

# HOW CAN AN AUTISTIC CHILD'S COMMUNICATION DEVELOP?

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## 1) Wonder with exceptions

A child's language development still seems to be a miracle. Just being two years old most children start using words and sentences in a way that other people can understand them. By the time they go to school their language has become even more sophisticated. Few differences are left between their and the adults' way of talking, be that in sound, grammar, lexical or practical use. It is still a mystery how children manage to learn the language that surrounds them as quickly as they do (or even languages in some cases).

Some things can be said for sure though: the language development is based on biological foundations. Without any formal instructions children pick up one or even several natural languages within the first few years. Another thing is that language does not develop if language is not offered. Persons to whom the child relates to closely must be able to speak the language the child is to learn.

It does remain unclear which learning mechanisms trigger and enforce the development of language. The search for the one and only that explains everything would probably lead to an impasse. Mechanisms like imitation, corrections of oneself and others, generalizations, coordination of production and understanding, the forming and detection of rules - all of them being more or less important depending on the current level of language development - seem to have an influence.

Language development does not always take place in such a swift, smooth and admirable way as just described. Delays and disorders occur more frequently as the wonder of language development would let us assume. Details about incidence rates vary depending on the diagnostic criteria used to detect abnormal cases. Bishop (1992) and Grimm (1994) assume that at least every tenth child fulfills the criteria for the diagnosis of either a language development disorder or delay. Boys are more frequently affected than girls. It is important to say that *the* disturbed or *the* delayed speech development does not exist (Schöler, Fromm & Kany, 1998). Deviations of the normal variation spectrum are diverse. They can be global or specific, temporary or continuous, isolated or connected.

We will not further pursue the pathology of language development at this point. Instead we will introduce a single case. The language development of the girl we will describe has hardly shown any progress, which is not due to an isolated disorder but connected to a fundamental ontogenetic developmental disorder: early infantile autism. Samantha can produce sounds like „ai“, „ou“, „la“, „lee“, „hee“, „hoo“, „ze“, she can hum songs or parts of songs, but she cannot imitate or spontaneously produce words or sentences.

Before we will introduce Samantha any further, connections between autism and different speech and language development

disorders are to be described. Afterwards we will show that a stagnated speech development within the linguistic domain does not by all means imply that the communicative development stagnates as a whole and that intense training of alternative forms of communication is in vain.

By describing the development of requesting we can show how much Samantha's communicative skills have improved. These particular improvements were not obtained by a purposeful conducted training. That is why we used the first author's diary notes as empirical base. He systematically collected data within the years 1990 through 1994. As normal and easy it is for us to use conventional gestures, as hard it is for Samantha. Describing how she learned the symbolic gesture „wanting something to drink“ will show how hard it was for her. Although it becomes obvious that little steps in development take a very long time, it is also shown that they *can* be achieved. Even in the case of a severe developmental disorder progress can be made, if people are willing to see the potential of an autistic child. Very important is not to expect too much and to offer support for goals that are realistic.

## 2) Autism and Speech

Kanner (1943) and Asperger (1944) were the first to describe autistic disorders which Kanner chose to name "early infantile autism" and Asperger "Autistische Psycho-pathie". In his article "Autistic disturbances of affective contact" Kanner illustrated the traits in speech development that were particular for autistic children. Some of the children he worked with did not develop any kind of spoken language, and even those who did were lacking certain abilities, especially when it came to using language in a communicative way. However objects could be named without problems and they easily learned and memorized long as well as difficult words. The children who did speak were just not able to use language in a creative and constructive way as other kids

would. One example of how autistic children use language is the rigid insistence on certain - very context oriented - meanings of words. These particular traits described by Kanner have not lost any of their relevance for diagnosing autism in early childhood. Later studies (Ricks & Wing, 1975) showed that half of all autistic persons do not develop spoken language. It is remarkable though, that in almost none of those cases the attempt was made to compensate the lack of spoken language with alternatives like gestures or facial expressions.

As the symptoms of autism are diverse, the connected (developmental) disorders concerning speech may also vary. In the course of development deviations in speech often become less, although they rarely disappear completely. Autistic children who are capable of speaking mainly use language to stimulate themselves. Because of their limited interest in any kind of topics, it is hard to lead a conversation with them. If autistic children want to communicate, no matter if they are able to speak or not, they often come up with unconventional ways of expression. Even persons who the child relates to closely sometimes find it hard to interpret words and gestures that are taken out of their usual context. Echolalia, one particular characteristic of autistic speech, is one of those idiosyncrasies. It stands for the immediate or delayed repetition of words, fragments of or even whole sentences (immediate or delayed echolalia). This behaviour, that often is presumed to be of non-communicative character, can very well be of communicative importance. If a person, for example, has asked „Would you like something to drink?“ and the question is repeated by the one addressed, the repetition can have the same meaning as the answer „yes, that's exactly what I want“. Many of the autistic children that speak have difficulties with the so called deictic expressions. The personal pronoun „I“, for example, does not belong to one particular person (like one's own name), its use depends on whose turn it is to speak. At the end of this paragraph we want to mention

just a few further possible characteristics of an autistic person's speech: abnormal pitch and articulation can be observed, speed, rhythm and the intonation of speech can deviate.

### 3) Samantha

Samantha was born in 1985 and received later the diagnosed of an autistic developmental disorder and mental retardation. Since complications occurred during birth, she had to be taken to intensive care right away. There her heart stopped beating. Attempts to revive her were successful. The physicians predicted developmental disorders, which later turned out to be typical for autism: Samantha did not show any interest in relationships with peers, she did not show any nonverbal behaviour to regulate social interactions, and speech development was heavily disturbed.

Being 20 months old Samantha started to get support. She went to a remedial educational nursery school at the age of four and started going to a school for the mentally handicapped at seven. Markus Wenglorz started to look after Samantha in 1989. In 1990 he started documenting Samantha's development in diaries, photographs and on video (Wenglorz, 2001) – without any scientific ambitions at first. Unfortunately only few of these ongoing documentations have been scientifically evaluated (Wenglorz, 1995a, 1995b). A film about different episodes in Samantha's development in the last seven years was published by the Institute for Scientific Film in Göttingen 1998 with the title: „Samantha - the development of an autistic girl“ (Wenglorz & Deutsch, 1997; 1999).

### 4) Samantha's development – what can be called disturbed, what cannot?

From a diagnostic point of view, using the most common methods like the Diagnostic and Statistical Manual of Mental Disorders

(DSM IV, APA, 1995) and the International Classification of Diseases (ICD-10, Dilling, Mombour & Schmidt, 1993), Samantha fulfills the criteria for an autistic disorder. This diagnosis is based on the developmental deviations described above. In addition Samantha shows repetitive and stereotyped patterns of behaviour: mannerism within her motor activity, like waving her arms, spinning, without getting dizzy, and the continuous interest in certain parts of objects, like laces and ribbons, are remarkable. The diagnosis „autism“ stresses the pathological character of her behaviour and development. Is it possible that other areas develop in a normal way or even above average although autism was diagnosed? In the case of Samantha we can answer this question with the help of the Psycho-educational Profile (P.E.P., Schopler & Reichler, 1979). This method does not only examine deficits in development, but also its potentials. Samantha's profile looks like this: over all we can say that her development is delayed, a closer look shows though that not all areas are affected in the same way. The most and best developed areas are her motor activities (precision and coarse), including further developmental opportunities. On a lower level the same can be stated for the eye-hand-coordination. The performance in the areas imitation and perception must be classified as relatively poor, but they do show a certain developmental potential. The least developed are cognitive and verbal abilities with only modest chances of improvement.

### 5) The development of requesting

Requesting something is one of the most important forms of communicating. Requests can be expressed in many different ways: a gesture with the hand, a cry for help, a polite question, but also indirectly by stating something like „It is really hot in here.“. A request consists of two things: an intention on the side of the person who asks and the addressee. Various factors determine whether a request is successful or not.

This was scientifically proven by a group of researchers lead by Herrmann (1982) who examined a certain type of requesting: verbal requests. This research group showed that the right to ask, the willingness of the addressee to fulfill the request, the way the request is put forward, etc. have an influence on the outcome.

How does requesting develop, if one has only restricted chances to make social contact or to express one's intentions? Can requesting develop at all, if spoken language does not? Bruner (1983) was able to show that even babies can successfully ask for something using gestures, looks, or sounds. Therefore asking is a communicative act that can take place before spoken language is developed, but its quality changes when spoken language becomes another option like Bruner and later Harding (1984) and Sugarman (1984) have shown.

Did requesting develop in Samantha's case? Yes, although the history of her development cannot be retraced completely because the diary documentation started when she was already five years old. That is why we can only describe the development between the age of five and nine (years 1990 through 1994). The diary notes from these years were examined with focusing on how Samantha expressed requests. All actions that Samantha used to obtain something or which helped her initiate or prevent (inter)actions were as well classified as requesting as actions with which she tried to manipulate her physical environment. Example of the communicative means and functions of Samantha's requests are given in table 1. It was possible to assign all these actions to two major categories: indirect and direct contact. Direct contact means for example that Samantha takes one's hand and pulls or pushes it into a certain direction or that she sits down on one's lap to make contact. Directly made contact of this kind depends on tactile and haptic senses. If an object acts as a mediator between two people, indirect contact was made. An example: Samantha wants somebody to repair her toy. She hands that toy to the

person who is supposed to do so. She expresses a wish by transferring an object. A certain move or a sound can also be an indirectly expressed request.

Samantha is not able to talk, but she can produce sounds. She uses these sounds mainly to make people sing by humming the beginning or end of a song. In addition she has learned a few simple moves that are part of the singing routine. All indirect ways of making contact have in common that they depend on auditory and visual modalities. This implies that body contact is not necessary, and people communicating can be physically separated which is not possible in the case of direct contact.

How often direct and indirect contact was made to express a request is shown in figure 1. The results are described in absolute numbers for the years 1990-1994. The number of directly made contact increased although not constantly over the four years. Indirectly expressed requests are almost non-existent in the first years, they do become more numerous later though. Between 1993 and 1994 they increase so much that they even outnumber the directly expressed requests. An analysis of the communicative actions showed that Samantha used more and more moves and sounds over time to ask for things. Two things become clear in figure 1: on the one hand we can say that in quantity requesting has occurred more frequently over the years - indirectly and directly. On the other hand a change in quality can be observed as well. Samantha's use of indirect contact has increased remarkably. This qualitative and quantitative development contrasts sharply with other behaviours, for example motor stereotypies which did not change over time. An asynchronism in development is shown clearly by these contrasts. A halt in some developmental areas and change in others can both occur in one and the same person.

## 6) The first gesture

Can we support Samantha's communicative development specifically? Is it possible not

only to stimulate her developmental potential but to let it „blossom”? As the development of requesting has shown Samantha was able to express intentions in many different ways. She has difficulties though when it comes to using conventional gestures. It seems impossible for her to use verbal communication, words that everybody understands. Better chances of improvement lay within other modalities: the visual one in this case. Examples for visually communicating are picture cards or sign language. Coordination of motor activities is necessary for this kind of communication and Samantha is – although restricted in some areas – capable of doing so.

We now will give a short summary of the program that was used to teach a single gesture to Samantha. It is based on behavior therapy. The gesture's form, meaning, and function was conventionally established. The program lasted nine months: that is how long it took until Samantha was able (and willing) to adopt the suggested gesture. She is still using it today. Details about the course and results of the training can be found in Wenglorz's article 1995(b).

Which gesture should one start with? That was the first question to be answered. The following criteria determined the choice:

- the gesture was meant to be simple. Cognitive deficits would already make it hard to learn a symbolic gesture, so that there should not be an additional challenge in motor activity.
- the gesture was to articulate a primary need, so that Samantha would be motivated to learn.
- the gesture was supposed to be an icon, meaning that it should have a pictorial connection to the wish expressed so that an outsider would be able to understand it as well.

In the end the chosen gesture was one to express the wish to drink. The lessons could be easily integrated in everyday life, mainly at meal times. Samantha was supposed to make a fist with her right hand (she is right-

handed) and then move it towards her mouth. Showing the gesture to her was not enough, her ability to imitate being insufficient. Samantha's hand had to be closed by her trainer who also moved the hand towards her mouth. While doing so the word "drinking" was said out loud. This method, known as 'simultaneous' or 'total' communication (e.g. Mühl, 1990), is meant to establish a connection to spoken language. Another intention is to enforce the receptive understanding of speech (e.g. Webster, Konstatareas, Oxman & Mack, 1980). As soon as Samantha made efforts to produce the targeted gesture independently, the trainer's manual support faded. When Samantha was able to make a fist by herself, the trainer only had to move her forearm and later he just had to briefly touch her elbow. It was very important that Samantha was given something to drink immediately after she had performed the gesture, so that the contingency between her own actions and reinforcement were clear.

## 7) Concluding remarks

In this article we focused on a single case: the development of a girl diagnosed with autism. She belongs to a – fortunately very small- group of people who never experience the wonder of language development. The girl Samantha can produce sounds that could rather be characterized as singing than speaking. When she is singing, syllables of words can be made out which are part of the melody's text that she tries to copy. The analysis of this single case brings up a number of theoretical and practical questions:

1. Is there a connection between the development of singing and speaking? And if so, of what kind? Do both activities have the same origin? At what point does the development of the two start going different ways? Samantha's case could be interpreted in the way that singing and speaking have the same origin, but that differentiation sets in when conventional sounds are

linked to conventional meanings. This developmental step is obviously blocked in Samantha's case. The reasons for this blockade have to be examined closely. A study on related brain activities seems to be an interesting alternative. That way processes in the areas of language and musical perception could be examined. Samantha might perceive music as spoken language and spoken language as music making only gradual not categorical distinctions, e.g. deciding if she is able to reproduce something or not. It would also be interesting to analyze the acoustic material available to see how Samantha's ability of copying melodies has developed over the years. Could it be that children with developmental disorders more often than others use tonal conventions to imitate melodies? If this could be proven by examining Samantha's perception of melodies, it would imply that conventional sound systems can develop, if pitch is crucial for a sequence of sounds. Further studies might be able to find the cause for the blockade of Samantha's development of spoken language.

2. Spoken and written language, the second being based on the first, are considered essential for communication – at least in our Western culture. The conclusion could be made that without spoken language communication cannot develop. This article about an autistic girl's communicative development shows that communication does not equal spoken language. Even without spoken language intentions can be expressed so that others are able to understand them. Because unconventional ways of communication are not commonly used, they can only be applied in the present, the „here and now“. Connections to the future or past cannot be obtained without using conventional signs. The analysis of Samantha's development of requesting shows a

certain trend. First of all can be said that the increase in expressing requests is a welcome change. It means that with time she made more and more efforts to contact people in her environment. Is this change due to her requesting being more and more successful? Such a connection could not be proven (Wenglorz, 1995a). Samantha's requests were not and are not always successful, some of them must be denied out of understandable reasons. Nevertheless she keeps requesting more frequently, which shows that she has developed a certain tolerance of frustration.

As important as the increase in requesting is another developmental aspect. The relation of indirectly and directly made contact become inverted. Direct contact being more frequently used in the beginning becomes less important in the end. Indirect contact takes over. What does that mean concerning Samantha's development? Samantha experiences that communication can take place even if she is physically apart from the person addressed. By learning this other ways of communication become possible – symbolic ones like the use (and maybe understanding) of conventional gestures. The gesture „wanting something to drink“ is a first step in the right direction, a step towards the use of further conventional gestures.

Samantha's case stresses that no wonders are to be expected if a severe developmental disorder like autism is diagnosed, even if new communication technologies might trigger those kind of expectations. But Samantha's case also shows that progress is possible, if the developmental potential is not overrated and appropriately supported. Autistic disorders make us look at the wonder of language development from a different angle.

Table 1: Categorized examples for requesting taken from diary documentations

Documentat- ion's date	Child's age	Description of behavior	Categorization of contact's medium & function	
			medium	function
6 <sup>th</sup> Nov 1990	5;10	holds my hand and claps with it, laughs	body	joint actions
21 <sup>st</sup> Dec 1990	5;11	I take it (the mattress) away and put it in a corner where she cannot reach it anymore, persists on wanting it back	no information in diary	requesting an object
23 <sup>rd</sup> Dec 1991	6;11	[I visit her at home, sit next to her in her room] she gets the back-pack that she always has when she comes [to me] and gives it to [her] mother	object	requesting a change of place (wants to go with me)
11 <sup>th</sup> Mar 1002	7;2	She takes my hand and wants to go down the stairs. At first it is unclear what she wants downstairs. Pushes me back and forth.	body	? (intention is unclear)
11 <sup>th</sup> Jan 1993	8;0	Feed her with a mandarin, as well as other things it virtually happens on the side, after a while she drags me to the recorder	body	requesting a permission (to turn on the music)
30 <sup>th</sup> Nov 1993	8;10	Does it at least as well as two weeks ago. [During the song] "When it becomes night"fi taps her chest/belly; ...even sings the last 4 notes of [the song] "Chimney-Sweep" by herself (!)	statement	requesting a joint action (singing)
1 <sup>st</sup> Aug 1994	9;7	tries to keep me from writing, tries to take the pen away from me	object	requesting an action's end/prevention
5 <sup>th</sup> Oct 1994	9;9	For a while she turns round, waving the spiral boisterously. As the spiral gets caught in the tripod, she comes for me [grabbing my hand] to fix it	body	requesting help

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## KAKO SE MOŽE RAZVITI KOMUNIKACIJA AUTISTIČNOG DJETETA?

### SAŽETAK

Razvojna istraživanja djece s poremećajima i retardirane djece usredotočuju se na nedostatke. Gdje, kada i zašto se ta djeca razlikuju od djece koja se normalno razvijaju? Važno je naglasiti da kod pervazivnih razvojnih poremećaja, oštećenja nisu samo kvalitativna i kvantitativna, primjerice, u njihovim socijalnim i komunikacijskim funkcijama. Mi tvrdimo da se čak i djeca s ozbiljnim poremećajima razvijaju. To je slučaj s autističnom djecom, koja pokazuju primjerice, nevjerojatne uspjehe u nekim područjima razvoja.

U longitudinalnoj studiji razvoja jednog autističnog djeteta vidljivo je poboljšanje komunikacijskih sposobnosti unatoč gotovo potpunom odsustvu jezičnih sposobnosti. To se dijete zove Samantha, a rođena je 1985. Prema DSM IV i ICD 10 kod Samantha je utvrđen razvojni poremećaj koji se može svrstati pod "autistični poremećaj" ili "infantilni autizam". U razdoblju od pet godina (1990 - 1994) proučavali smo kako se kod nje razvija sposobnost upućivanja molbi, pri čemu smo se služili redovnim dnevničkim bilješkama i zapažanjima na temelju video snimki. Istraživanje je započelo kad je Samantha bilo pet godina.

Upućivanje molbi temeljni je komunikacijski čin. Postoji nekoliko mogućnosti upućivanja molbi neverbalnim i verbalnim sredstvima. Želja da se dobije neki predmet može se iskazati pokretom ruke i verbalnim izričajima. Kako izgleda razvoj te sposobnosti kad verbalna sredstva nisu dostupna? Naša empirijska analiza temelji se na dnevničkim zapisima i promatranju situacija koje se mogu podvesti pod kategoriju molbi, a koje obuhvaćaju radnje kojima Samantha želi

- dobiti predmete
- potaknuti ili spriječiti da osobe s kojima komunicira nešto učine
- potaknuti ili zaustaviti fizičke promjene u svojoj okolini.

Komunikacijska sredstva za ove oblike neverbalnih radnji uključuju različite osjete, proksimalne osjete poput dodira ili pokreta ruke jednog od njezinih partnera prema cilju, ili distalne osjete poput onih u stvaranju glasova. Apsolutna učestalost upućivanja molbi povećava se kako Samantha raste. Tome je razlog značajan porast posrednih kontakata koji je započeo 1993. Do 1993. neposredni kontakti bili su češći od posrednih. Međutim, 1994. neposredni oblici kontaktiranja počeli su zamjenjivati posredne.

Kvalitativno i kvantitativno povećanje broja molbi što ih je Samantha upućivala u oštroj su opreci s drugim područjima njezina razvoja, kao što je primjerice, zadržavanje motoričkih stereotipa. Dakle, čini se da je napredak u razvoju različit u različitim područjima čak i kod djece s ozbiljnijim poremećajima.

Ako se psihološkom intervencijom želi postići više od pukog bavljenja nedostacima, vrlo je važno utvrditi pozitivne razvojne resurse.