

**Aided Language Stimulation:
Research to Practice**
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Samuel Sennott
Linda Burkhart
Caroline Ramsey Musselwhite
Joanne Cafiero

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Overview

- Definition of Aided Language Stimulation
- Research and Theory
- In-Practice
- Autism

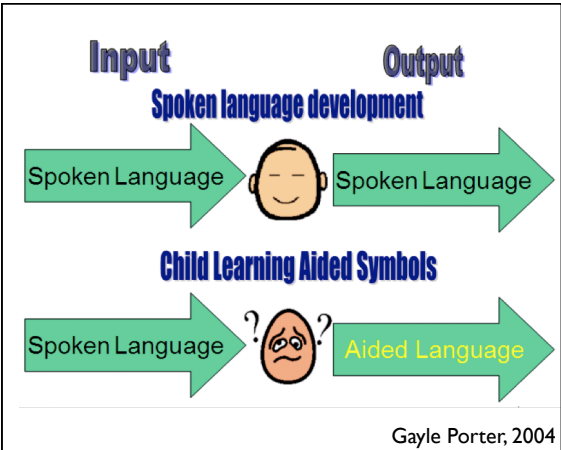
What is Aided Language Stimulation?

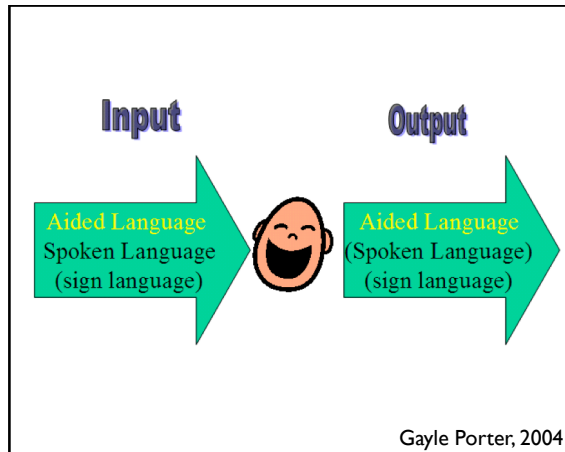
Aided Language Stimulation

- A language stimulation approach in which the facilitator points out picture symbols on the child's communication display in conjunction with all ongoing language stimulation. Through the modeling process, the concept of using the pictorial symbols interactively is demonstrated for the individual.
- [Goossens¹](#), Crain, & Elder (1992)

ALgS Assumes:

- AAC users learn language the same way typical children use language - through natural interaction in a language immersion environment





ALgS Assumes:

- Used with an AAC system that has enough generative language vocabulary to be able to say what you want to say, when you want to say it



ALgS Assumes:

- Modeling Language in Natural Contexts - All the Time - Language is Not an Activity
- Not just performing a script - Communication is Messy

What are you modeling?

- Modeling more than - "this symbol means this"
- Modeling how the symbols can be used to say real things in real situations

What are you modeling?

- Modeling ideas of what to say, when (broad range of communicative functions)
- Modeling syntax and pragmatics

What are you modeling?

- Modeling operational use
- Modeling mistakes and repair strategies

Evidence Based Practice:

**Research
as well as
Years of Clinical
Experience**



Theory and Research

Rationale 1

Learning and Using Language




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Language Development
(Adamson, 1995)

7m	Babbling
13m	First words
15m	10 words
20m	50 words
21m	Word combinations

It happens Its important

How does it happen? Important elements?

Rationale 2

Outside-In **Language Input** Inside-Out

Skinner, 1957
MacWhinney, 2000 and Bates, 2000
Tomasello, 2003

Chomsky, 1995
Pinker, 2000

Rationale 3

How do AAC users learn to use AAC?

Appropriate input for AAC users?

Input is important

Aided language stimulation

3

AAC users need input

Research Questions

- **What is the effect of aided language stimulation on the communication performance of individuals with AAC needs?**
 - Who is being served and what is the nature of the intervention?
 - What is the context and outcome of the intervention?
 - Is the research evidence substantial enough to call aided language stimulation an evidence based practice?

Methods

- **Inclusion Criteria**
 - IV was aided language stimulation
 - English peer reviewed journal (1989-present)
- **Search**
 - Psych Info, ERIC, Ancestral search of AAC journal
 - Email inquiry



Goosens', Crain, and Elder

Light tech paper display

High tech computer displays

Results

Range of age and disability
Beginning Communicators
Mostly direct selectors using their hands

Context was primarily play activities

Increases in receptive and expressive communication

Low number of linguistic models (4 to 30)

Communication Performance Effects

Goosens' (1989) <i>Beginning expressive</i>	Large: 199 symbols
Romski, Sevcik, Robinson, & Bakeman (1995) <i>Beginning expressive</i>	2 patterns: beginning: 20+ advanced: 100+
Cafiero (2001) <i>Beginning expressive</i>	Moderate: 29 symbols, 67 board
Beck, Stoner, & Dennis (2008) <i>Beginning expressive</i>	Moderate increases

Harris & Reichle (2004) <i>Beginning Receptive</i>	Expressive and Receptive gains -12 target words
Drager, Postal, Carrolus, Castellano, Gagliano, & Glynn (2006) <i>Beginning Receptive</i>	Expressive and Receptive gains -12 target words
Dada & Alant (2009) <i>Beginning Receptive</i>	Receptive most of 24 target words
Bruno & Trembath (2006) <i>Advancing Expressive</i>	Multi-symbol increases
Binger & Light (2007) <i>Advancing Expressive</i>	Large Multi-symbol increases

Discussion

- 1 Evidenced based practice
- 2 Connection to theory
- 3 Future Research

Evidence Based Practice

Strengths

5 single subject research studies

3 with adequate experimental control

All studies report moderate to large positive gains.

Results obtained are within practitioner range

Weaknesses

Lack of adequate experimental design

Lack of procedural fidelity checks

Relatively small number of studies and participants

Connection to Theory

- With input, there were language gains
- Main finding is that input is impoverished for AAC users.
 - There were gains with a minimum number of linguistic models.

Future Research

- Replications and a progression to a more balanced model.
 - words and multi-symbol
 - balanced instruction
- Increased levels of immersion
- New technologies and alternate access

ALS with Scanners (and other complex access strategies)

- Children who use scanning (light and/or high tech), often have very little opportunity to observe others using similar systems to communicate

Juggling for the Child and Communication Partner



Caution:

Just because access is difficult
- doesn't mean that language
should be watered down

Scanners have the same need to
develop language in natural
contexts through immersion

Parallel Programming



"Light Tech"
Communication Book
for Language

Switch Play to Develop Motor
Skills

Eventually: Combine
Motor and Language Skills
to Operate a
Communication Device

Communication Partners
have to learn to speak
AAC first

Be Kind to Yourself

Developing Habits: Takes
Practice!

- Shared beliefs
- Learning to have system
always within reach

Developing Habits: Takes Practice!

- Repetition with intent, purpose and variation
- Not hard, just takes practice

(three year olds can do it)

Direct Model

- Models target item for scanner
- Models "road map" to combine vocabulary
- Reduces verbal clutter of scan

Model Access method - some of the time

- full
- partial

- model initiating
- model self-talk
- light tech & high tech
- model talking to others in front of the child

- Speed up Scan with Column or Group Scan

- Expand upon what the child says

How long will we talk to children, giving receptive input, before we expect them to start 'talking'?

1 week?

3 months?

1 month?

6 months?

How many times do you think the typical 1-year-old has heard 'Daddy' modeled before s/he says it??

'Daddy?' 'Daddy!'

'Daddy!'

* * * * *

100? 1000? 5000??

**Upping the Numbers
Increasing Motivation
Use PEERS**

Communication Circles

- many circles, all over the country
- **Vanessa's Circle**
- started with 8 students
- each semester 6 new students get trained
- Vanessa picks students (w/ teacher's approval)
- waiting list
- 'subs' a.k.a. understudies!

When Circle Started

- had device for 2 years
- recently achieved good access
- knew about 15 words (in therapy)
- used about 3 words

Peer Training Strategies

- Linguistic:** games
- Magic 8 ball ('Am I crazy?' 'Will I go swimming?')
 - Silly Sentences (I can ____; I won't ____)
 - Gossip Girl (____ likes ____)
 - Tic Tac Talk

Tic Tac I Spy/ I See

I see something blue.	I see something that is big.	I see something fast.
I see something little.	FREE	I see something slow.
I see something silly.	I see animal.	I see something happy.

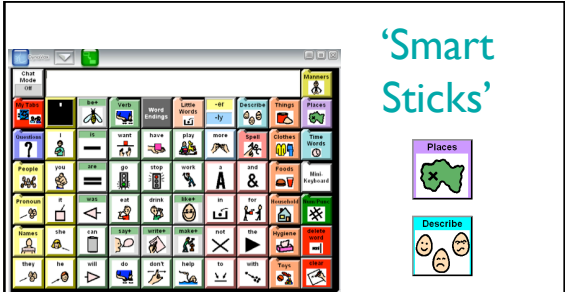
see = 	something =
that = 	fast =
slow = 	silly =

'Cheat Sheets' ... aka 'Smart Charts!'



Point out patterns!

The class is doing a unit on family relationships, so the partner has prepared a visual list of where to find symbols for Unity™ (ex: Vantage)



'Smart Sticks'

The class is talking about a field trip, and discussing places to go, and describing things they might see. The partner holds up popsicle sticks with 'Places' and 'Describe' on them for cueing.

Social: Turntaking & Filling Nonobligatory Turns

- talk about the research - to Vanessa and communication circle
- practice with conversations
- good news / bad news
- every partner, every day

Jackie & the Dog Poo

Eric: Late Again

Eric: Point Guard

Partner Roles

- **Communication partners** - just listen & interact naturally
- **Co-Conspirator** - work with Vanessa to pick gossip, etc.
- **Modeler** - aided language stim
- **Point Guard** - use laser cue

Use of Modeled Language

Phone call from Vanessa's special education director

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More Info? My website!
www.aacintertvention.com

CTG 09 Handouts



Augmented Input Strategies (ALgS, NAL, ALM, SAL) for Autism Spectrum Disorders: Rationale

- Visual processing
- Recognition vs memory for language retrieval
- ABA
- Motor Issues
- Behavioral Issues
- Robust Vocabularies

ALgS + ABA = Natural Aided Language

- The way I do “AAC Business” – “mother tongue method”
- Coined in 1994 with merging of Goossens’ Crain & Elder’s Aided Language Stimulation and Koegel & Koegel’s Natural Language Paradigm
- Enable practitioner to scientifically define protocols and scientifically measure outcomes

Contemporary ABA: NLP >PRT

- Lovaas (1992): Not possible to teach language through discrete trial training
- NLP (Natural Language Paradigm) merging of naturalistic speech-only based language interventions with strict discrete trial training language training
- Koegel & Koegel: Children with autism acquired, maintained and generalized more functional language with NLP

Pivotal Response Treatments (PRT)

- NLP now called PRT
- Strongest ABA research base for ASD with 100+ published studies
- Addresses skills that have dramatic positive effects on other skills
- Includes communicative initiations, responses

Features of PRT

- Use child choice
- Share control
- Reinforce & acknowledge all communicative attempts
- Mix mastered language with novel language at ratio of at least 4:1
- Use Intrinsic reinforcers
- Define protocols; measure outcomes

PRT + AAC = NAL

- Select activity that is reinforcing
- Share communicative control with partner
- Include vocabulary that is both familiar and novel
- Model the vocabulary naturally
- Reinforce all attempts to communicate: speech, vocalizations, aided & unaided AAC
- Define communication partner protocols and measure non-speaking partner outcomes

Natural Aided Language

- Communication partner must be active
- Language is modeled naturally through:
 - Acknowledging
 - Reiterating
 - Enhancing
 - Expanding

Augmented Input & ASD

- Decreased behavioral difficulties
- Increased communicative lexicon
- Provided a window on cognition
- Raised expectations and curriculum

Supporting NAL in the Real World: Communication Partnerships

- Engineered Environment Checklist (PreK/ Primary and Middle/High)
- Natural Aided Language Communication Partner Inventory
- Natural Aided Language Comboard Checklist
- Group Instruction with AAC Checklist

NAL Communication Board Checklist

Did the language board include	Board 1 (date)	Board 2 (date)
Activity specific vocabulary?		
Core vocabulary?		
Driving vocabulary?		
Requesting vocabulary?		
Terminating vocabulary?		
Mix of novel and familiar vocabulary?		
Student-specific vocabulary?		
%		

NAL Communication Partner Checklist

Did the partner	Baseline	Probe 1	Probe 2	Probe 3
have a reinforcing activity?				
Interact with AAC?				
Share control?				
acknowledge attempts with AAC?				
Reiterate with AAC?				
Expand with AAC?				
Mix new & mastered				
Give wait time?				
Sabotage?				
% mastered				

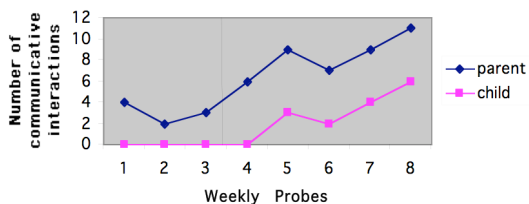
Aided Language & Group Instruction for ASD

Critical Features	Baseline	Probe #1
1 ^o Facilitator is auditory & visual focus		
Students grouped by engagement		
Activity is reinforcing		
Hands-on opportunities		
Comboards for each student		
2 ^o facilitator are quiet; use NAL		
2 ^o facilitators reiterate 1 ^o		
2 ^o expand language of 1 ^o		
Large moveable visuals for intense input		
No multiple I on I		
NAL to end activity		

Measuring Outcomes

- Importance of the communication partnership
- PODDS as the model
- Engineering the environment
- Creating communication opportunities

Number of Communicative Initiations and Responses: Parent and Child with and without NALS



The Augmented Input Strategies for ASD: The Sticky Questions

- How important is the static display? What about dynamic display AAC?
- How can we train communication partners completely so that they can provide augmented input?
- What is a reasonable amount of time to give augmented input? months? Years?
- What is the language development trajectory for communicators with ASD receiving augmented input?

It's not what you **know**, it's what you **do** that counts

alltogetherwecan.com

Lburkhart.com

aacintervention.com

joannecafiero.com

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