

Webinar
Edmonton Regional Learning Consortium
February 16th 2017

Making the environment communicatively accessible

Stephen von Tetzchner

Department of Psychology, University of Oslo
s.v.tetzchner@psykologi.uio.no

Overview

AAC as language development – here the focus is on aided language

Informed by theories of language development rather than learning theory

All language development needs a supportive environment

The aim of AAC intervention is to promote the development of autonomy and authentic communication

Intervention may focus on scaffolding and teaching

Experiences from «Becoming an Aided Communicator» (BAC)

Children developing AAC are creative

Language development

Language development is the process by which children come to share their culture's means of communication, mainly spoken and to some extent signed language.

Language development is dialogical: Both builds on and promotes social abilities

The underlying drive in language development is to solve engaging communicative challenges (e.g., Bloom, Nelson, Tomasello, Trevarthen)

Children are active language investigators but cannot create language independently; they need guidance from a language-supportive environment.

Language internalization and externalization

Communication and language make possible social interchange about people, personal needs, feelings, knowledge, ideas, interests, activities, etcetera.

Children gradually internalize the communicative practices of the culture by observing and interacting with adults and children.

In parallel they become able to “externalize” their feelings, ideas and wishes, make them known to others.

Language is not imitation and repetition but creative construction based on language experiences.

(Nelson, 2007)

AAC represents a developmental pathway to communication and language competence

Children who use communication aids are always speech impaired, but their aided language is not a deficit: All forms of language development are significant achievements!

When development of AAC is possible, the child characteristics somehow interact with parameters of these systems to enable the emergence of communication and language skills.

As has been demonstrated many times: Children with limited speech can communicate for a variety of purposes – provided they are given means and opportunity.

For children with severe motor impairment, communication and language may in fact be their best skill.

Theories are intellectual tools for explaining typical and atypical developmental trajectories

There are different conceptualisations of language development, from nativism to learning theories.

In current non-nativist theories, language emerges as the result of a social construction within a biological framework.

The emerging language competence is a function of the child's developmental achievements and social interactions with and guidance from more competent language users, and the interaction partners' ability to engage in conversations and create shared contexts.

Both the biological foundations – including the body – and the environment can vary. Some children need an adapted environment.

From theory to practice

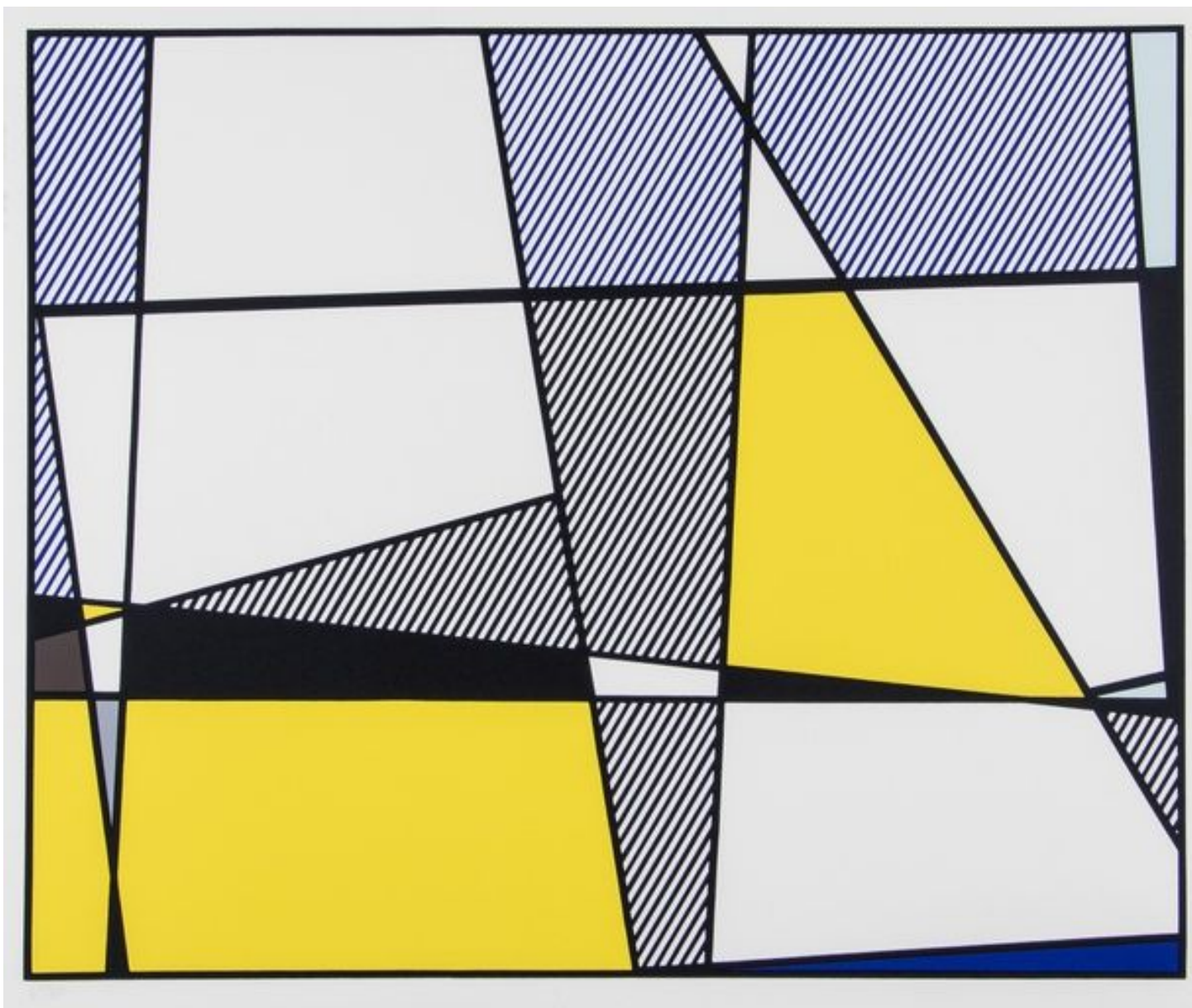
Implicit and explicit assumptions about language development will determine how practitioners attempt to promote communication and language development.

There is a dialogical relationship between theory formation and empirical study but it seems to be difficult to formulate a sound theory of for example aided language development from observations of natural speech and aided communication and theoretical reflection, and to “translate” the theory back into practice.

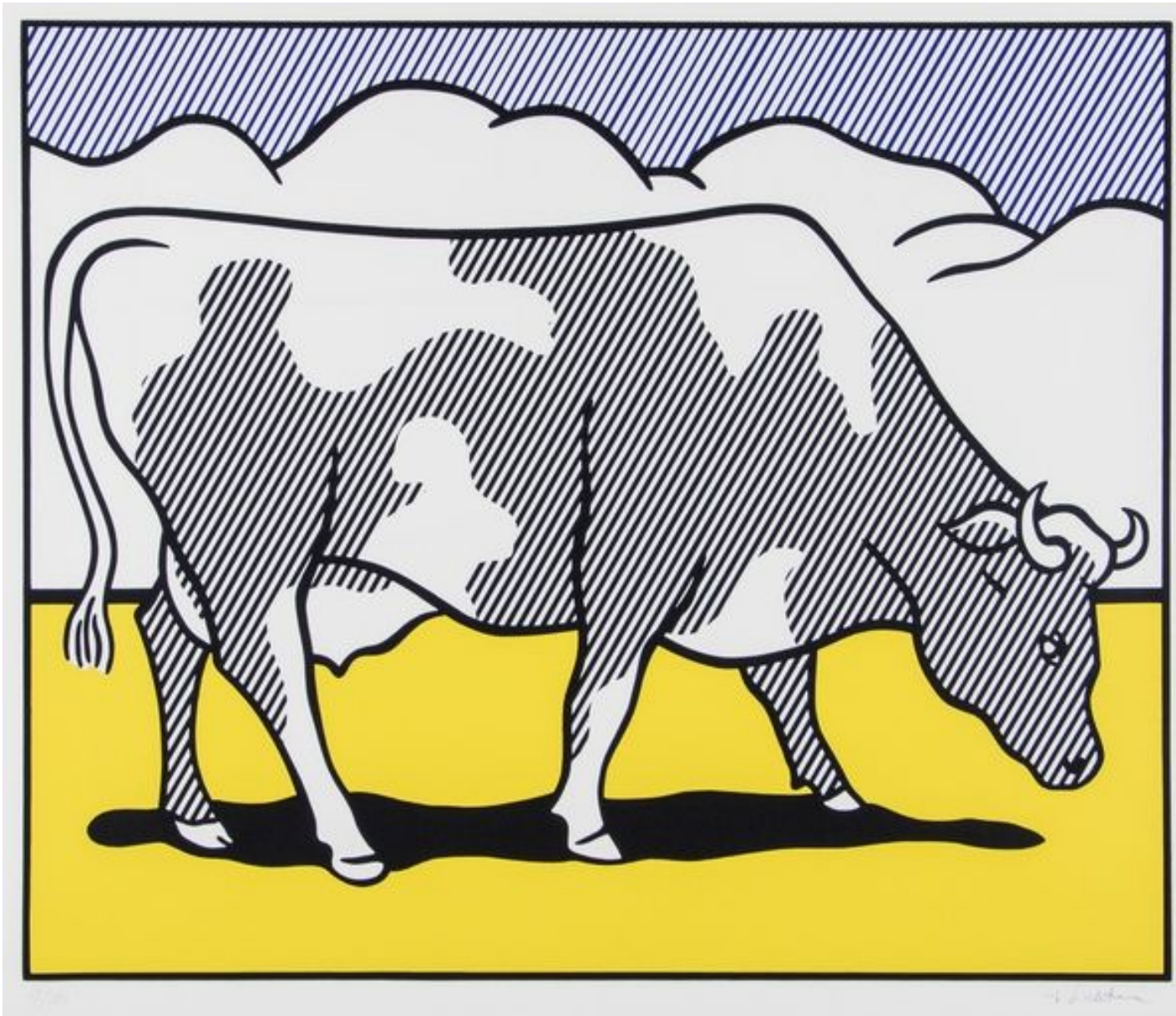
What are the practical implications of a theoretical perspective for internalization and externalization of language?

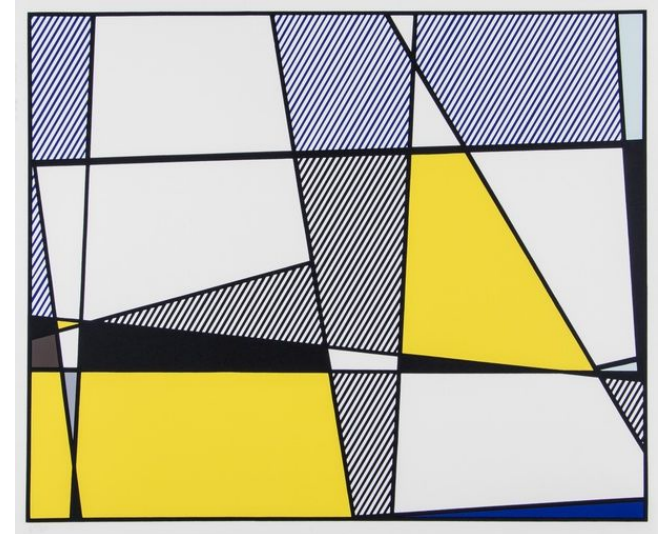
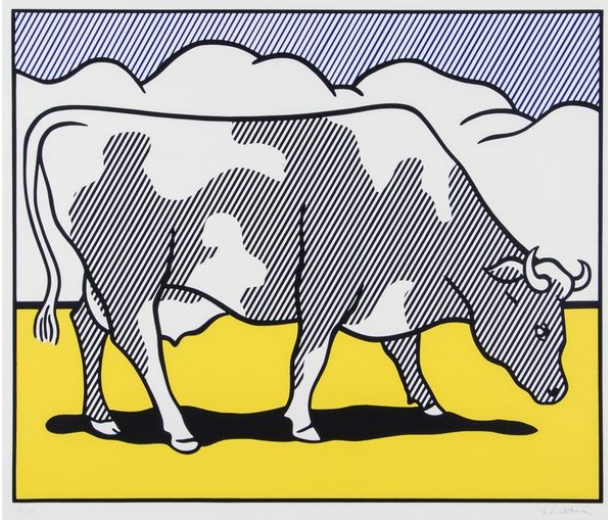
What are the relevant developmental processes, and how can they be influenced through adaptations and interventions in such a way that they make the environment communicative accessible.

The theory



The practice





Cow going abstract (Roy Lichtenstein, 1982)

Language develops through social interaction

Language cannot be created independently by the individual, it is both created and shared through the communicative activities of the members of a culture.

Social interaction may take many different forms and have different qualities, some will and some will not, contribute to development.

Intervention with AAC must also support authentic communicative interaction. This is not trivial but not much researched.

The language environment

Language development depends on an environment with language-development support – or what Bruner calls a “Language Acquisition Support System”.

The language environment is children’s main source of language practice. They learn how linguistic expressions are used, in terms of their conventional use as well as in the creative production of new meanings.

A language-supportive environment does not only support the child’s efforts; communication and language should be *affordances*, that is, action possibilities in the environment in a Gibsonian sense

Most children grow up in an environment that supports language development and is communicatively accessible.

(Bruner, 1983; Nelson, 2007)

Communicative access

The environment acknowledges the child's need for alternative means of communication and provides the child with a language form the child is able to use for expression.

There are people in the environment who understand the child's expressive communication and language, and can answer in a way that the child understands

There are people in the environment who masters the child's language better than the child, who can scaffold the child's language form and from whom the child can learn.

The macro level

New paragraphs in the general Law of Education in Norway concerning the educational rights of people in need augmentative and alternative communication are effective from August 1st 2012.

(Bronfenbrenner, 1979)

Law of Education (Norway)

§ 2-16 Education of students in need of augmentative and alternative communication (AAC)

Students who are completely or partially lacking functional speech and in need of augmentative and alternative communication, should be allowed to use suitable forms of communication and the necessary means of communication in the education.

When a student does not benefit satisfactorily from ordinary education, or will not be able to do so, the student has the right to special education in accordance with the rules of Chapter 5. This includes the necessary education in using augmentative and alternative communication.

Opplæringsloven

§ 2-16 Opplæring av elevar med behov for alternativ og supplerande kommunikasjon (ASK)

Elevar som heilt eller delvis manglar funksjonell tale og har behov for alternativ og supplerande kommunikasjon, skal få nytte eigna kommunikasjonsformer og nødvendige kommunikasjonsmiddel i opplæringa.

Når ein elev ikkje har eller kan få tilfredsstillande utbytte av det ordinære opplæringstilbodet, har eleven rett til spesialundervisning etter reglane i kapittel 5. Dette inkluderer nødvendig opplæring i å bruke alternativ og supplerande kommunikasjon.

Law of Education (Norway)

§ 4A-13 Education of adults in need of augmentative and alternative communication (AAC)

Adults who are completely or partially lacking functional speech and in need of augmentative and alternative communication, should be allowed to use suitable forms of communication and the necessary means of communication in the education.

Adults who do not benefit satisfactorily from ordinary education has the right to special education in accordance with the rules in §4a-2. This includes the necessary education in using augmentative and alternative communication.

<http://www.lovddata.no/all/nl-19980717-061.html>

Opplæringsloven

§ 4A-13 Opplæring av vaksne med behov for alternativ og supplerande kommunikasjon (ASK)

Vaksne som heilt eller delvis manglar funksjonell tale og har behov for alternativ og supplerande kommunikasjon, skal få nytte eigna kommunikasjonsformer og nødvendige kommunikasjonsmiddel i opplæringa.

Vaksne som ikkje har eller kan få tilfredsstillande utbytte av det ordinære opplæringstilbodet, har rett til spesialundervisning etter reglane i § 4a-2. Dette inkluderer nødvendig opplæring i å bruke alternativ og supplerande kommunikasjon.

<http://www.lovdato.no/all/nl-19980717-061.html>

The micro level – Scaffolding

The support of children's problem-solving development provided by parents and other adults and children.

“Communicative problem-solving” may be defined as coping with situations that require communication.

Communication and language scaffolding describe the usual practice of more competent members of a culture to engage in and maintain communicative interactions with children in such a way that it supports the children's development.

(Wood, Bruner and Ross, 1976)

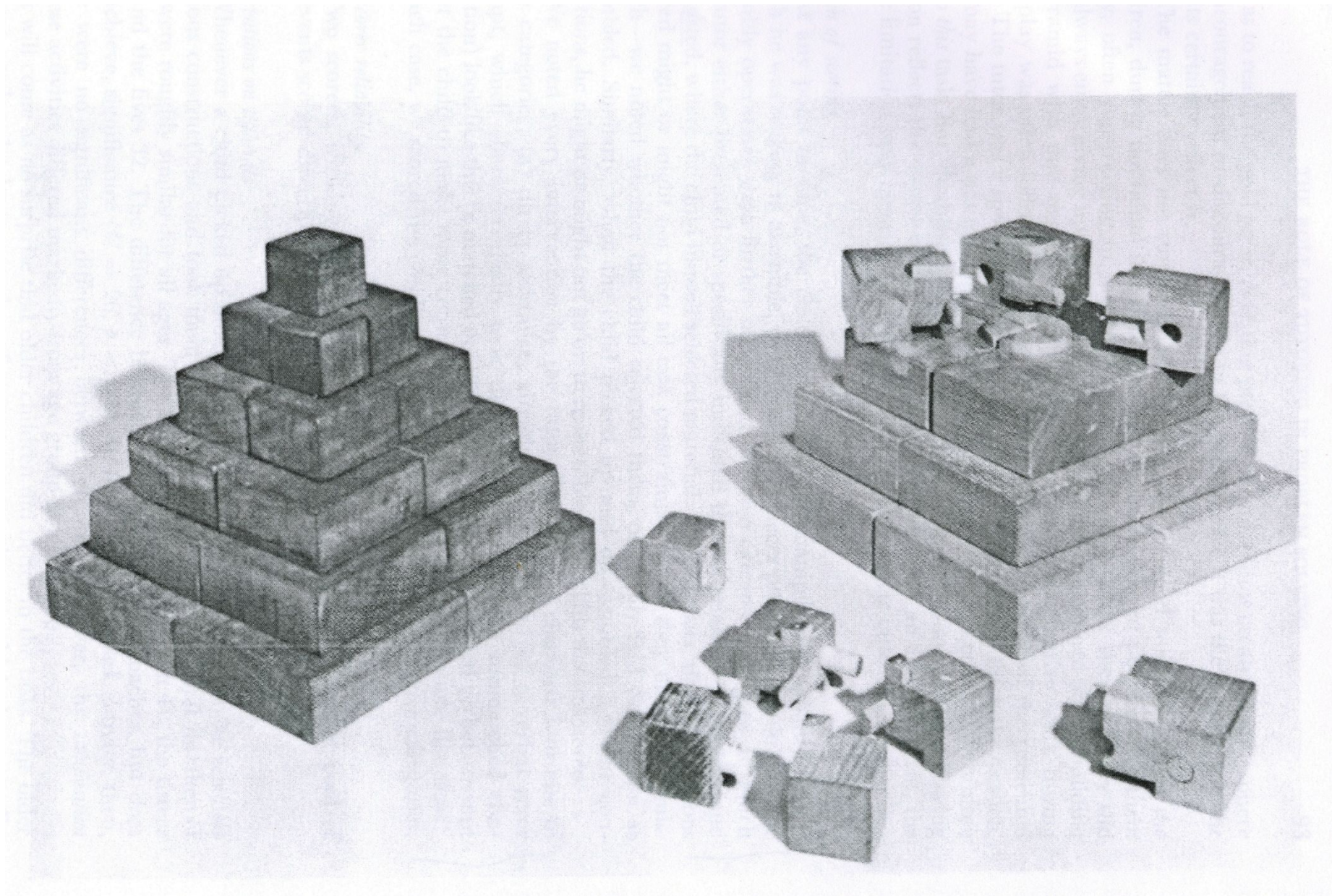
The scaffold metaphor

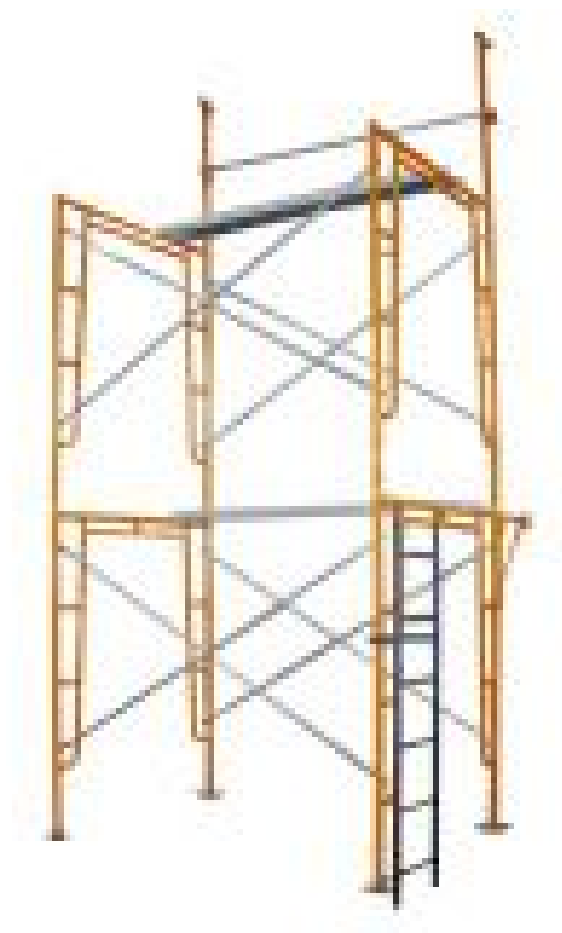
An external structure in the form of cognitive and emotional support that makes it possible for children to solve problems they are unable to solve on their own.

Through this assisted problem solving, the children develop new competence and become able to solve more tasks independently.

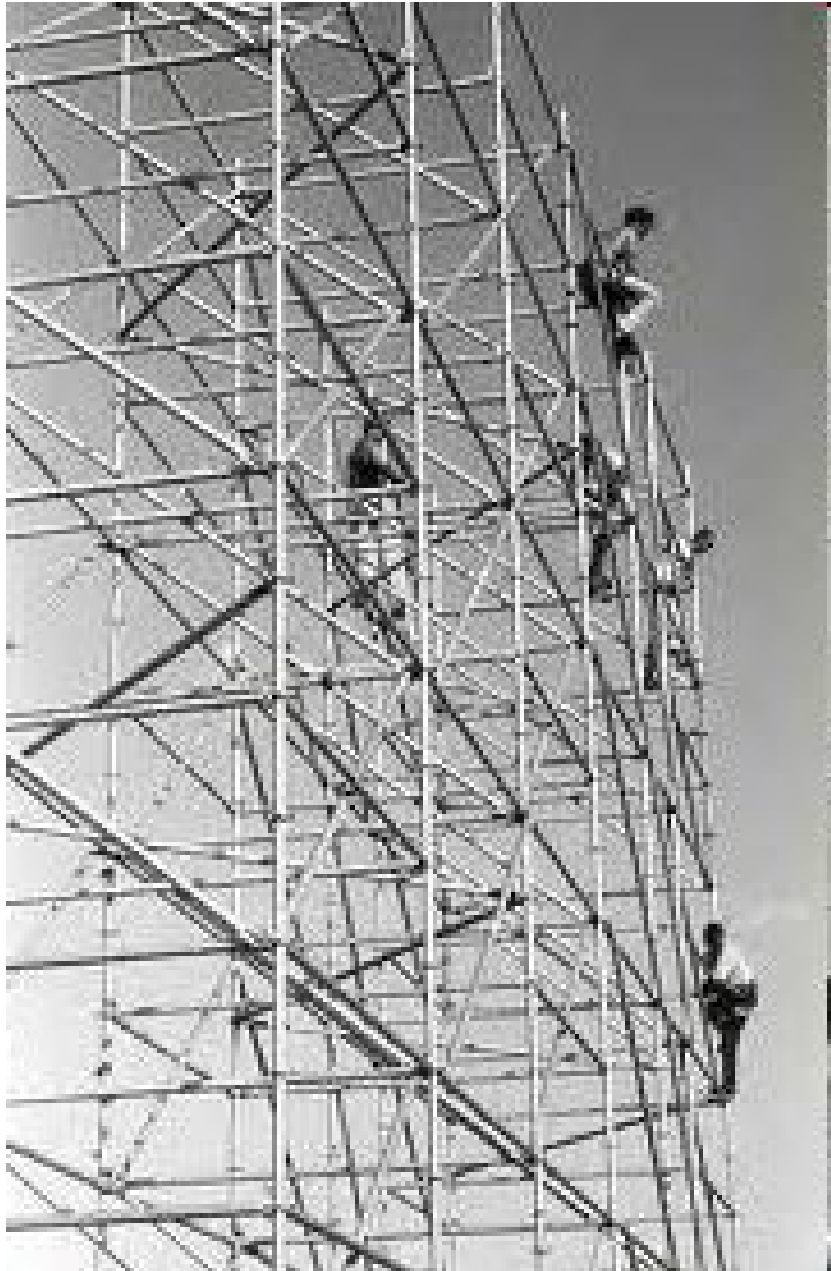
The metaphor was probably inspired by the tower-building task Wood and associates used in their study.

(Lajoie, 2005; Reid, 1998; Stone, 1998; Wood, Bruner and Ross, 1976).

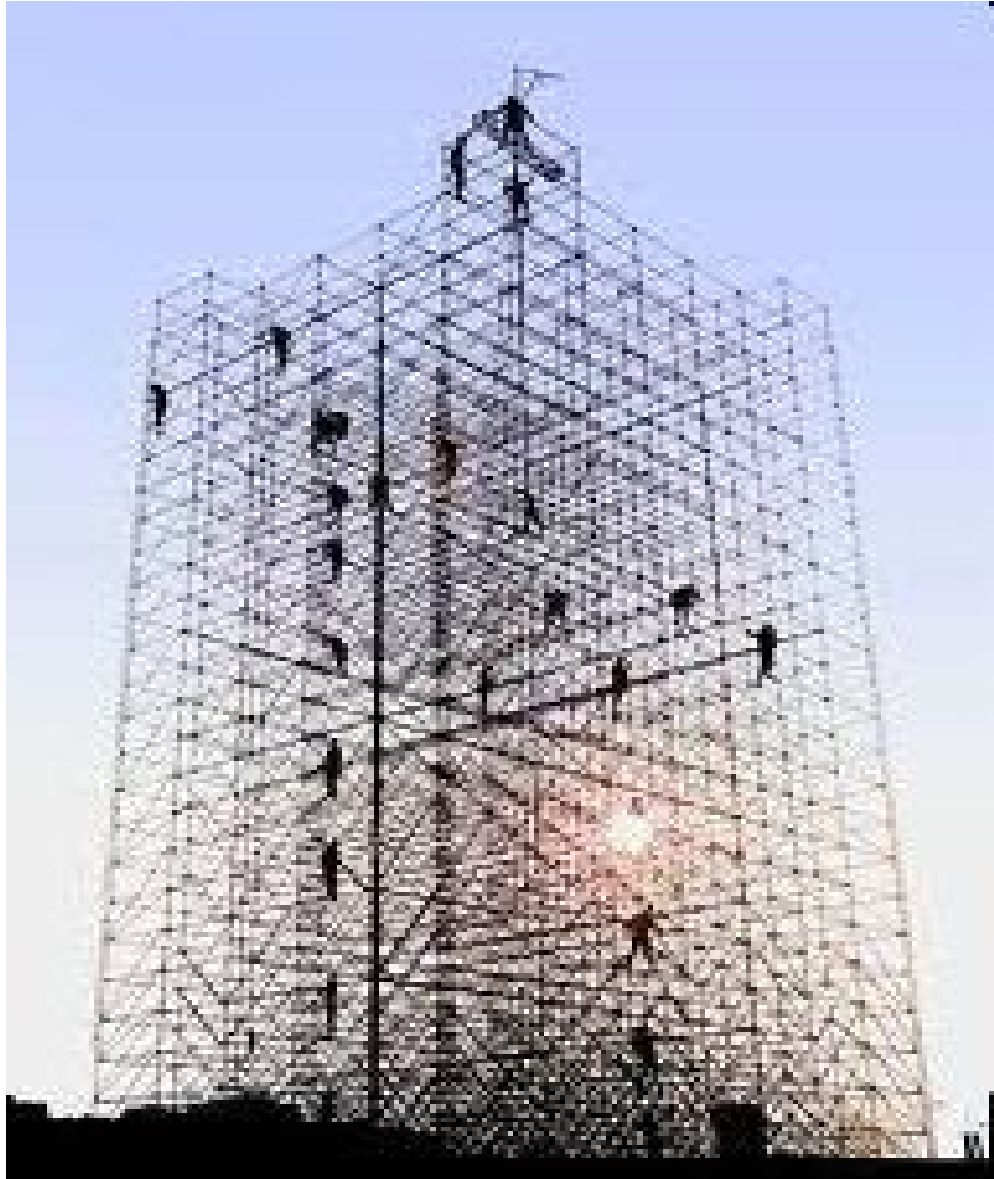




Children with different strengths and difficulties different need scaffolds



Children with different strengths and difficulties need different scaffolds



Children with different strengths and difficulties need different scaffolds

The bases of scaffolding: The child is driving the learning process

Scaffolding is based on an understanding of children as actively seeking to make sense of the physical and social world.

It is children's search for meaning and the difference in competence between children and people in the community, including other children, that drives the developmental process.

Interaction with and guidance from more competent children and adults are children's main sources of true, important and culturally relevant knowledge, including knowledge about words and sentences.

(Nelson, 1996, 2007; Tomasello, 2003; Schaffer, 1989)

Scaffolding and AAC

Much of the communication of young aided communicators is part of routines without true responsibility.

The intervention should support the child in becoming an active agent and the driving force in AAC development.

The partner often knows what the child should say, the “right” message.

The child needs real communicative “problems” to solve.

The adult should be able to guide the child’s own attempt to solve a problem.

Focusing on routines and repetitions may not foster creativity and productivity in language use.

Scaffolding implies that true social interaction is necessary in order to enhance development and enculturation in general.

A greater focus on authentic communication in social interaction with co-construction may lead to a scaffolding practice that enhances the children's use of their communicative resources in broader and more appropriate and functional ways.

Scaffolding AAC

The child must understand the task; it must be meaningful for the child to be active and attempt to solve communicative problems with AAC, that can be scaffolded.

Co-construction is a common element in conversations involving AAC but this is often non-scaffolding help.

When the child wants to tell something that the partner does not know beforehand, “co-construction” requires that the adult understands the nature of the child’s contribution.

Lack of such understanding may be a hinder in the scaffolding of AAC development.

Examples from “Becoming an aided communicator” (BAC)

Describing scenes on pictures

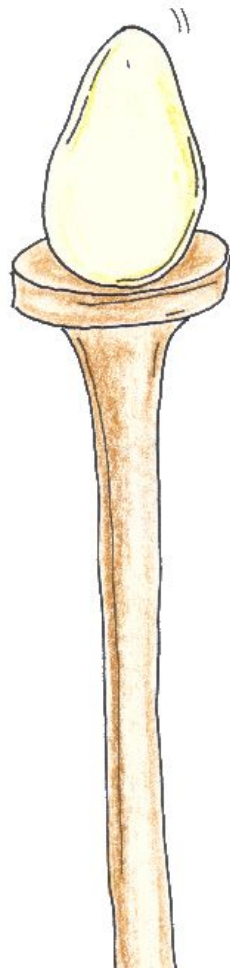
The child describes a picture which is unknown to the communication partner.

The child can see the picture but it is hidden from the partner.

Many of the pictures are somewhat unusual or surrealistic, in order to avoid easy scene guessing from the partner.



Drawing by Janice Murray



Drawing by Janice Murray

Instructing and constructing

The child has a model that the partner cannot see and instructs the communication partner to dress a doll.

The partner has a large number of items to choose from

The partner should construct the model the child sees, on the basis of the child's instructions.

The results of such tasks show that many children were creative but also lacking experience with telling about unknown things and elaborating and clarifying the message when they are not understood.

The environment fails to utilize the children's best skill: language

For children with motor impairments, language for action may make experiences possible that they usually do not participate in.

Parents and teachers lack a variety of strategies for helping the child and co-constructing the messages the partner does not know beforehand.

Many teachers expressed that they would like to use similar tasks as part of language teaching in class.

Competence as a necessary basis for scaffolding AAC

The asymmetry in competence between young AAC users and speaking adults is usually both larger and smaller than for speaking children:

Larger because the other people are able to speak.

Smaller because other people may have only marginally higher – and sometimes even lower – alternative language competence than the children.

The person who is scaffolding a child developing alternative means of communication must be more competent than the child in the use of the child's communication form.

This includes knowledge about the typical and atypical developmental courses of the the child's communication form.

Scaffolding is an unfolding process

As children gets more more competent (usually also older), scaffolding should be reduced or changed.

A lack of scaffolding may hinder a child's learning.

Unnecessary help and encouragement may function opposite to a scaffold and reduce the child's self-efficacy and feeling of competence.

The Goldilock principle applies: Not too much help and not too little.

Scaffolding and non-scaffolding assistance

Scaffolding is not just help, it must support development.

Non-scaffolding assistance may be useful or even necessary, but may not promote development.

For example, helping a child doing something it will never learn to do.

It is also necessary to distinguish between the assistance alternative communicators may need in constructing utterances, and the adult help and support that is part of the scaffolding of language development.

However, the focus of scaffolding is the developing child's communication and language competence, rather than increasing the frequency of certain behaviours, which is more usual in non-scaffolding intervention.

Non-scaffolding interventions

Some interventions focus on form rather than on function, that is, on producing or increasing the frequency of a “response” or avoiding an unwanted behaviour, rather than on developing the child’s possibilities to realize communicative intentions and goals.

(e.g., Bird, Dores, Moniz and Robinson, 1989; Carr and Durand, 1985; Bondy and Frost, 2002; Mirenda, 1997; Sundberg, Endicott and Eigenheer, 2000)

Scaffolding must be adapted to the developing competence: The limitations of choice

Early intervention strategies often focus on choice-making

Communication has many more functions than choosing things and activities.

When choice is well established, scaffolding should focus on the child's communication about interesting people, animals, things, actions and events in different situations, with different communication partners and for different purposes.

Scaffolding the expression of choices related to needs that in most homes are limited and fulfilled through the everyday routines may have little communicative value compared to supporting structured conversations and narratives.

Moreover, choosing an activity represents the beginning of the activity, and the consequence of focusing on choice may be that there is no language scaffolding during the activity.

Teaching is not scaffolding

Direct teaching is often an important part of AAC interventions, but does not imply guiding the child's own problem-solving.

Teaching may be useful but usually focuses on internalization of language only.

Teaching sometimes also implies that the child has to perform actions without clear meaning to the child.

If the child does not understand the goal or intention behind an educational activity, it will be meaningless or “dry”.

“Dry” teaching will lead to “dry” and limited competence.

Competence to scaffold

The notion of scaffolding is based on the assumption that adults are aware of when children need and do not need help, and the kind of help they need.

This may is not always the case for children developing AAC.

Many studies find that AAC may be little used at home.

A critical question is what it takes for children to develop typical and atypical forms of language and gain access to the culture.

Aims for making the language environment accessible

Create an environment that support the development of alternative means of communication

Create situations with language and communicative affordances

Promote AAC competence in parents and other adults, to engage in conversations

Promote AAC competence in siblings and peers, and avoid giving them a mini teacher role

Involve the child in conversations that make a difference in the situation.

Scaffolding and reward

Scaffolding does not imply a system of rewards or reinforcers, as in intervention based on Skinner's theory and behaviour analysis, such as "functional communication training" and the Picture Exchange Communication System (PECS).

What is successful communication?

Communicative success (being understood) is more important than the *instrumental success* (obtaining something) usually promoted in PECS and other interventions based on behaviour analysis.

Do not praise for communicating: Communication should be met with communication

Wrong focus and may terminate the situation before the success of the communication is established.

The child's attempts to solve "communicative problems" is the best measure of success in communication intervention.

(e.g., Bondy and Frost, 2002; Mirenda, 1997).

Some problems with positive intervention strategies suggested for AAC: Modelling

Suggested as an important help, but often taken too literally.

Naming (pointing and saying the word) is not modelling, but provision of information.

Functional modelling would imply using the word for a real purpose in a particular context.

The aim of functional modelling is not to teach a particular utterance or sequence of words or signs, but to show the child a way to approach a particular communicative problem.

(Bellon-Harn and Harn, 2008; von Tetzchner and Martinsen, 2000, 2002)

Some problems with positive intervention strategies suggested for AAC: Expansion

Expansion of the child's utterance is usual in child-directed speech.

Most adult "expansions" of utterances produced by children using AAC are spoken interpretations of what the child has expressed:

"Expansions followed Emily's utterance and provided a model and an interpretation of her utterance that included more complete language content and form. They served the pragmatic purpose of confirming Emily's message while providing a model of how the adult would have organized the same utterance." (Bellon-Harn and Harn, 2008, p. 116)

The focus is speech.

(Bellon-Harn and Harn, 2008 Liboirin and Soto, 2006; Nelson, 2001; Nelson et al., 1996)

Expansion (continued)

Most adult “expansions” typically contain words and phrases that are not readily available to the child.

If expansion should function as scaffolding for children using alternative means of communication, the expansion should consist of elements from their own communication system, or at least spoken words within their expressive vocabulary.

The expansion should preferably not be an isolated repetition but rather part of the adult’s reply to the child’s utterance.

Some problems with positive intervention strategies suggested for AAC: Structured conversation

Conversations structured around one topic, or in a context that constrain topics, may help the child develop deeper and more varied language comprehension and use.

Storybooks are popular contexts for scaffolding.

But storybooks may lead to little productive creativity, especially when repeated many times.

(Bellon-Harn and Harn, 2008; Liboirin and Soto, 2006; von Tetzchner and Martinsen, 2000, 2002)

Structured conversation with functional expansion and modelling

Structured conversations where the communication partner uses the child's communication form only may integrate a structured conversation topic, expansion of the child's utterances and functional modelling (solving communicative challenges using the child's system).

Providing a basis for observational learning.

Increasing partner awareness.

One father saw a significant change in his son's aided expressions when he began to communicate 15 minutes every day with his son using the son's communication aid only.

Learning from aided communicators

- * The children typically have a very small expressive vocabulary which limits their utterances

The need for creativity increases when the vocabulary is limited

It is necessary for the children to develop strategies for word and sentence construction

Many strategies are invented by the children themselves

- * Literal meaning and intended meaning
- * Usual and unusual word use
- * Co-construction is often necessary when graphic signs are used in a figurative or unusual manner
- * Words can be referring and strategic

Children are creative: Scaffolders and interventionists should learn from self-invented strategies:

Metonymy and symbolic pointing

Sander is 5;10 years old and initiates a conversation with the teacher

S: “Bring the communication board” (uses the caller).

T: (Brings the communication board).

S: *TALK.*

T: *What do you want to talk about?*

S: *UNIT.*

T: *Do you want to talk about what happened in the unit?*

S: “Yes” (mouth movements).

T: Tell me.

S: *LOTTO.*

T: *Did you play lotto?*

S: “Yes” (mouth movements).

T: *Who did you play with?*

S: *KITCHEN.*

Self-invented strategies: Metonymy and symbolic pointing (continued)

T: *Did you play in the kitchen?*

S: “No” (mouth movements).

T: *Can you indicate the name?*

S: (Indicates several names without making any choice).

T: *Do you have the name on your board?*

S: “No” (mouth movements).

T: *Can you see the person you played with?*

S: “Someone in the kitchen” (Looks at the kitchen door).

T: *Did you play with Mari who works in the kitchen?*

S: “Yes” (mouth movements, smiles).

(Brekke and von Tetzchner, 2003)

Some self-invented strategies

- * Kombination strategy

By pointing at *CHURCH*, *BOOK* and *TALK*, Sander told the teacher to make the pictograms *BIBLE* and *PRAY*

- * Graphic strategy

In order to say “Red cross”, Sander pointed to the cross which is on the building at the pictogram *HOSPITAL*

- * Metonym strategy

Sander indicated *TOES* to inform the teacher that his father had a bad back

* Linguistic strategy

Sander used *HAVE* for “past tense”

* The teacher had told a story about what she regarded as a nice boat trip.

Sander replied:

GUN AFRAID ILL

“It was dangerous I was afraid and felt ill”

It was an open boat, there had been some waves and the boat had rolled a little.

(Brekke and von Tetzchner, 2003)

Scaffolding the people who should scaffold

Scaffolding is typically part of parents' ordinary cultural repertoire.

Parents, peers and professionals typically need education and support to become able to scaffold children using alternative means of communication.

The fact that these communication partners need instruction and support demonstrates the need to integrate AAC in ordinary cultural activities.

Children developing alternative means of communication need scaffolding – and do do their scaffolders.

Some relevant publications

- von Tetzchner, S. (2015). The semiotics of aided language development. *Cognitive Development*, 36, 180–190.
- von Tetzchner, S. (in press). *Child and adolescent psychology: Typical and atypical development*. Oxford: Routledge.
- von Tetzchner, S., & Basil, C. (2011). Terminology and notation in written representations of conversations with augmentative and alternative communication. *Augmentative and Alternative Communication*, 27, 141–149.
- von Tetzchner, S., Brekke, K.M., Sjøthun, B., & Grindheim, E. (2005). Constructing preschool communities of learners that afford alternative language development. *Augmentative and Alternative Communication*, 21, 82–100.
- von Tetzchner, S., & Grove, N. (Eds.) (2003) *Augmentative and alternative communication: Developmental issues*. London, UK: Whurr/Wiley.
- von Tetzchner, S., & Jensen, K. (1999). Communicating with people who have severe communication impairment: Ethical considerations. *International Journal of Disability, Development and Education*, 46, 453–462.
- von Tetzchner, S., & Jensen, M. H. (Eds.) (1996). *Augmentative and alternative communication: European perspectives*. London, UK: Whurr/Wiley.
- von Tetzchner, S., & Martinsen, H. (2000). *Introduction to augmentative and alternative communication, Second edition*. London, UK: Whurr/Wiley.
- von Tetzchner, S., Øvreeide, K.D., Jørgensen, K.K., Ormhaug, B.M., Oxholm, B., & Warne, R. (2004). Acquisition of graphic communication by a young girl without comprehension of spoken language. *Disability and Rehabilitation*, 26, 1335–1346.
- von Tetzchner, S., & Stadskleiv, K. (2016). Constructing a language in alternative forms. In M. M. Smith & J. Murray (Eds.), *The Silent Partner? Language, interaction and aided communication* (pp. 17–34). Albury, Nr. Guildford: J & R Press.

Thank you for the attention!