LANGUAGE PATHOLOGY, also **speech pathology, communication disorders, logopaedics, phoniatry** (the various names are paralleled by such names for practitioners as *speech therapist*, *speech pathologist*, and *communicologist*). The study of disorders of spoken or written language, and the disorders themselves. Some scholars include disorders affecting ability to use sign language alongside those of speech and writing. Alternatives have been proposed to the term *pathology*, given the exclusively physical and medical application of its original use; *handicap*, *disorder*, and *disability* are three of the most widely used labels, though nuances differ: for example, 'disorder' implies a more severe disruption than 'disability'. There are two broad approaches to the subject:

(1) **The medical model.** This model examines pathologies of language in relation to their causes and physical symptoms. For example, the articulation of children born with a cleft palate is related to their abnormal anatomy and physiology, and to associated problems, such as

reduced hearing in some cases. Other cases with medical antecedents include the language of deaf children, of children who have suffered brain damage, of aphasics, and of people whose vocal cords have been affected by growths or other conditions. Estimates vary, but about 40% of all pathologies can be related to medical causes. In the remaining cases, the reason for the problem is unclear; there is no obvious medical condition which could explain it, and the person affected seems within normal limits when subjected to medical tests. An appeal may be made to psychological, social, linguistic, and other factors, but it is difficult to arrive at a definite conclusion in such cases. These pathologies include cases of delayed language development, stuttering, abnormal voice quality, and linguistic problems associated with such conditions as hyperactivity, autism, and schizophrenia. In many cases, the combination of medical and other factors seems to be the only way of explaining the symptoms: for example, an abnormal voice quality may have begun as a physical problem, but if the speaker uses the voice professionally, anxiety may build up which in due course exacerbates the condition. Similar combinations of factors must operate to explain the remarkable variety of linguistic symptoms encountered in people who have the same medical condition: for example, a group of profoundly deaf children (all displaying the same levels of hearing loss) will manifest different kinds of language, depending on such factors as personality, intelligence, family background, memory and attention skills, and type of education.

(2) **The behavioural model.** Because medical factors can explain only a part of the problem, an alternative approach of a behavioural nature has been devised that looks directly at the linguistic symptoms and indirectly at the causes. It operates by taking a sample of language from the affected person, spoken or written, audio or video, of sufficient duration to represent the nature of the disorder. This sample is transcribed and analysed, so that the characteristics of the abnormal patterning become apparent. On the basis of this analysis, an assessment is made of the level of abnormality, and in association with non-linguistic factors (primarily, information obtained from psychological and medical tests) a diagnosis is made. Following this, recommendations are given for intervention, and a teaching programme outlined, to be implemented by speech therapists or other professionals. This kind of approach is essential in the case of language-disordered children, where there is often very little medical history and all one has to go on is the child's observed behaviour. It is also important in such cases as stuttering and lisping, where the original causative factors are usually obscure or unknown. The application of linguistics to the study of these problems is a relatively recent development known as *clinical linguistics*.

The communicative chain. Language pathologies are usually classified, using the medical model, in terms of interference with the normal communicative chain of events, involving input, central integration, and output. The chief disruption in input is deafness. Another problem arises when hearing is intact and the signal reaches the brain, but there are difficulties in decoding the signal. One such problem (*auditory agnosia*) is a failure to recognize the nature of incoming auditory stimuli: the sufferer is unable to recognize familiar sounds and cannot identify them in a consistent way. A further problem arises from brain damage which results in *receptive aphasia* (*receptive dysphasia*), an inability (mild, moderate, or severe) to comprehend grammar and vocabulary: a receptive aphasic hears incoming speech, but does not understand it. The converse problem is *expressive aphasia* (*expressive dysphasia*), an inability to produce the grammar and vocabulary of normal speech. Expressive aphasics know what they want to say, but are unable to formulate the sentences they need. The problem may be of varying severity. It is also possible for aphasics to be *globally* affected, with severe disruption of both receptive and expressive ability.

Damage to areas of the brain specifically concerned with language can produce other disorders. In particular, the ability to make voluntary movements of the vocal organs may be impaired, so that although the intention is present to produce a particular word, the wrong sounds are produced when the speaker attempts to say it. This disorder is known as *dyspraxia* or *apraxia*, often more specifically labelled *verbal* or *articulatory dyspraxia*. In such cases, there is no paralysis of the muscles controlling speech; in this respect, the disorder can be distinguished from *dysarthria*, which is a disorder arising from paralysis affecting the muscles controlling the vocal organs. The problem may be mild (as in a slight difficulty in lip movement), moderate, or severe (as in a major disruption to the functioning of the vocal cords, soft palate, and tongue). Other output problems include various disorders of fluency, which affect the ability of the speaker to control the timing and sequencing of sounds. *Stuttering* or *stammering* is the most widely recognized handicap here, but there is also *cluttering* (uncontrolled speed of speech). Speech can also be badly affected by such diseases as myasthenia gravis or Parkinson's disease and a wide range of problems can affect the vocal cords.

See AGRAMMATISM, ANOMIA, APHASIA, COPROLALIA, DYSGRAPHIA, DYSLEXIA, ECHOLALIA, GLOSSOLALIA, LISP, LOGORRH(O)EA, NEUROLINGUISTICS, SLIP OF THE TONGUE, SPEECH PATHOLOGY, SPEECH THERAPY, STUTTERING/STAMMERING, WORD-FORMATION (TOURETTE). [LANGUAGE]. D.C.