1

Defining overlapping and co-existing conditions

This chapter sets the scene for the rest of the book by:

- **presenting case studies of two children as illustrations of overlapping and co-existing disorders**
- **explaining how the terms used to describe childhood disorders have changed over time**
- **discussing the meaning of overlapping disorders and ones that co-exist**
- **defining the four main groupings of developmental disorders that are the focus of this book.**

What's in a label?

It is a comparatively recent phenomenon that children with **developmental disorders** may be given not just one diagnosis but two or more. This has happened at a time when the number of terms being used to describe different disorders has increased. For instance, '**specific learning difficulties**' now covers not just **dyslexia**, but **dyspraxia**, **dyscalculia** and **dysgraphia** as well. Other terms, such as **autism**, have broadened their definition to become '**autistic spectrum disorders**' (ASD), which includes **Asperger's syndrome**. As the numbers of **labels** being used have both increased and expanded, it has become apparent that children with different disorders may exhibit some of the same symptoms. It has also become clear that there are certain conditions that quite often go together, so that what were once seen as entirely separate disorders now need to be viewed as ones that may overlap or co-exist. The question then arises as to how to educate these more complex children, while not detracting from the educational experiences of their peers. This book has been written to shed light on the current situation, to consider the impact of certain conditions on children's ability to learn effectively, and to look at the approaches and strategies that might assist all children to become successful learners.

Case study 1.1: Tommy, 8 years old

Tommy was seven years old when he received a diagnosis of attention deficit hyperactivity disorder (ADHD) from the family doctor. He had struggled to cope in his infant school, and the staff had struggled to cope with his behaviour, which combined impulsiveness with an inability to concentrate on anything for more than a few minutes. As he moved to his junior school and the same pattern of behaviour continued, his parents agreed with the doctor that it would be worth putting him on medication for a trial period. Unfortunately, this seemed to have little effect, so after a few months the medication was stopped. Tommy's behaviour continued to be erratic. When he was eight, and after being involved in several playground fights, the school excluded him for lashing out at a member of staff who was trying to direct him to go back to class at the end of playtime.

On his return to school after his fixed-term exclusion, he was seen by the school's educational psychologist (EP), who sent him to a paediatrician. After assessing Tommy, the paediatrician explained to his parents that their son met the criteria for a diagnosis of Asperger's syndrome and that ASD would be a more accurate description of Tommy's difficulties than ADHD.

Case study 1.2: Sylvie, 12 years old

Sylvie had been diagnosed with dyslexia when she was eight years old. Her teachers had always expressed surprise that someone who was so keen to do well had struggled to get off the ground with both reading and written work. Not only was her spelling very weak, but her handwriting was almost illegible. For the rest of her time in primary school, Sylvie received extra help twice a week from a teaching assistant who worked with a small group and concentrated on improving the pupils' reading ability. Although Sylvie made some progress, as the gap between her and her peers widened, she became less motivated and her behaviour deteriorated. She also found it hard to make friends and was often the last one to be picked for team games, mainly because she was slow at running and her ball skills were poor.

When she reached secondary school, Sylvie was placed in the learning support unit (LSU), where the teacher in charge decided to look more closely at the nature of her difficulties. From the assessments the teacher carried out in conjunction with a specialist teacher for dyslexia, there seemed to be no doubt that Sylvie had severe dyslexia. However, in addition, she was referred to the local child development centre, where her difficulties with coordination resulted in the physiotherapist and the occupational therapist agreeing that she had dyspraxia in addition to her dyslexia.

In the first of these case studies, Tommy begins by having a diagnosis of ADHD, which is later replaced by one of ASD. This is an example where a label is changed over the course of time, as the child's development seems to indicate that a different term might be a more accurate one. At first glance, it may seem that ADHD and ASD are two very different conditions; yet, children with either condition can appear to be inattentive and socially inept. In Tommy's case, as he

grew older, one label was changed for the other; in other cases, a child may be diagnosed with both ADHD *and* ASD.

The second case study is that of a child who acquires the label 'dyslexia' and it is later discovered that she also has another specific learning difficulty in the form of dyspraxia. In this case, the first label was not wrong, but it may have prevented professionals working with her from realising that dyslexia was not her only difficulty. In Sylvie's case, it was not so much a question of overlapping symptoms (although, as discussed later in this chapter, all four of the specific learning difficulties recognised to date do have some symptoms in common), but that specific learning difficulties can co-exist. Later on, it will become apparent that they can also co-exist with some of the other disorders explored in this book.

At first glance, it may seem that there is a clear distinction between the terms *overlapping* and *co-existing* disorders.

Key points Overlapping and co-existing disorders

Overlapping disorders

Overlapping disorders are ones that have some symptoms in common (as in the case of Tommy in Case Study 1.1).

Co-existing disorders/co-morbidity

Co-existing disorders or co-morbidity is the term used when the same child has more than one condition (as in the case of Sylvie in Case Study 1.2).

Note: The terms *condition* and *disorder* are used interchangeably in this book.

However, there may come a point when two conditions that are seen as overlapping, share so many symptoms, that it is no longer sensible to talk of them as being separate disorders. For instance, time will tell whether or not dysgraphia will establish itself as being sufficiently different from dyslexia, or whether the definition of dyslexia will broaden to encompass dysgraphia. (The four types of specific learning difficulties are described later in this chapter.)

Questions for reflection

1 Can you think of a child you know who was diagnosed with one condition, which was subsequently changed to a different diagnosis?

2 Do you know of any children who have been diagnosed with more than one condition?

3 Can you think of any children who have not been given a label beyond the general one of having special educational needs (SEN)?

Changing terminology

In the 1970s, when a committee chaired by Mary Warnock was asked to look into the education of children and young people who, at that time, were described as **handicapped**, the emphasis was on placing pupils in categories of handicap, rather than seeing them first and foremost as unique individuals. The small percentage of pupils who were seen as being handicapped were likely to be educated in a special school catering for that particular type of need. Little account was taken of whether or not their difficulty meant that they had the cognitive ability to benefit from being in a mainstream classroom. There are people today, many of them with a physical disability, who feel resentful that they were not allowed to attend their local schools.

Although the term SEN was introduced to encourage a move away from focusing on categories of need, to seeing the child first and foremost as an individual, labels have never gone away. Some have been changed to sound less derogatory, such as *learning difficulties*, instead of **educationally subnormal**, or *behavioural, emotional and social difficulties* (BESD), rather than **maladjusted**.

Some of these changes were reflected in the first *SEN Code of Practice* (1994). By the time it was revised in 2001, ASD had become recognised, and dyspraxia had joined dyslexia as another type of specific learning difficulty (SpLD). Since then, dyscalculia and dysgraphia have been recognised under SpLD; ADHD has risen to become the largest group within BESD; and multisensory impairment (MSI) has been added to the other types of sensory needs. Several terms are now used to describe difficulties with spoken language, including *speech, language and communication needs* (SLCN) as a broad description and *specific language impairment* (SLI) to describe a smaller group of those with more significant needs. Figure 1.1 summarises how these labels have altered over time.

SEN and disability

To reflect the 2001 Special Educational Needs and Disability Act (SENDA), which brought together the needs of pupils with SEN and those with a disability, the phrase *SEN and disability* is often used rather than SEN on its own. While *SEN* is an educational term, which seeks to throw light on the educational provision that may be needed, *disability* is a medical term, which does not necessarily encompass any educational implications. There is a significant overlap between these terms, although, as the definition of disability has widened, there is also a group of pupils who are considered disabled who do not have SEN. Figure 1.2 is an attempt to clarify the boundaries between SEN and disability, although it is important to note that this is not a comprehensive mapping of all the conditions, but is designed to give an indication of the overlap between the two terms. Nor is the figure drawn to scale.

In this book, the term 'SEN,' rather than 'SEN and disability' is used, as the book does not directly include those who are disabled but who do not have SEN.

1970s	1994	2001	Current terms
Educationally subnormal	Learning difficulties	Cognition and learning: MLD, SLD, PMLD	Global or general learning difficulties: MLD, SLD, PMLD
	Specific learning difficulties: dyslexia	Cognition and learning; specific learning difficulties: dyslexia and dyspraxia	Specific learning difficulties: dyslexia, dyspraxia, dyscalculia, dysgraphia
Maladjusted	Emotional and behavioural difficulties (EBD)	Behavioural, emotional and social difficulties (BESD)	BESD, including ADHD
Blind	Sensory impairment: visual difficulties	Sensory and/or physical needs: visual difficulties	Visual impairment (VI)
Partially sighted	As above	As above	As above
Deaf	Sensory impairment: hearing difficulties	Sensory and/or physical needs: hearing difficulties	Hearing impairment (HI)
Partially deaf	As above	As above	As above
Physically handicapped	Physical disabilities	Sensory and/or physical needs: physical impairments	Physical impairment or disability (PI/PD) Multisensory impairment (MSI)
Speech defects	Speech and language difficulties	Communication and interaction: speech and language delay/ disorder Autism	Specific language impairment (SLI); speech, language and communication needs (SLCN); autistic spectrum disorders (ASD)

Figure 1.1   Changing terms in SEN between the 1970s and the present

Disability   SEN and disability   SEN

Some medical
conditions,
such as:
asthma,
eczema,
other allergies,
diabetes,
childhood
cancer

General learning difficulties (MLD,
    SLD, PMLD)
Behavioural, emotional and social
    difficulties, including ADHD
Tourette's syndrome
Autistic spectrum disorders
Speech and language impairments
Specific learning difficulties
Hearing, visual and physical
    impairments

Mild
learning
difficulties
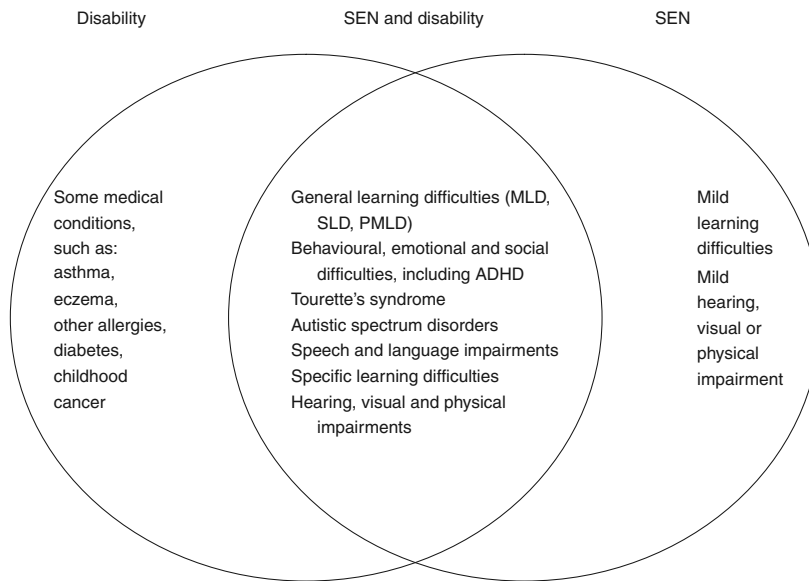Mild
hearing,
visual or
physical
impairment

Figure 1.2   An indication of the overlap between SEN and disability

Note: This diagram is not comprehensive, nor is it drawn to scale.

Questions for reflection

1   Do you think that most of the labels used today are an improvement on the
    ones used previously?

2   As diagnosis becomes a more refined tool, additional terms are appearing.
    Is this a useful development or not?

3   Do you think it would be more helpful to use the phrase 'SEN and disability,'
    or to clarify the distinction between SEN and disability?

Defining developmental disorders

In general, the term *developmental disorders* is used to describe disorders that are
present in childhood and are thought to have a biological basis. Although many of
the biological markers have not been found, it is thought likely that in some cases
a genetic programming fault of some kind impacts on the normal development of
the brain before birth. In other cases, something else goes wrong in neuronal devel-
opment during the delicate process of the brain being formed. In either case, this
predisposes children to certain disorders while not actually causing them. These
disorders are sometimes grouped into:

• those where the gene has been identified (for example, Down's syndrome)

• those that are the result of environmental factors (such as Foetal Alcohol Syndrome)

- those of unknown origin

- those where there are neurological abnormalities, the precise nature of which has yet to be determined.

This book does not set out to cover every type of need, or even every type of developmental disorder, but concentrates on this last group. Sometimes, they are referred to as **neurodevelopmental disorders** because it is known that abnormalities in the development of the brain are involved in producing these conditions, even though the actual genes have yet to be identified. The particular group of disorders that are the focus of this book have been selected because they have the following features in common:

1 a biological basis that is not yet fully understood

2 symptoms that overlap with other disorders in this group

3 a tendency to co-exist with each other or with other disorders

4 the disorders appear to be on the increase

5 the disorders are sufficiently prevalent to be of interest to teachers, other professionals and to parents.

Taking these criteria, the book focuses on:

- ADHD

- ASD, including Asperger's syndrome

- specific language impairments (SLI)

- specific learning difficulties (SpLD), including:

  o dyslexia

  o dyspraxia

  o dyscalculia

  o dysgraphia.

Diagnosing developmental disorders

Diagnosing the developmental disorders under consideration in this book is not an exact science. Even ADHD and ASD, which carry a medical diagnosis, will not have the outward signs of a physical illness, so decisions about whether or not to give a child a particular label may not be straightforward. In the main, a diagnosis of a developmental disorder will be made after taking a case history of the child's development, listening to the views of the family and the school, analysing the behaviours the child exhibits and using any relevant assessments.

There are two internationally known reference books that give guidelines for diagnosing the developmental disorders under discussion. These are:

1 *ICD-10*, which is the 10th edition of the *World Health Organisation's International Classification of Diseases*.

2 *DSM-IV-TR*, which is the latest edition of the *American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders*.

Apart from the criteria given in *ICD-10* and *DSM-IV-TR*, the training of the professionals undertaking the diagnosis will determine the criteria and assessments they use.

Since the Children Act of 2004, with its emphasis on interagency working, and the development of the Common Assessment Framework (CAF), it is to be hoped that children with difficulties will be picked up at an earlier stage and that any agencies involved will at least be aware of the other professionals working with the child and his or her family. In time, this should help to prevent some children's difficulties becoming entrenched. However, many of the children with the neurodevelopmental disorders, being considered here, will have significant and long-term difficulties that will require a more specialist diagnosis to be made.

As well as the difficulties in making an accurate diagnosis being exacerbated by conditions having overlapping symptoms and sometimes co-existing, another problem can be the child who clearly has difficulties, but who does not present as having enough symptoms under any one heading to merit being given a label at all. These children, along with those who are only mildly affected by a particular condition, are among those where a diagnosis may not be clear-cut. It is comparatively easy to spot the child who has classic autism, severe dyslexia, or a very significant speech and language impairment, but it is much harder to spot these same difficulties in a less extreme form. At the milder end of any continuum or spectrum, there will be a gradual reduction in severity until a condition blends into the normal range. For instance, at what point does the very lively, seemingly wilful child become a candidate for ADHD, or the child who is clumsy and uncoordinated need to be labelled dyspraxic? (All these points about diagnostic labels are discussed in Chapter 3).

🔑 Questions for reflection

1 Are you familiar with the Common Assessment Framework (CAF) and, if so, what do you see as its strengths and limitations?

2 Are there staff at your school who are able to assess some of the kinds of needs under discussion?

3 What links does your school have with other professionals so that pupils can be assessed by someone with the relevant knowledge and training?

4 Are you aware of children who seem to have SEN but who do not fit a particular type of need?

Different disorders

The next part of this chapter discusses the nature of each of the neurodevelopmental disorders that are the focus of this book. Each one is discussed separately, before examining in later chapters, how far they appear to overlap and/or co-occur, and what effect this has on the child's capacity to learn.

The four main disorders are listed in alphabetical order. After each description, there is a photocopiable list of some of the symptoms that may be present. These are not designed to enable the reader to make a diagnosis, but can be used as an indication of whether or not there may be cause for concern. The charts can also be used to give a baseline of a child's performance and to measure the effectiveness of any interventions that take place, by dating the additional columns and recording progress. The charts can be used with individuals whether or not they have a particular label.

Attention deficit hyperactivity disorder (ADHD)

Although there is still some controversy about this diagnosis, there is a growing acceptance of ADHD as a developmental disorder. These are not children who are wilfully naughty, but who have extreme difficulty in controlling their behaviour. The three key symptoms are:

1   inattention

2   impulsiveness

3   hyperactivity.

Originally, children were diagnosed as ADD (attention deficit disorder) or ADHD (attention deficit hyperactivity disorder). Today, it is more usual to talk about three sub-types:

1   predominantly inattentive (as in ADD)

2   predominantly impulsive and hyperactive

3   inattentive, impulsive and hyperactive (combined type ADHD).

ADHD is the most common behavioural disorder. It has been said to affect around 5 per cent of children of school age, with 1 per cent being severely affected. There is a ratio of 4:1 boys to girls, but 1:1 in the inattentive type. Although the next chapter goes into more detail about which conditions co-exist, it is important to mention here that ADHD is more likely to exist alongside other disorders, including **oppositional defiant disorder** (ODD) and **conduct disorder** (CD), than to be present on its own. In his book *Can't Learn, Won't Learn, Don't Care: Troubleshooting Challenging Behaviour*, O'Regan (2006) uses the term 'can't learn' for those with ADHD, 'won't learn' for those with ODD and 'don't care whether they learn or not' for pupils with CD.

☞ Key points ODD and CD

Oppositional defiant disorder (ODD)

Those who have ODD are likely to be negative, defiant and spiteful, arguing with adults and defying rules. They may lose their temper easily, annoy others and blame someone else when things go wrong. Despite constantly upsetting others, they are easily upset themselves.

Conduct disorder (CD)

Those with CD have repetitive and persistent patterns of anti-social behaviour. They are aggressive to people and animals and can be physically cruel. They may bully, start fights and use weapons. They can be deceitful, breaking into cars and houses, and shoplifting or lying to obtain goods. They may be arsonists.

There are two other conditions that are mentioned, both in relation to ADHD and ASD. These are **Gilles de la Tourette's syndrome** (which is commonly abbreviated to 'Tourette's'), sometimes described as the extreme end of ADHD, and **obsessive–compulsive disorder** (OCD). Those with OCD can have obsessions, or compulsions, or both obsessions and compulsions.

☞ Key points Tourette's and OCD

Tourette's syndrome (Gilles de la Tourette's syndrome)

The symptoms include both vocal and motor **tics:**

- vocal tics – noises (grunts, barks, yelps, etc.), or words (repetition, swearing, etc.)

- motor tics – such as twisting the body, blinking, touching, squatting, or retracing steps when walking.

While others may have tics, those with Tourette's syndrome will have both vocal and motor tics.

Obsessive–compulsive disorder (OCD)

Obsessions are recurrent or persistent thoughts, impulses, or images that cause anxiety or distress, such as tidying up incessantly or rearranging objects.

Compulsions are repetitive behaviours (washing hands, checking), or mental acts (counting, repeating words), which the person feels driven to perform according to rigidly applied rules, as they fear something terrible will happen if the compulsions are not carried out.

Both obsessions and compulsions cause distress, are time consuming and interfere with normal living.

Figure 1.3 **Attention deficit hyperactivity disorder (ADHD)**

Symptoms	Date	Date	Date	Date	Date	Date
Inattentive/distractable						
Sometimes appears to be in a world of his/her own						
Poor listener; does not always respond when addressed and forgets instructions						
Lacks concentration; flits from one activity to the next; easily bored						
Does not complete tasks; gives up easily and is disorganised and forgetful						
Work is full of errors and untidy						
Distracted by what others are doing, or other events occurring in the vicinity						
Impulsive						
Acts without thinking of consequences; does not plan what to do next						
Calls out and interrupts; does not wait his/her turn; needs instant gratification						
Blurts out answers to questions without thinking						
Talks incessantly; constantly asks questions, but does not wait for answers						
Hyperactive						
Fidgets, fiddles and has boundless energy; always out of his/her seat						
Does not settle to tasks; easily distracted						
Tears about knocking into objects and people; engages in risky physical exploits						

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Autistic spectrum disorders (ASD), including Asperger's syndrome

Autism is a medical diagnosis, which is often given when the child is around three years of age, although people with Asperger's syndrome, may be identified at a much later stage. Today, the term *autistic spectrum disorders* is preferred to autism, as it reflects more closely the fact that autism has many forms. In both *ICD-10* and *DSM-IV-TR*, the term **pervasive developmental disorders** (PDD) is used to cover ASD as well two much rarer conditions: **Rett's syndrome** (which mainly affects girls) and **childhood disintegrative disorder** (CDD). The term PPD-NOS is also used. This stands for a *pervasive developmental disorder – not otherwise specified*. More common in this country is the use of the term *atypical autism* to describe a child who displays some of the symptoms of ASD, but not sufficient for a full diagnosis to be made. The autistic spectrum is often seen as including:

- Kanner's or classic autism

- high-functioning autism

- Asperger's syndrome.

Children with classic autism are likely to have **moderate** to **severe learning difficulties** (MLD or SLD) in addition to their autism. Children with Asperger's syndrome are less entrenched in their own world and may be keen to communicate and to make friends, but their egocentric view of the world and their lack of empathy can cause problems. Although they might be seen as being nearer the norm, life can be hard for them, because they are more aware that they are different, and there is a danger that as they grow older, they may become depressed. Not everyone differentiates between high-functioning autism and Asperger's syndrome, although there may be a valid distinction to be made.

Key point *The autistic spectrum*

Classic autism	High-functioning autism	Asperger's syndrome
Usually combined with SLD or MLD	*Average or above intelligence*	
The hardest to reach and teach.	Able intellectually but day-to-day living is impaired by the degree of autism.	Less obviously autistic, but still displaying all major aspects of autism. More capable of independent living.

In addition to the triad of impairments (in the areas of communication, socialisation and imagination), children with ASD find it hard to cope with change or to adapt to different social settings. They are often **hyposensitive** (lacking in sensitivity), or **hypersensitive** to: loud noises, too much visual stimulation, the texture of certain

clothes, strong smells such as scent, or the taste of all but a very narrow range of foods. They generally find it easier to take in information that is presented visually and they may think in pictures rather than words. Temple Grandin, one of the best known adults with autism, and a world authority on the design of 'humane' slaughterhouses, has described pictures as her first language and words as her second.

The incidence of ASD has risen dramatically, so that it has changed over a comparatively few years from being termed a low incidence need, to one where a figure of 1 in 100 is being suggested. Far more boys than girls are affected. Other conditions may co-occur, but these may be in danger of being overlooked once a diagnosis of ASD is made.

Specific language impairments (SLI)

According to Noam Chomsky, whose ideas on the subject have been largely accepted, humans are pre-programmed to develop language. There are over 6,000 languages in existence, which, between them have 800 different sounds. While acquiring language is an innate ability, learning a particular language will rely on hearing it spoken (or seeing it signed). By the time they are six, children will have mastered most of the sounds of their language (**phonology**), learnt how to produce correct sentences (grammar), fathomed out the meaning that is produced when words are strung together (**semantics**), and become familiar with how to use language (**pragmatics**).

These different areas illustrate the complexity of the young child's task, so perhaps it is not surprising that something can go wrong with any of the aspects of learning to understand what others say (receptive language), or to produce coherent speech (expressive language). The term *specific language impairment* (SLI) is generally used to discuss the group of children whose language development is disordered and not simply delayed. Sometimes the terms *speech*, *language* and *communication* are used almost interchangeably, but there are significant differences between them.

🔑 Key points Speech, language and communication

Speech is a part of language.

Language is a part of communication.

Communication involves spoken and written language, as well as facial expression, posture, gestures and signs.

Children's difficulties with oral language are described in different ways, but they include:

- **phonological disorder** which will result in not being able to reproduce the 44 sounds of the English language

- difficulty with grammar, which may affect how individual words are constructed (**morphology**), or how words are put together in sentences (**syntax**)

- problems with the meaning and the use of language, which is described as a **semantic-pragmatic disorder**.

**Figure 1.4** Autistic spectrum disorder (ASD), including Asperger's syndrome

Symptoms	Date	Date	Date	Date	Date	Date
Communication Does not talk or talks very little Does not respond to questions Echolalic (repeating what has been said) May recite chunks of Disney films						
Asperger's syndrome Talks fluently on subjects of interest Poor conversational skills Does not understand non-literal language May have a pedantic manner and unusual intonation						
Social interaction Appears to be in his/her own world Does not seek out physical contact Prefers solitary activities Does not understand about sharing						
Asperger's syndrome Wants to socialise but does not know how Does not pick up on non-verbal cues as to how people are feeling Lacks empathy Gets into arguments and fights						
Imagination Does not play imaginatively Does not indulge in symbolic play Lines objects up rather than playing with them Wants to do the same non-productive activity over and over again						
Asperger's syndrome Good at learning facts and figures; less good at abstract thought Absorbed by narrow range of interests						

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If it is the case, as some suggest, that there are children with semantic-pragmatic difficulties who are not autistic (semantic-pragmatic difficulties being one of the features of the communication impairment of those with ASD), it may be that, like those with atypical autism, they inhabit a grey area between the end of the autistic spectrum and the rest of the population:

Atypical autism

Autistic spectrum disorders   PDD-NOS   Majority of population
Semantic-pragmatic disorder
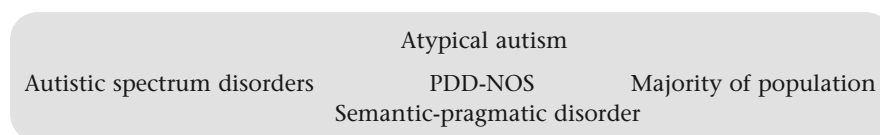
Other difficulties include:

- *lexical retrieval deficit*, more commonly referred to as *word-finding problems*, where a child struggles to retrieve a word and will use non-specific words and circumlocution instead

- *verbal dyspraxia*, where there is a lack of control over the muscles involved in speech production. (Verbal dyspraxia is also mentioned under specific learning difficulties.)

Other problems, such as **selective/elective mutism**, stammering or stuttering, are not considered in this context, as they may have more of a psychological than a neurological basis. The prevalence of SLI has been given as more than 5 per cent and, once again, more boys than girls have problems in this area. In Figure 1.5, it is important to realise that SLI can take many forms and a child may have combinations of difficulties that go across the headings that have been given.

Specific learning difficulties (SpLD)

Children who have *global* or *general learning difficulties* will be delayed in all areas of their development. These pupils are described as having moderate learning difficulties (MLD), severe learning difficulties (SLD) or **profound and multiple learning difficulties** (PMLD). Pupils with *specific learning difficulties* (SpLD*)* will have problems not related to their intellectual level, but arising from a neurological abnormality or dysfunction. Although it is easier to detect a specific learning difficulty in children who are within the average or above range of ability, it is possible for children to have both global and specific learning difficulties. In this case, however, it is less likely that any SpLD will be recognised. The four types of SpLD are discussed in the order in which they have become recognised, starting with dyslexia. Children with all types of SpLD have difficulties with organisation, planning and sequencing.

Dyslexia
Children who are dyslexic have difficulty learning to read and to spell. As reading is not a natural activity in the same way as learning to speak, some children will take more time than others to 'crack the code'. It is unfortunate that, unlike languages such as Finnish, German or Italian (which have a one-to-one phoneme–grapheme relationship), English is a very irregular language, which makes it much harder for children to learn the various ways of matching 44 different sounds to the 26 letters of the alphabet.

Figure 1.5   Specific language impairment (SLI)

Symptoms	Date	Date	Date	Date	Date	Date
Phonological/auditory difficulties Unable to pronounce all sounds Substitutes sounds Unable to differentiate between certain sounds Unable to separate out the sounds in words						
Gramatical difficulties Inclined to give one word replies Has difficulty with tenses and plurals Has difficulty with conjunctions and prepositions Finds it hard to comprehend or use complex sentences						
Semantic difficulties Finds it difficult to retain new vocabulary Has difficulty understanding new concepts May not understand non-literal language Has difficulty in expressing his/her thoughts						
Pragmatic difficulties Has difficulty in understanding how to adapt language to different social situations Makes inappropriate comments						
Semantic-pragmatic disorder Has difficulty with both the meaning of words and using language appropriately						
Word-finding difficulties Slow to recall words Uses non-specific words Uses circumlocution (Verbal dyspraxia – see Figure 1.6 under 'dyspraxia')						

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Much has been made recently of similarities between SLI and dyslexia, with both being seen as having a phonological impairment as a core deficit. However, Bishop and Snowling (2004), who are renowned in the fields of SLI and dyslexia respectively, suggest they should not be seen either as being one condition or as part of the same continuum, but as two separate conditions, albeit with overlapping features.

Dyspraxia/developmental coordination disorder (DCD)

Dyspraxia, or **developmental coordination disorder**, is the term used to describe children who have difficulty coordinating their muscles and therefore both their gross and fine motor development is often affected. At one time, they might have been referred to as 'clumsy', as their lack of spatial awareness and weakness in controlling their movements means they may knock into people and objects or stand abnormally close to them. They have difficulty with orientation and will forget which is left and which is right, or become confused finding their way from place to place. They find it hard to control and judge the accuracy of their movements in terms of direction and speed, particularly when they need to control both at the same time. Their sense of timing is poor, as is their ability to tell the time.

If the muscles used in the production of speech sounds are affected, the children will have verbal dyspraxia as well. Their speech will sound laborious and over-emphatic, as if it is an effort to produce the sounds.

Dyscalculia

This is a term used to describe pupils who have significant difficulty in acquiring mathematical skills, despite making progress in other areas of the curriculum and receiving good teaching. These pupils will have difficulty in understanding and using numbers, or carrying out any calculations involving numbers. They will be prone to sequencing numbers in the wrong order and be unsure which columns to place numbers in when writing out their sums. They will continue to rely on their fingers or other practical apparatus when their peers have moved on to mental calculations. Telling the time and understanding money will also be problematic.

Until recently, very little attention was paid to pupils who struggle with maths, whereas dyslexia has been recognised for many years. As mentioned previously, it is generally accepted that the human brain is pre-programmed to acquire language. In the same way, it is now being suggested that the brain may be hard-wired to handle numbers and to use calculation. Dyscalculia means that, due to a neurological abnormality, the person lacks this innate number sense.

Dysgraphia

Dysgraphia means difficulty in producing handwriting that is legible and which is produced at an age-appropriate speed. It can also include difficulties with content, stemming both from spelling problems and organising thoughts in a way that means they will be coherent on paper. Pupils with dysgraphia may have unusual body posture: leaning to one side, lying across the desk, or altering their posture as the writing moves across the page. They may try to get away with writing as little as possible, or they may show that they can produce more if it is done on the computer. The physical difficulties associated with dysgraphia may be linked to dyspraxia and a lack of control over the muscles.

Figure 1.6   Specific learning difficulties: dyslexia, dyspraxia, dyscalculia, dysgraphia

Symptoms	Date	Date	Date	Date	Date	Date
Dyslexia						
Slow to learn sounds						
Muddles vowel sounds						
Slow to blend words						
Sequences letters incorrectly						
Copies down incorrectly						
Disorganised						
Needs time to process spoken language						
Weak speller						
Dyspraxia						
Bumps into objects and people						
Runs with awkward gait						
Slow to learn to hop and skip						
Finds it difficult to balance, stand on one leg or kick a ball						
Slow to learn correct pencil grip						
Slow to dress and undress						
Verbal dyspraxia						
Exaggerated movements of mouth						
Makes undue effort to pronounce words						
Words not clear, but sounds as if talking when mouth is full						
Dyscalculia						
Lacks intuitive number sense						
Difficulty in sequencing numbers and counting						
Very slow to pick up number concepts						
When writing out sums, puts numbers in wrong columns						
Difficulty with direction, shape and space						
Slow to understand money or tell the time						
Dysgraphia						
Letters poorly formed						
Handwriting untidy						
Often writes very little						
Difficulty organising ideas to put them on to paper						
Body posture abnormal: lying on desk or moving across desk as writing moves across page						

It is reckoned that up to 10 per cent may be affected to some extent by dyslexia, with more boys than girls having the disorder. Not so much is known about the prevalence of other types of SpLD. It is interesting to note that not only may children have more than one type of specific learning difficulty (so that there is **co-morbidity** between them), but there are seen to be close links between specific learning difficulties and the other conditions being considered. These links are investigated further in subsequent chapters.

In this chapter, a group of four neurodevelopmental disorders has been the focus of the discussion, and the notion has been introduced that there is a degree of overlap and co-morbidity between them. This is explored further in the next chapter, in the context of what has been discovered about the underlying causes of these conditions.

Summary

Despite attempts to reduce the number of labels children are given and to focus instead on their needs, more children are being labelled.

Partly as a result of this, it is becoming increasingly common for children to be given more than one label. This raises the question of how far disorders overlap and/or co-exist.

There would appear to be a group of neurodevelopmental disorders, which seem very different, yet closer examination shows that they have much in common.

The following chapters will consider the neurological abnormalities of these disorders, how they affect children's learning, and how all pupils can be helped to become successful learners.

Further Reading

Chiat, S. (2000)   *Understanding Children with Language Problems*. Cambridge: Cambridge University Press.

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