.

măn  căp
lăd  sät

A man and a lad.
The man sat; the lad ran.
The man has a hat.
The lad has a cap.

LESSON Y.—REVIEW.

The cat and the rat ran.
Ann sat, and Nat ran.
A rat ran at Nat.
Can Ann fan the lad?
The man and the lad.
The man has a cap.
The lad has a fan.
Has Ann a hat?
Ann has a hat and a fan.

a  at  rat  sat
can  căp  lăd  and
The cat ran. Ann ran.
The man has a hat.
SILENT e RULE:
bit, bite;
mad, made

DOUBLE VOWEL RULE:
bed, bead
cot, coat
Achieving Literacy: The Domains of Language

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Achieving Literacy: Using All the Domains of Language

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- Phonology
- Sounds
- Semantics
- Concepts
- Syntax
- Grammar
- non content words
The Content of Noncontent Words

• The box is here.
• The box is **not** here.

• The girl is walking the dog.
• The girl is walking **to** the dog.

• The man looked **at** the car.
• The man looked **for** the car.
### Achieving Literacy: Using All the Domains of Language

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Non-Content Words: Their Effect on the Selection of Content Words

on nouns
• a, the, this, that, these, those, some ...
  • → singular, plural
    (an X, some X’s...)

on verbs
• is, are ...ing, can, wants to ...
  • → actions that can be perceived
    (is walking, are eating, ...)
Content and Non-content Words When Combined

• lead to focus on **nouns** that represent

• animate figures (**people & animals**) and a few inanimate objects (**vehicles**)

• that exist in both singular and plural forms

• **& verbs** that these objects and figures can perform

• **across time** – **present, past and future!!!** (was, were, did, is going to ...)

[Image of a slide with the text about content and non-content words when combined.]
Sample Segment of Text

Here is a kid.
She is jumping.
Sample Segment of Text

She was jumping. Now she is resting.
Achieving Literacy: Using All the Domains of Language

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Moving On To Function

- Moving from structure of language to the uses of language

- Usual focus is on language functions (desired) *within* child

- Teaching requires us to address communication—language *between* participants (adult & child)
Functions of Language viewed via Intervention

- Adult is the primary (sometimes sole) initiator

- Adult has limited options: s/he can request
  I. action "give me the car"

  II. language from child that is
      not in question form (imitation, fill in, ...)
      "Say, here is a man"

  III. language via question form
       "What is the boy doing?"
Fostering Comprehension: Creating Patterns in Question-Asking/Answering

- Who are these? Which one is not an X?
- These are Xs. This one is not an X.
- Which one can Y? Where is the X?
- This one can Y. Here is the X.
- What were they doing?
- They were Ying.
Extending the Texts

• simple science texts (e.g., needs of plants, weather patterns, animal life, etc.)

• action sequences (e.g., major events,)

• math texts (e.g., word problems, recipes, etc)

• AVOID narrative
Keeping Skills “Under Wraps”

DESpite having mastered skills, many children have little or no interest in revealing their knowledge.
Key Features of Literacy in ASD (to this point)

• reading proficiency—not limited to hyperlexics-
• high level of compliance to instruction
• use of computer—a major aid
• motor support critical
• comprehension—can be developed
• writing often easier than speaking
• adult—not be misled by “appearances” but must move slowly & systematically

The Next Step !!!!
Achieving Literacy
II: Using Written Language in Place of Spoken Language

• the problem: hitting a “brick wall” in therapy (“Boruch”)
• realizing the literacy system had all the components in place to use with non-verbal children
• the power of the computer
“Main Idea” from a Nonspeaking Autistic Child

- reproducing the meaning of sets of sentences (“the main idea”)
“Walking The Cat Back”

• from Paul -”tip of the iceberg”
• from Stephen-hand support; literacy available to many children
• from Adam-reluctance to reveal their skills; need to go slowly
• from Boruch- non-verbal children can be literate; power of the computer
• from Max/Sophia- not simply the children’s reluctance to reveal skills- also that we are not “looking”;
Why The Program Works

• the power of the computer - few comparable positive attractions in life of child with ASD

• system taps into neural circuits that subserve & extend skills of hyperlexia

• hand support → motor integration & errorless learning — vital for children with autism

• the children are drawn to organizing systems — if they can perceive that there is a system
Current State of the Program

Its Name

(Alight on Literacy)

A Light on Literacy
Basic Design of the System

• initial evaluation – both verbal & non-verbal children (5-9 years primarily)

• once enrolled, parents supplied with all materials including 10 manuals (that detail every “teaching encounter” & record results of every session)

• weekly sessions for a month; then monthly sessions for 10 months-with bi-weekly video evaluations

• monthly testing of progress (on video)
Sample Teaching Material:
2 “encounters”

this window has to be fixed  (write that)

the man is going to fix the window (write that)
Sample Teaching Material: Next 2 “encounters”

( read this)
Now the man has fixed the window.

“did the man fix the window?”
The Families

- incredibly committed, conscientious parents
- parents’ & family’s views shift dramatically
- the pleasure the child experiences
"I now realize that in my attempt to enter her world, I had given up hope that she would ever be a part of mine. I had unknowingly concluded that my sister was meant to be like this and nothing could be done. I had lost hope and given up on the possibility of my sister being more than an emotional stranger that I loved so much… The program revealed the hidden intelligence that existed within her… "I saw my sister spell my name on the computer, and for the first time felt as though I had a true place in her heart and life…"
From the Family’s Perspective

Each day I learn more and more that my sister is aware of the world and in some way experiences the world, but is unable to completely reveal the results of those experiences. Sometimes, I see my sister struggle to remain the way she was, to remain stubborn and separated. Those instances break my heart and make me afraid that she might never truly be a part of our lives. However, there are growing instances when I see the understanding behind her eyes and I am almost ashamed at the fact that I never truly noticed it until now.”
Points of Caution

- this is not a cure !!!
- the skills of language significantly ameliorate but do not solve the problems of communication
- replacing the term “nonverbal”