

Glossary

Language disorder: Receptive language disorder

What is receptive language?

Understanding is the ability of one person (the listener) to receive a signal containing encoded information from another person (the speaker). The listener then decodes that signal to extract the meaning. In this way, the listener **shares the same idea as the speaker**. Understanding is also called **verbal comprehension**. Recent theory about how children learn to understand others takes this definition further. Rather than a simple message, listeners try to understand what the speaker is trying to convey (Ambridge and Lieven, 2011).

Understanding what is said involves many different systems and skills. These include biological as well as psychosocial factors.

Systems involved – Biological

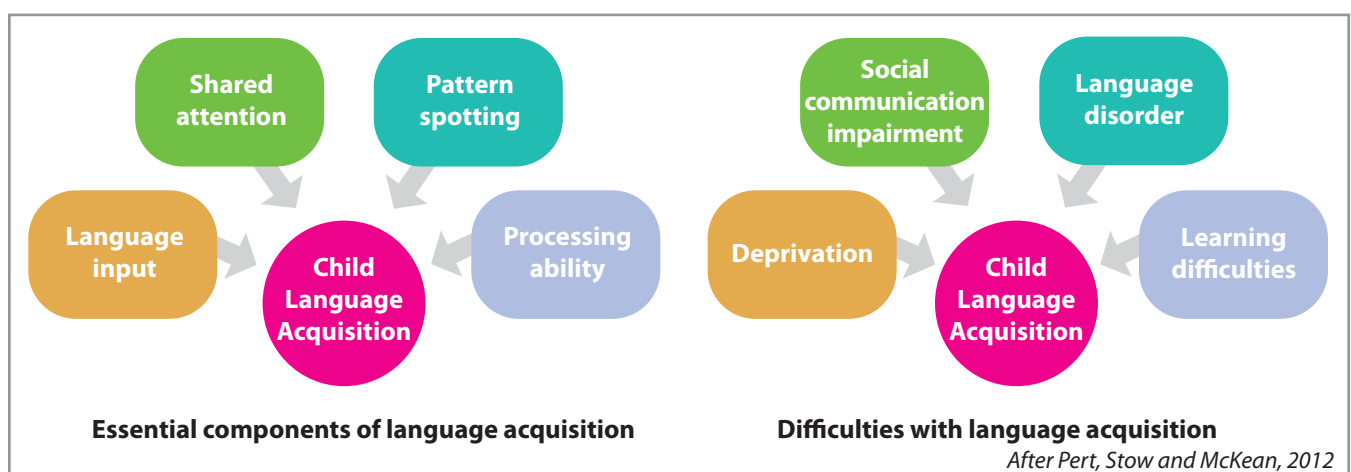
- **Speech perception or hearing** the speech (or seeing the signs in the case of a sign-language user)
- **Seeing** the event, activity or object

Systems involved – Psychosocial

- Sharing an interest in an event, activity or object with another person, referred to as joint attention
- Maintaining interest without being distracted
- Understanding:
 - The situation
 - The intentions of the speaker
 - The way the spoken sentence is composed
 - The meaning of the words within the sentence
 - The meaning expressed through vocal pitch and intonation

What is receptive language disorder?

Receptive language disorder is a form of language disorder. It is also referred to as **comprehension difficulties**. Comprehension difficulties are often part of an overall **language disorder** which is likely to affect expressive language skills as well as receptive language skills.



The model on P1 shows the essential components of language acquisition. Problems in any of these crucial areas will result in a language disorder, often affecting comprehension skills. The same model is discussed on the expressive language disorder leaflet as all these factors affect the development of both receptive and expressive language skills.

- If there is restricted or impoverished **language input**, then the child does not have the raw data to work with. This may occur when children live in social deprivation and have few play experiences or their parent(s)/carers have themselves experienced poor parenting when they were children and are less well equipped to provide rich language models. This also occurs if they miss out on language input because of sensory impairments such as hearing loss or visual impairment.
- If the child is not able/does not have experience of attending to others and hearing language input together with shared experiences, then their language may be affected. Children will not be able to make the links between the language they hear and the world around them. This interferes with mapping meaning onto actions and objects. Children with autistic spectrum disorders may have difficulty with shared attention which in turn affects their ability to acquire language.
- Children have to work out where words begin and end and how the speech they hear relates to meaning. This requires excellent pattern spotting. The child must realise that a repeated pattern is a word, for example. Children with language impairment may find this extremely difficult.
- Remembering, analysing and processing language requires very fast systems. Children with learning difficulties may analyse and process language at a slow rate. They may therefore take longer to acquire language skills and may need more time and less complex language in order to understand. Children with memory difficulties may not be able to retain the information long enough, forget or make errors in remembering the spoken sentence.

Comprehension and expression

Language is thought of as two interacting parts; comprehension which involves listening and understanding, and expression which involves talking and putting together spoken sentences (utterances). Understanding and expression are not separate systems. Listeners often use their expressive language to check or ask for further information or

clarification. Children may use new words and utterances to see what the effect is on the listener, developing their understanding by experimenting with expressive language and adjusting their language accordingly. If the child has difficulty with expressive language, then this may also have an impact on their understanding. It was previously thought that comprehension preceded expression but this has been questioned by research which shows that children use spoken forms that they have yet to completely understand (Hendriks and Spenader, 2005; McCauley and Christiansen, 2013).

Speech as sound waves

Speech is made up of the sounds which are produced by the speaker's vocal tract (Ambridge and Lieven, 2011). The sounds bear no resemblance to the actual things being talked about. Each language agrees what chain of sounds stands for an object or idea. For example, the word 'spoon' in English is 'chamach' in Mirpuri (a Pakistani heritage language) and 'Löffel' in German. None of these words or their sounds has anything to do with the metal, plastic or wooden object we use to eat and stir with! The speakers of the language have simply agreed that this chain of sounds can stand in for the real object. The speaker doesn't have to show the listener a real spoon; the chain of sounds is decoded by the listener's brain and the idea and image of a spoon is recreated in the listener's mind. This is an extremely powerful system and allows humans to discuss not only real objects, but also events and abstract concepts such as 'happiness' or 'justice'. We can discuss the past, present and future because language allows us to share thoughts and ideas. This symbolism is at the heart of human language, where one thing – speech sounds, a written word or a visual sign or symbol, stands in for another. Children develop this skill through play, for example pretending that a cardboard box is a car or a spaceship. The development of symbolic function is one of the reasons that play is so important for the development of children's language and thinking.

Hearing

Real physical sound waves travel through the ear to the listener's brain. Speech must be heard in order to be decoded and the meaning extracted. We rarely speak in single, separate words. If you listen to a language you do not speak you realise that it is very difficult, if not impossible to decide where one word ends and another begins. This is because utterances (spoken sentences) are one continuous stream of sounds. Our brains break this up into words and meaning.

If the listener has difficulties hearing, then there is a problem getting the speech signal into the brain of the listener. Hearing impairments can happen at different parts of the auditory system.

Many children have problems with the transmission of sound waves from the eardrum to the inner ear because of wax blocking the ear drum or because of intermittent infections of the middle ear (otitis media with effusion, or OME). A child may have more than one episode of OME, which can cause ear pain and muffled hearing. This can then make the speech signal less clear. If the child is acquiring speech and language skills at this time then they may experience speech sound difficulties and/or problems with understanding as they are not receiving all the information encoded in the speech (Nittrouer and Thuente Burton, 2005; Shriberg *et al.* 2000).

Children who have sensorineural deafness (problems with the cochlea or the nervous system to the brain) and are profoundly deaf may not be able to receive input via speech and may need to use an alternative route such as sign language, or a cochlear implant which means a new hearing system is fitted.

Hearing test

Since hearing is an essential part of understanding, children with suspected verbal comprehension difficulties should have an up-to-date hearing check carried out by an Audiologist. Even if a child passed the new born hearing test, a referral should still be made to audiology if there are any concerns about speech and language development. The results should be shared with the team, including the speech and language therapist. If a child is prescribed hearing aids, then these must be worn for the full recommended time as loss of access to the speech signal may slow down the child's language acquisition and ability to understand.

Joint attention

Joint attention is thought to be essential to language learning. This is because understanding another person's ideas involves complex psychological processes. The listener must understand that the adult is interested in the activity and that the adult wants the child to be interested as well. The listener must then realise that the speech they hear is to do with the activity they are seeing. This is a social process and the motivation for doing the activity is often not to send a message, but to enjoy the shared experience.

An adult might say the child's name, point at a dog and say "Look! The dog is chasing the ball". The child looks at the adult, to the dog and then back at the

adult to confirm that they are sharing the experience. The child hears the spoken utterance at the same time as the dog is chasing the ball and so knows that the speech is to do with the shared activity.

Listening and attention

Listening is not the same as hearing. Hearing is passively receiving the speech signal, whereas listening is paying attention to what is being said. Listening is therefore a skill which develops as the child grows and experiences social interaction such as playing with other children and adults.

Although listening and attention are crucial to the development of verbal comprehension, they cannot be developed separately from language skills. As discussed above, shared attention as a socially enjoyable activity is the crucial part of developing language.

Social skills, knowledge of routines and of others

Knowledge about culture and situation are crucial to understanding another person. Children often support their understanding of spoken language by using the clues in the environment around them. Children know their home and often classroom very well, including the people likely to be there and the routine of the day. If the child hears the preparation of food at a certain time of the day, then it is likely to be time for dinner. Young children begin to associate objects such as their coat or plates and cups with activities such as going out or mealtimes. This situational understanding is very supportive as it allows the child to understand spoken language in a familiar context and scenario. So people around the child tend to behave in the same way. Adults may give familiar instructions such as "Sit down for your dinner" or "Fetch your shoes". Children may not understand all the words of such instructions but are able to follow them in familiar routines. Parent(s) and carers may be quite surprised when a child is assessed by a speech and language therapist. In clinical situations, the child may be asked to follow unfamiliar instructions or point to pictures. The clinical situation is therefore examining the child's understanding of the spoken instruction only. As a result, children may appear to understand much less than when they are in familiar surroundings with people and activities they know.

Children try to understand others using their knowledge of that person and familiar situations. Children ask themselves: "Why is she behaving as she is?". Young children and children with language difficulties will find direct instructions much easier to understand than statements which are indirect. So a

child younger than five years will understand the direct instruction "Please put on your coat" but not "It's really cold outside" (Schulze *et al.* 2013: 2079).

Language complexity

Comprehension does not just involve word knowledge. It also involves understanding word endings and changes in word forms to signal different meanings (morphology). The order in which phrases and words are arranged also helps the listener to understand (syntax). Language may be direct ("Let's have a drink!") and indirect ("It's been a while since we had a break"), with layers of meaning depending on the context and speaker. The intonation pattern (the 'musical' pattern of the spoken sentence) and word stress of a spoken sentence can change, with sarcasm even reversing the entire meaning of the sentence ("I really want to walk to the shops in the rain with no umbrella!"). Children are expected to understand a set of utterances arranged into a story (narrative) as well as the emotional states of the people in that story. All these different levels of meaning may present difficulties to a child.

Causes of receptive language disorder

Difficulties with verbal comprehension are often part of an overall language disorder and expressive language is often also affected. On rare occasions children may lose specific word knowledge or other aspects of verbal comprehension through neurological trauma such as a head injury or stroke, or as a consequence of a genetic condition.

For most children, comprehension difficulties arise when they do not acquire language skills in the same way as their peers. This developmental difficulty is often accompanied by other developmental delays. For this reason, children with comprehension difficulties should be referred to a Pediatrician for an assessment.

Children with expressive language difficulties should have their comprehension skills assessed by a speech and language therapist as both comprehension difficulties and expressive language difficulties may co-occur as part of a language disorder.

Children with sensory impairments such as hearing loss or visual impairment are at high risk of a comprehension difficulty or other speech and language difficulty.

The impact of social deprivation on comprehension

Children who live in poverty may experience delayed development of comprehension skills as part of a

wider language disorder. This is because children living in deprivation may have fewer opportunities for play and other interaction involving joint attention with peers and adults. There is a tendency for society to blame poor language models on parents and carers from these backgrounds, forgetting that those same parents were previously children living in poverty themselves and as such may not have experience of good language models. Children living in deprived areas should be offered access to quality play and language-rich environments such as Children's Centres to avoid preventable language impairment.

Literacy skills

Some research suggests that 'teachers can fairly accurately identify the level of children's functioning from informal observations, and these were corroborated through standardized speech and language therapy assessment' (Purse and Gardner, 2013). If a teacher has concerns, then a child should be referred for full assessment.

If a child or young person has difficulties understanding spoken language, then this is also likely to impact on their ability to decode written language as well. Teachers should be aware of any verbal comprehension difficulties and work with the speech and language therapist and other team members such as an Educational Psychologist in order to provide the best support for the child in the classroom situation.

It is worth noting that teachers use the term 'reading comprehension' which *may* involve answering questions about the text. For speech and language therapists, comprehension is only about the ability to understand and that understanding is usually signaled by pointing to a picture from a choice of pictures, or following an instruction. Giving answers about a text to demonstrate reading comprehension involves using spoken language and this falls into the domain of expressive language

Prognosis

Prognosis is the long-term outlook for children with this condition. Children with comprehension difficulties are at higher risk of persistent problems than children who have difficulties with expressive language skills only.

What is the treatment for receptive language disorder?

To date there is no 'gold standard' therapy for comprehension difficulties, which may not be a single problem, but may affect one or more of the components of comprehension. A speech and

language therapist and specialist teaching staff will be able to recommend suitable approaches following a full assessment of the child's communication skills. Evidence-based therapy approaches should be used, that is, approaches based on current theory of language acquisition and backed up by research. Law *et al.* (2003) found that there was '...less evidence that interventions are effective for children with receptive difficulties...'. There is some evidence that if the child has both receptive and expressive language disorder then **expressive skills** should be targeted first (Petursdottir and Carr, 2011). Therapy should be intensive enough to make a difference and brief interventions comprising of fewer than six hours do not appear to be effective (Law and Conti-Ramsden, 2000).

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Please note: Afasic does not hold copies of any referenced material. These publications should be available at academic libraries.

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