Section I

Tackling problems

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Dyslexia and other developmental differences

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Introduction

I shall start this chapter by describing briefly some of the main characteristics of dyslexia. I shall then mention other developmental differences which may be relevant in the classroom in general and to teachers of music in particular. I shall end with a brief word about diagnostic labels.

I have chosen to speak of 'differences' rather than use such terms as 'anomaly', 'deficit', 'disorder', 'handicap' and the like. It is true that in society as it exists at present dyslexics and those with other differences tend to be disadvantaged (or 'disabled') in certain specific ways. The message of this present book, however, is to encourage people to think positively: it is important both that dyslexics should not undervalue themselves and that those who teach them should encourage their strengths rather than be thinking only of their weaknesses. The Adult Dyslexia Organisation (ADO) has suggested that we should think of dyslexics not as disabled but as 'differently abled'.

The nature of dyslexia

I have always thought that the most helpful way to characterise dyslexia is to say that it is a syndrome. 'Syndrome' is a term implying a cluster of

manifestations or symptoms, not necessarily identical in different individuals but showing an identifiable pattern.

In the great majority of cases, dyslexics are late in learning to read and, even with good teaching, are likely to remain poor spellers. In addition, most dyslexics have problems with short-term memory: if they have to listen to a long sentence, they may understand the early part but lose track before the end – it seems as though the amount which they can hold in mind is more limited than it is in the case of non-dyslexics. Some dyslexics show uncertainty over left and right, and a very large number have difficulty in learning their times tables (note 1.1).

It is now established that dyslexia has a physical (constitutional) basis, that is to say it arises from the way in which a person is made. This, of course, is nothing for which anyone can be blamed. The situation can be made worse by poor teaching or unsympathetic handling, but these are not the original causes of the difficulties.

It is known that dyslexia runs in families, although one sometimes comes across cases where there is no evidence of other family members being affected. It is almost certainly more common in males than in females. There is not yet agreement as to the details of what causes dyslexia. A widely held view is that dyslexics have a problem with phonology, that is with the recall and ordering of speech sounds (see in particular note 1.2). It seems likely that a major problem for most dyslexics is that of learning the correct label to attach to speech sounds – it is a problem of verbal labelling. Speech sounds are symbols and it appears to be symbols that cause dyslexics difficulty (note 1.3). Given that this is so, one would expect them to have difficulty with many different kinds of symbol, including those of mathematics and musical notation (see also Chapter 8).

If a child in your class is dyslexic, this calls for sensitivity and in particular for an awareness of when to take note of the fact. What is called for is not the abandonment of standards but a willingness to adjust one's standards so as to take into account the pupil's individual needs. As I shall show in Chapter 2, there are all kinds of things which may go wrong for the dyslexic.

Dyslexia takes a different form in different languages. In those languages where there is regular one-to-one correspondence between written letters and their sounds, learning to read and spell is not quite the problem that it is in English, where there are large numbers of so-called irregular words. For instance, the English 'yacht' is not spelled *yot* and 'neighbour' is not spelled *naber*. There are some languages, such as Welsh, Spanish and Italian, where there is a regular correspondence

between the sounds that we speak and the letters that we write, and in these languages learning to read is much easier.

Other developmental differences

In this section I call attention to a number of other developmental differences which have come into prominence in the last few decades. They are: ADD (attention deficit disorder) and ADHD (attention deficit hyperactivity disorder), dyspraxia, dyscalculia and the group of disorders referred to as autistic spectrum disorders (ASD). A useful term by which to refer to all differences such as these is 'neurodiversity'. People's nervous systems are diverse – they vary; different nervous systems are advantageous – or handicapping – for different purposes. There is no clear association between these conditions and high or low intelligence, and it is most important that the abilities of those showing developmental differences should not be underestimated.

Many of the manifestations which I shall be describing occur in all of us but only in a relatively mild form. The diagnostic label is appropriate only when the problems are severe and persistent. Also one needs to bear in mind that there can sometimes be what is called 'co-morbidity': more than one diagnostic description may be applicable in the case of the same individual, for example a number of dyslexics but by no means all of them are also dyspraxic.

ADD and ADHD

Those with ADD may have particular difficulty in sustaining concentration for more than a very short period of time. Written work may give the impression of being disorganised and carelessly put together. Tasks may sometimes be abandoned before they have been completed.

In the case of ADHD, there is the additional complication of hyperactivity – continual restlessness. The person with ADHD fidgets and finds it difficult to sit still. In the case of both ADD and ADHD, the individual is liable to act on impulse without adequate consideration of the consequences. Impulsivity may manifest itself in impatience and in difficulty in delaying responses until questions have been completed. It

may lead to accidents, for instance knocking objects over, bumping into people or impetuously grabbing a hot pan without working out that one will be burned. There may sometimes be engagement in potentially dangerous activities without consideration of what might be the consequences. It is possible that the condition sometimes runs in families, but, as in the case of dyslexia, this is far from being universal.

Dyspraxia

The essential feature of dyspraxia is, of course, poor motor co-ordination. In the case of children, it is sometimes known as 'developmental co-ordination disorder' (DCD) or as 'the clumsy child syndrome'. This poor motor control may lead to other effects – problems over accurate perception, speech difficulties, untidy handwriting, disorganised planning and sometimes slowness in retrieving information from print. Manifestations of dyspraxia are sometimes found among dyslexics, but this is relatively infrequent.

Dyscalculia

There is no agreement as to whether dyscalculia should be regarded as a distinct and separate syndrome or whether its manifestations are all part of the dyslexic syndrome.

There is no doubt, however, that severe and persistent problems with arithmetical calculation can regularly be found. Among them are a very small number who have few or no literacy problems. If these are variations within the dyslexia syndrome, then it would seem that some widening of the dyslexia concept is called for, so that it would be proper to call a person 'dyslexic' even in the absence of any severe reading or spelling problems.

On the other side of the coin, so to speak, there are very few dyslexics without any calculation problems. In my own research (Miles, 1997; Miles, 1993) I found that about 90% of the dyslexics whom I assessed could not recite the six-times, seven-times and eight-times tables without stumbling; and it seems common sense to suppose that dyslexics' difficulties with symbolic material should extend to mathematical symbols.

To complicate matters, there appear to be a small number of individuals who are impaired in their ability to reason mathematically, for example with matrices and block design tests, which the typical dyslexic can manage adequately.

One of the problems in this whole area is to know where to 'lump' and where to 'split', that is where to classify manifestations together as constituting the same syndrome ('lumping') and where to treat them as separate ('splitting'). Because of co-morbidity between syndromes, the whole situation is very untidy from the theoretical point of view. Provided there is careful examination of individual needs, however, this theoretical untidiness need not have an adverse effect on practice. Hopefully, advances in neurology will throw further light on the theoretical side.

Autistic spectrum disorders (ASD)

The main characteristic of autism is impaired communication with others. Those who are autistic are not easily able to understand the point of view of others and, as a consequence, they may be deficient in social skills. They may also be restricted in their use of eye-to-eye contact and may not easily be able to 'read' the significance of other people's gestures and bodily movements. Some of them may have an interest in forming friendships but these may not always be maintained; this may be due to their inability to understand other people's needs. Some autistic people have a restricted repertoire of activities and interests and keep returning to the same routines without attempting anything new.

Asperger's syndrome is thought to be a less severe form of autism – and again manifests itself in the inability to see the other person's point of view. Some of those with Asperger's syndrome are liable to miss out on the subtleties of language and take what is said entirely literally. One of the leaflets of the Asperger's Society describes someone who misinterpreted the expression 'She bit my head off'. I myself had the following two experiences: a student told me that he had recently photocopied a number of pages from a library book. I was unsure of the copyright regulations and wished to make clear that I did not wish to be associated with what he had done. I therefore said, 'I am rather deaf.' With a look of concern on his face the student said, 'Oh, I am so sorry.' In contrast another student, who had none of these developmental differences, asked if she could attend one of my lectures even though at the time she was not registered as a student. It would have been churlish to refuse, but to cover myself I mischievously said, 'I am rather short-sighted.' She got the message and attended the lecture. A few weeks later, wanting to attend another of my lectures, she came up to me and asked, 'Are you short-sighted again this morning?'

On the use of diagnostic labels

One sometimes hears it said that it is wrong to *label* children, whether as dyslexic, dyspraxic or anything else. I have never been able to subscribe to this view.

The correct diagnostic label is essential if the individual concerned is to be adequately helped. If correct diagnostic labels are not used, teachers are more than likely to act upon their own incorrect ones. I remember one occasion when an official said at a meeting on dyslexia, 'We don't label children' – and was greeted by an indignant mother who said, 'My son prefers the label "dyslexic" to the label "dumbo".' This provoked thunderous applause.

We should always remember, however, that, although those who carry a particular diagnostic label may have much in common, their needs may be different, particularly at different times of their lives. Within those who carry a particular diagnostic label there should never be a one-size-fits-all treatment.

Notes

Note 1.1. For further documentation of these claims the reader may wish to consult Miles (1993) and Miles (2006).

Note 1.2. For further discussion of the significance of phonological deficits in dyslexia see Snowling (2000) and Snowling and Hulme (2006).

Note 1.3. A colleague, Professor Nick Ellis, devised an ingenious series of experiments which suggested that if non-symbolic material were presented dyslexics performed no worse than controls. What he did was to adapt for use with dyslexics a procedure which had been devised independently by a psychologist named Posner. In our experiment the subjects were dyslexic and control children aged between 10 and 15 years. The stimuli were pairs of letters of the alphabet. The task was to press one key if the members of the pair were the same and to press another key if they were different. Sometimes the stimuli were two upper-case letters, for example OO, RR (same) or OB, RM (different); this was termed the 'visual match' condition. Sometimes, however, a capital letter was placed alongside a lower-case letter, for instance Bb, Mm (same) or Ba, Mb (different); this was referred to as the 'name match' condition. It was found that in the

visual match condition the dyslexic subjects were not significantly slower than the controls in making the decision but that they were consistently slower in the name match condition. The order of magnitude was not all that great (between a tenth and a fifth of a second) but it held up consistently. A brief summary of this research will be found in Miles (2006, pp. 78–79). A similar difference in subjects' responses to symbolic and non-symbolic material was found in the Kannada language (Miles, 2006, pp. 88–89).

Note 1.4. A brief account of ADHD, Asperger's syndrome and dyspraxia will be found in Du Pre *et al.* (2007, Chapter 2). For those interested in neurodiversity, the BRAIN HE project, led by David Pollack at de Montford University, Leicester, aims to provide thorough and up-to-date information from organisations which support neurodiversity in all its different forms. In this connection see www.brainhe.com.

Further information

Overviews of the dyslexia field will be found in Thomson (1991) and in Miles and Miles (1999). Other information relevant to this chapter will be found in Miles (2004), which is an edited book on the stresses experienced by many dyslexics, and in Miles and Miles (2004), which is an edited book on the mathematical difficulties experienced by dyslexics. Accounts of the many ways in which dyslexia affects the lives of musicians will be found in Miles and Westcombe (2001).

The Bangor Dyslexia Test (Miles, 1997) is available on the open market from Learning Development Aids, Duke Street, Wisbech, Cambs PE13 2AE. This test was used by Carolyn King (see Chapter 16) in testing 37 oboists, some of whom were showing clear signs of dyslexia.

Dyslexic teenagers or dyslexic adults who are considering going into higher education may like to consult Du Pre *et al.* (2007). Those interested in research studies may wish to consult *Dyslexia: An International Journal of Research and Practice*, published by John Wiley & Sons (Chichester), and *Annals of Dyslexia*, published by the International Dyslexia Association, Chester Building Suite 382, 8600 LaSalle Road, Baltimore MD 21285-2044, USA.

For advice on dyslexia, readers may like to write to the Adult Dyslexia Association, 336 Brixton Road, London SW9 7AA, to the British Dyslexia Association, 98 London Road, Reading RG1 5AU and/or to Dyslexia Action, Wick House, Park Road, Egham, Surrey TW20 0HH. The address of the National Autistic Society is: 393 City Road, London EC4 1NE.

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