

# Empowerment Through the Use of an Auditory Communication Book – Sanna's Journey



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# Sanna year 2003

- 14 years old
- Severe cerebral palsy and visual challenges
- Communicated with yes and no answers, simple SGD's and large PCS symbols
- Mostly single-symbol messages
- Passive in her communication
- Communication aids did not meet her communication requirements





# Changing channels



- No more symbols
- Use of auditory scanning as Sanna's main method of communication
  - partner assisted auditory scanning
  - communication books with auditory scanning
- Speech therapist started to design a new communication book based only on auditory scanning



# Through trial and error

- Goal was to meet Sanna's communication requirements and develop her skills further
- Huge help from Gayle Porter
  - PODD-ideology
  - auditory material
- First auditory communication book was developed
  - pragmatic starters
  - categorization
  - word classes mostly separated→ better but still lacking

Read out loud the following list from top to bottom. Read each word / sentence exactly as written. I will shake my head "no" or nod my head "Yes" to indicate the word I want to say. Turn to the page number on the right to hear more of my message.		1
I've got more to say	go to 7	
quick chat	go to 2	
something's wrong	go to 3	
opinion words	go to 5	
Let's go somewhere	go to 12	
I'm asking a question	go to 6	
I want something	go to 11	

An example of Gayle Porter's Auditory Scanning PODD.

# Final result – AACi's Ears











- Based on Gayle Porter's PODD Communication Books
- Pragmatically organized
  - pragmatic starters
  - large vocabulary
  - categories
  - organization promotes multi-word messages
  - grammatical markers
- Based solely on auditory scanning – no symbols

# Pragmatic starters



1	Starting page
2	Quick messages/comments
3	Something wrong
4	Health, bodyparts...
5	Question
6	Opinion
7	News-pages
8	Categories
9	Time
10	Special days
11	Places
12	Free time
13	Food and drink
14	Clothes
15	Home
16	Traveling
17	People
18	Verbs
19	Descriptive
20	School
21	Animals
22	Nature
23	Beauty and hygiene
24	Numbers and letters
25	Things

Starting page	
I want to tell you something	Ask 7 / 8
Quick message or comment	p. 2
Something's wrong	p. 3
I'm asking a question	Ask 5 / 8
I've got an opinion	p. 6
I want something	Ask 8 / 12
Let's go somewhere	Ask 8 / 11
I would like to...	p. 8
I want to show you something	p. 7d
I've got a secret	p. 8
I've got an idea	p. 8
Read this page from the start	

# Multi-word utterances and grammatics

Clothes		
<b>People</b> yes  no 	<i>possessive</i> I / me you he / she	it mother sales person <i>someone else s. 17</i>
<b>Verbs</b> yes  no 	<i>negative form (not)</i> <i>past tense</i> be have (to) want (to) buy get	put on take off change try borrow like <i>another verb s. 18</i>
<b>Descriptives</b> yes  no 	beautiful lovely new old broken same	different wet dirty  <i>another des. s. 19</i>
<b>Clothes</b> yes  no 	<b>next page</b> shirt pants T-shirt socks	underwear jacket jeans pantyhose long underwear

Clothes		
	skirt pyjamas sweat pants sweater shorts rain jacket scarf mittens hat	swim suit shoes sneakers boots sandals
<b>Accessories</b> yes  no 	necklace earrings ring bracelet purse backpack glasses sunglasses wallet	cap belt pocket zipper

Ask, if he/she wants to go to categories or to the beginning of this category.





















1	Starting page
2	Quick messages/comments
3	Something wrong
4	Health, bodyparts...
5	Question
6	Opinion
7	News-pages
8	Categories
9	Time
10	Special days
11	Places
12	Free time
13	Food and drink
14	Clothes
15	Home
16	Traveling
17	People
18	Verbs
19	Descriptive
20	School
21	Animals
22	Nature
23	Beauty and hygiene
24	Numbers and letters
25	Things


## Starting page

I want to tell you something	Ask 7 / 8
Quick message or comment	p. 2
Something's wrong	p. 3
I'm asking a question	Ask 5 / 8
I've got an opinion	p. 6
I want something	Ask 8 / 12
Let's go somewhere	Ask 8 / 11
I would like to...	p. 8
I want to show you something	p. 7d
I've got a secret	p. 8
I've got an idea	p. 8
Read this page from the start	






















## Main categories

<b>Starting page</b>	yes 	<b>p. 1</b>
no 		
<b>Next page</b>	yes 	<b>next page</b>
no 		
<b>time</b>	yes 	<b>p. 9</b>
no 		
<b>special days</b>	yes 	<b>p. 10</b>
no 		
<b>places</b>	yes 	<b>p. 11</b>
no 		
<b>free time</b>	yes 	<b>p. 12</b>
no 		
<b>food and drinks</b>	yes 	<b>p. 13</b>
no 		
<b>clothes</b>	yes 	<b>p. 14</b>
no 		
<b>home</b>	yes 	<b>p. 15</b>
no 		
<b>travelling</b>	yes 	<b>p. 16</b>
no 		



## Main categories

<b>people</b>	yes 	<b>p. 17</b>
no 		
<b>verbs</b>	yes 	<b>p. 18</b>
no 		
<b>descriptives</b>	yes 	<b>p. 19</b>
no 		
<b>school</b>	yes 	<b>p. 20</b>
no 		
<b>animals</b>	yes 	<b>p. 21</b>
no 		
<b>nature</b>	yes 	<b>p. 22</b>
no 		
<b>healt, bodyparts and aids</b>	yes 	<b>p. 4</b>
no 		
<b>beauty and hygiene</b>	yes 	<b>p. 23</b>
no 		
<b>numbers and letters</b>	yes 	<b>p. 24</b>
no 		
<b>stuff and things</b>	yes 	<b>p. 25</b>

If person answers no, go back to beginning of main categories.

## Clothes

### People

yes 

*possessive*

I / me

you

he / she

it

mother

sales person

*someone else s. 17*

no



### Verbs

yes 

*negative form (not)*

*past tense*

be

have (to)

want (to)

buy

get

put on

take off

change

try

borrow

like

*another verb s. 18*

no



### Descriptives

yes 

beautiful

lovely

new

old

broken

same

different

wet

dirty

*another des. s. 19*

no



### Clothes

yes 

**next page**

shirt

pants

T-shirt

socks

underwear

jacket

jeans

pantyhose

long underwear

no



## Clothes

skirt

pyjamas

sweat pants

sweater

shorts

rain jacket

scarf

mittens

hat

swim suit

shoes

sneakers

boots

sandals

### Accessories

yes 

necklace

earrings

ring

bracelet

purse

backpack

glasses

sunglasses

wallet

cap

belt

pocket

zipper

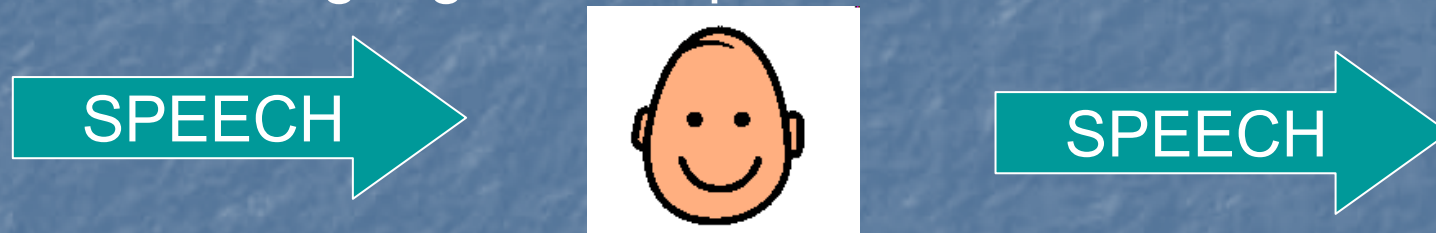
no



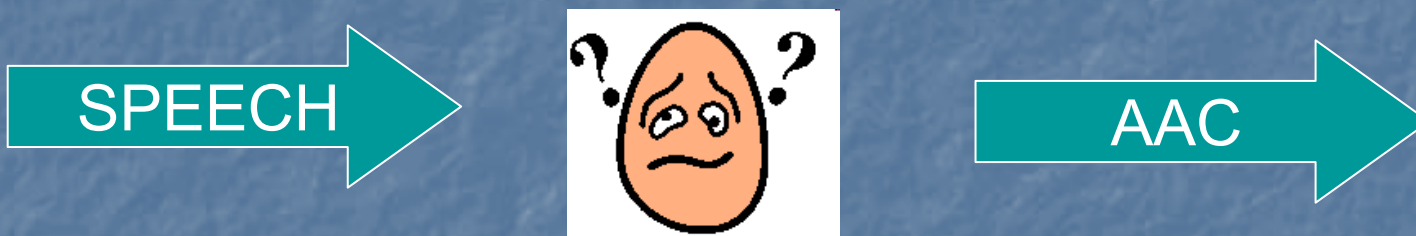
**Ask, if he/she wants to go to categories or to the beginning of this category.**

# Aided language stimulation

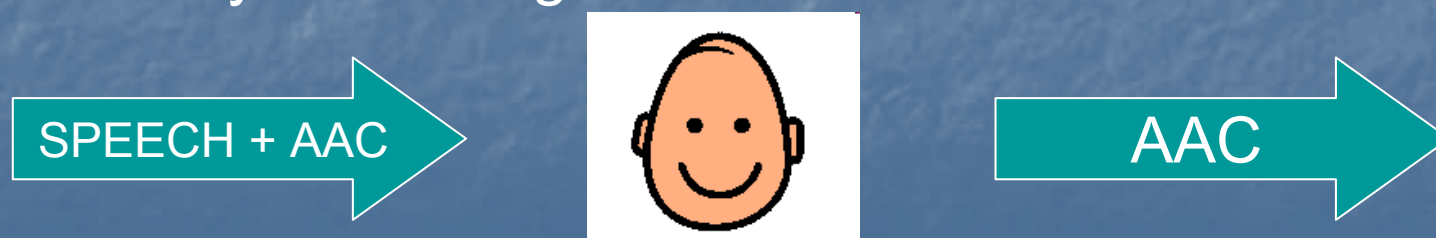
Normal language development:



Common development for AAC:



The way it should go:



# Aided language stimulation

- Challenging with auditory communication books
  - time constraints
  - conversational flow constraints
- Crucial for learning
  - how to auditory scan
  - how to use pragmatic starters
  - how to locate vocabulary
  - what can be said with the system
  - how to manage its limitations



# Sanna learning new skills

- Learned fast and started to produce multi-word messages within months
  - longer messages
  - more correct word order
  - better inner speech
- More active in her communication
  - comments to peers
  - more communicative functions, e.g. questions
  - more initiation of communication
- Personality was showing more



# More independence through the use of a computer

- Parallel programming
  - practiced two-switch scanning in cognitively and linguistically simple tasks
  - when using AACi's Ears motor demands were low
  - goal to combine these skills
- Meanwhile Sanna's communication book was transferred to Speaking Dynamically Pro
  - identical to manual due to memory demands

# AACi's Ears on Speaking Dynamically Pro

Back to main categories

Malliteksti

<i>Possessive</i>	<i>not</i>	beautiful	shirt	necklace
I	<i>past tense</i>	lovely	pants	earrings
you	be		t-shirt	ring
he / she	have	new	socks	bracelet
it	want	old	underwear	purse
we	go	broken	jacket	backpack
mother	buy	same	jeans	glasses
father	get	different	pyjamas	sun glasses
sales person	put on	wet	sweater	wallet
someone else	take off	dirty	shorts	cap
mistake, out of here	change	other descriptive	rain jacket	belt
	try	mistake, out of here	scarf	pocket
	borrow		mittens	zipper
	like		hat	mistake, out of here
	other verb		cap	
	mistake, out of here		swimsuit	
			shoes	
			sneakers	
			boots	
			sandals	
			mistake, out of here	

Say message

Delete message

Delete last word

# Computer's pros and cons



- Independence
- Not reliable on communication partners skills
- Possible to work on messages while partner is doing something else



- Motor demands very high
  - importance of posture
- Computer not a smart partner
  - mistakes very frustrating
- Even more time consuming
- Computer not as easily accessible



# Future challenges

- Von Tetzchner and Grove (2003): An environment which supports the acquisition of alternative language forms does not seem to come naturally
- Training people how to skillfully use Sanna's communication aids
  - to react to her communicative initiations
  - to be a competent communication partner who can scaffold Sanna's communication
  - to use assisted language stimulation in everyday situations
  - to technically cope with Sanna's computer
- Time restrictions
- Staff restrictions

# Impact on Sanna's life

- Gained more control of her life
- Formed new relationships and was able to strengthen old ones
  - able to share feelings, information, hopes, wishes...
- Started to use interpretation services for people with complex communication needs
  - widening her social networks
- Gave a lecture with me in the Finnish National Conference of AAC :)



# Thank you for listening!

