

Does Dyslexia Exist?

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In this paper we argue that attempts to distinguish between categories of 'dyslexia' and 'poor reader' or 'reading disabled' are scientifically unsupportable, arbitrary and thus potentially discriminatory. We do not seek to veto scientific curiosity in examining underlying factors in reading disability, for seeking greater understanding of the relationship between visual symbols and spoken language is crucial. However, while stressing the potential of genetics and neuroscience for guiding assessment and educational practice at some stage in the future, we argue that there is a mistaken belief that current knowledge in these fields is sufficient to justify a category of dyslexia as a subset of those who encounter reading difficulties. The implications of this debate for large-scale intervention are outlined.

INTRODUCTION

A 22-year-old woman was condemned to 'temporary menial tasks', the High Court heard. P.P. claims that she is of average intelligence but because her learning difficulty was not discovered until two months before she left school, she never learned to read and write properly . . . Tests were carried out at infant, junior and comprehensive schools. At the age of 10 she was found to be four years behind in reading and writing skills but the reason was never identified (*The Guardian*, 27 July 1997, p. 5).

The Pamela Phelps case, cited above, would seem to provide a perfect illustration of the key issues that have surfaced in periodic media debates about the existence and utility of the concept of dyslexia. The case centred upon the argument that if a diagnosis of dyslexia had been forthcoming at an earlier stage of her school career her difficulties would more likely have been overcome. However, in putting forward this position, there was no suggestion that her reading problems failed to have been noted, or that there had been no follow up by specialists. An educational psychologist had seen her at primary school and, on transfer to secondary school, further assessment indicated that she had a reading accuracy age equivalent of 7 years and 3 months. She left school with a reading age equivalent of 8 years.

Although there have been cases of children with severe reading disabilities failing to receive any specialist attention, this was evidently not the case here. Miss Phelps had received remedial help in English and mathematics. The issue was not about the presence or absence of assessment and support but, rather, the failure to *diagnose* Miss Phelps' dyslexia. This, it was claimed, would have pointed to the most appropriate form of intervention, a highly structured, multisensory approach to the teaching of reading.

In what follows we suggest that the premises and logic of this claim do not stand scrutiny. We will go further and suggest that the persistence within educational and clinical settings of the notion of dyslexia as a discrete, identifiable (*diagnosable*) condition that is held to pertain only for some, rather than all, with literacy difficulties may obstruct inclusion and reduce overall educational attainment.

We seek, therefore, to question the meaningfulness, purpose and effect of the dyslexia construct. In arguing that a diagnosis of dyslexia has clinical or educational value, one would anticipate helpful answers to one or more of the following questions:

1. Is dyslexia a clinically or educationally meaningful term for differentiating between children with reading difficulties?
2. To what extent would the dyslexic diagnosis guide the educator in devising appropriate forms of intervention?
3. To what extent should the dyslexic diagnosis result in the differential allocation of resources or other forms of special arrangement?

Following consideration of these questions we conclude by turning to consider some reasons why and how 'dyslexia' might have become a socially constructed term of convenience.

QUESTION 1: IS DYSLEXIA A CLINICALLY OR EDUCATIONALLY MEANINGFUL TERM FOR DIFFERENTIATING BETWEEN CHILDREN WITH READING DIFFICULTIES?

In providing some answers to this question we explore the underlying theoretical and empirical bases in three areas (intelligence testing, biological factors, underlying cognitive processes), used to substantiate a distinct conceptualisation of dyslexia.

From a purely scientific perspective, and to take a Popperian stance (Popper, 1969) with regard to attempts to define dyslexia, it is apparent that it is not possible to set strictly unambiguous criteria of demarcation at either the genetic or the functional boundaries of what is, or what is not, dyslexia. Indeed Stanovich, in cogently demolishing the grounds for identification of dyslexia on the basis of reading-IQ discrepancies, points out that dyslexia, as with many 'developmental disabilities . . . carries with it so many empirically unverified [we would suggest *unverifiable*] connotations and assumptions' that the term might be helpfully abandoned (Stanovich, 1994, p. 579). From the perspective of natural science it is

evident that on the continuum of highly skilled to less-skilled readers, there is no clear discontinuity that provides an absolute categorical boundary for a diagnostic category of 'dyslexics'. As discussed below, studies that compare dyslexics with non-dyslexics frequently still select participants as representative of 'normal' and 'non-normal' (the latter typically reading at least one standard deviation below the 'norm') groups on the basis of researcher-defined criteria. It is perhaps, then, inevitable that patterns of abilities or functions that discriminate between the two groups may be found, *post hoc*.

It is also perhaps something of a paradox that determined advocates for the value of the label will readily agree that the nature of the underlying difficulties experienced by dyslexics can be highly diverse. The list of possible underlying difficulties typically found in the dyslexia literature is lengthy and it would appear that none of these is essential for the diagnosis (other than literacy difficulties themselves, of course). Thus, dyslexics are often considered to present with such (co-morbid) characteristics as: speech and language difficulties, poor short-term (or working) memory, difficulties in ordering and sequencing, clumsiness, a poor sense of rhythm, limited speed of information processing, poor concentration, inconsistent hand preference, poor verbal fluency, poor phonic skills, frequent use of letter reversals (d for b, for example), a difficulty in undertaking mental calculations, low self-image, and anxiety when being asked to read aloud.

The weakness of such lengthy lists is that they routinely fail to offer meaningful differentiations. Similar items to those listed above are often found in lists of signs of other developmental conditions such as attention deficit hyperactivity disorder or dyspraxia. (For this reason, some prefer to use the term 'specific learning difficulties' to describe those who present with such features.) Furthermore, many features seen as indicative of dyslexia can be found in people who have no significant literacy difficulties, and may be evident in poor readers who are not considered to be dyslexic. Many difficulties that are seen as typical of dyslexics are also found in younger normal readers who read at the same age level, for example, letter reversals (Cassar *et al.*, 2005). This suggests that such problems are more characteristic of a certain stage of reading development, than representing pathological features.

One simple way around this is to take an exclusionary approach that argues that dyslexics are those individuals whose literacy difficulties cannot be explained by low intelligence, socio-economic disadvantage, poor schooling, sensory (auditory or visual) difficulty, emotional and behavioural difficulties, or severe neurological impairment that goes significantly beyond literacy (Lyon, 1995). However, for many educationalists this is likely to prove highly problematic as it might typically exclude from intervention students who attend schools that are seen as poor, who live in disadvantaged neighbourhoods (Rutter, 1978), whose behaviour is problematic (perhaps, in part, because of academic frustrations), or those who score poorly on IQ tests.

Since the use of IQ tests still appears pervasive in many aspects of work in this field, we now address the issue briefly. Before doing so, however, it

important to note that the use of IQ tests as valid and equitable tools has been questioned by many psychologists (Cernovsky, 1997; Flanagan and McGrew, 1997; Lopez, 1997).

The Use of IQ in the Assessment of Dyslexia

Dyslexia ... exists across the whole range of intellectual ability and is identified when there is a characteristic profile of strengths and weaknesses, along with supporting evidence from other sources (Dyslexia Action website: <http://www.dyslexiaaction.org.uk>).

It is a puzzling phenomenon that, although leading academic researchers and dyslexia support groups now accept that reading difficulties typically encountered by the 'dyslexic' individual apply across the intellectual spectrum (see also Stanovich, 1994), IQ tests are still widely employed as a means for differentiating between dyslexic and poor reading groups (see, for example, a review by Rice and Brooks, 2004). This issue has great importance as the application of an IQ-achievement model can serve to exclude some children from specialised intervention (Catts, Hogan and Fey, 2003).

While a discrepancy between IQ and measured reading ability has long been a key criterion for dyslexia used by clinicians (McNab, 1994; Presland, 1991), more recent research studies have demonstrated that the difficulties encountered by 'dyslexics' are largely independent of intellectual functioning (Fletcher *et al.*, 1994; Stanovich and Stanovich, 1997). While more intellectually able poor readers will be able to use semantic and syntactic knowledge to help them make more sense of passages of text, this is of no help to them when they are asked to read single words—the key task for the study of dyslexia (Grigorenko, 2001; Stanovich, 1991; Vellutino, Fletcher, Snowling and Scanlon, 2004). Despite such understandings, Rice and Brooks (2004) note that IQ/reading test discrepancies continue to be used by many reading research laboratories to identify dyslexic subgroups. Nicolson and Fawcett, for example, define developmental dyslexia as 'unexpected difficulties in learning to read in children of average or above-average intelligence' (Nicolson and Fawcett, 2007, p. 135).

This is rather puzzling, as, with regard to single word reading, the lack of utility of IQ has been clearly demonstrated. As Frith (1997) argues, even if IQ/reading test discrepancies were used to identify a group of dyslexics, the reason for the discrepancies has still to be explained. In reviewing studies that have examined aptitude-achievement discrepancies, Stanovich notes that the information-processing operations underlying word recognition deficits are the same for poor readers with high or low IQ, there is no evidence that these two groups respond differently to treatment, and there is no evidence that any 'neuroanatomical defects that underlie the cognitive deficits of these two groups are different' (Stanovich, 1999, p. 352).

Given this body of research, it is unsurprising that the state of the art review by Vellutino *et al.* (2004), concludes that ‘intelligence tests have little utility for diagnosing specific reading disability’ (p. 29) and the authors recommend that practitioners should:

... shift the focus of their clinical activities away from emphasis on psychometric assessment to detect cognitive and biological causes of a child’s reading difficulties for purposes of categorical labelling in favour of assessment that would eventuate in educational and remedial activities tailored to the child’s individual needs (p. 31).

Of course, this advice applies to those types of literacy difficulties that are seen as most relevant to dyslexia (decoding and spelling). Some cognitive tests may be helpful in understanding the specific nature of children’s higher-order reading comprehension difficulties involving such processes as reasoning, inferencing and logical deduction (Vellutino *et al.*, 2004). Vellutino *et al.* went further, however, recommending that intelligence tests should not be used to identify dyslexia. Snowling (2008) also acknowledges that the use of IQ criteria to differentiate subgroups of failing readers has declined on the grounds that it does not differentiate between groups in terms of underlying phonological difficulties or response to intervention.

However, it is important to recognise that the agendas of researchers and educationalists may be different. Thus, for example, the differentiation used by Snowling (2008) is employed to explore potential differences in underlying cognitive processes. For academic psychologists, differentiating between groups of poor readers on the basis of intelligence *may* help to shed light on mechanisms of reading. However, as indicated above, there can be no theoretical or moral justification for making that an appropriate process for practitioner decision-making.

The Role of Biological Factors

Clearly, the examination of biological factors in reading has yielded many insights and offers great promise for the future (Fischer, Bernstein and Immordino-Yang, 2007). However, it is necessary to remain sceptical about how much has been learned from genetic and brain-based studies that is of significant assistance for making judgements as to whether an individual is or is not ‘dyslexic’. It is important to remember that this field of research typically examines populations encountering reading difficulty, not a special subgroup of poor readers that might be labelled ‘dyslexic’.

Attempts to isolate the fundamental underlying biological mechanisms that might be ‘at fault’ in reading disability (dyslexia?) have so far been unsuccessful. Whilst the phenotypic characteristics of dyslexia might seem obvious, it is probably sensible to regard reading generally (and dyslexia specifically) as having a high degree of phenotypic plasticity. Whilst at the level of enquiry into genetic influence it seems likely that

there may be some probability of genetic inheritance (Grigorenko, 2001), the indications are that this relates primarily to underlying language processing. However, even if the genotype were discernible (and it is argued that this is unlikely or at least very problematic; see Grigorenko and Naples, in press; Thomas and Karmiloff-Smith, 2002), environmental factors are highly influential on presenting behaviours—as we will illustrate later. Critically, as Grigorenko and Naples (in press) suggest, there is no certainty that hypothesised mechanisms are related only to ‘disordered’ reading or are involved in reading acquisition generally.

At the level of analysis of neurology and brain structure it also seems that there is no likelihood of discerning structures or mechanisms that are directly and uniquely implicated in reading. While there is much optimism about the potential of functional magnetic resonance imaging (fMRI), there continue to be a number of key methodological difficulties and, at the current time, this technique cannot be used for diagnostic purposes. It is too easily forgotten that brain activation differences are merely correlated with reading disability and these should not be interpreted as proof of causality (Schulte-Körne *et al.*, 2007). At present, the technique’s main contributions involve showing which brain regions underlie which reading-related functions (although a neural map of the processes associated with reading and learning to read has yet to be produced), and helping to improve upon existing models and theories (for a detailed discussion of these points, see Paré-Blagoev, 2007). Similarly, work in this area can offer little guidance for intervention for the available knowledge from the fields of neuroscience and genetics is ‘... too basic to draw specific and applicable conclusions for teaching and educational practice’ (Schulte-Körne *et al.*, 2007, p. 169).

Any attempt to support the clinical or educational value of the notion of dyslexia on the basis of brain abnormalities would, therefore, represent something of a conceptual sleight of hand (Elliott, 2005a). There is no theoretical justification for using neurology or genetics as the foundations for a clinical differential diagnosis of dyslexia, let alone a practical one. To do so is to leap from exciting work in laboratories that may hold great promise for the future, to making diagnostic decisions about individuals who need help and support now. Some commentators too readily jump from the laboratory to the classroom despite the fact that we are unable to prove a biological origin in respect of a given poor reader; psychologists and educationalists simply lack the measurement tools to make individual distinctions of this nature (Rice and Brooks, 2004). They may even be professionally disabled to some extent by such considerations (as may have been an outcome of the ‘Phelps’ case). Equally important, whatever their future promise, at the current time, genetic and brain studies currently cannot help us to make decisions about differential forms of intervention.

In summary, the faulty logic here runs as follows:

- a) On the basis of studies of children and adults with reading difficulty (a generic group often described by research scientists as dyslexic), genetic and brain-based factors appear to play an important role

- (although precise mechanisms are currently unclear). *Comment:* This appears to be incontrovertible.
- b) On the basis of such work we can conclude that dyslexics are those poor readers with some form of underlying biological difficulty. *Comment:* Note the faulty syllogistic reasoning here; the focus moves from research into the biology of reading difficulty that examines poor readers in general, to identification of a category that is seen to represent a subset of the wider group of poor readers who comprised such studies.
- c) On the basis of tests of cognitive functioning and relevant academic skills, and clinical interviews, we can identify from the wider pool of poor readers those who are dyslexic. *Comment:* There is currently no such way in which we can use our knowledge about genetics or brain functioning to make judgements. Of course, there is great promise for the future but it is beliefs about *today's* practice that we are contesting in this paper.
- d) These children can then be given appropriate intervention that differs from that provided to other children with reading difficulties. *Comment:* At present there is no evidence that biological insights regarding reading difficulty can meaningfully inform the exercise of differentiated forms of intervention.

The Role of Underlying Cognitive Processes

Another argument often put forward to support the clinical value of the concept of dyslexia stems from the work of cognitive psychologists. The rationale here is that key cognitive processes have been identified that can explain a dyslexic profile. Foremost among these is the role of phonological awareness (Bradley and Bryant, 1978, 1983; Snowling and Hulme, 2005), that is, the ability to recognise different sounds in spoken language. The majority of cognitive psychologists see reading as primarily a linguistic, rather than a visual, skill in which phonological factors play a significant role for beginning readers, and semantic and syntactic skills become increasingly important as the reader's expertise increases (Vellutino *et al.*, 2004). Literacy is parasitic on speech and language functions (Mattingly, 1972) and, as Snowling and Hulme (2005) note, given its recent development it is unsurprising that there is no evidence of phylogenetic development of neural or cognitive structures that are uniquely and primarily dedicated to literacy. In fact, there is as yet no agreed overarching account of how reading skills are acquired. It is, however, thought that difficulty with reading is experienced primarily because of difficulties in the process of translating between symbols and speech. While the 'most complete and coherent (across levels of explanation from reading behaviour to neurology) theory in this area' (Torgesen, 2007, p. 249), there is still some debate as to whether phonological awareness is the key explanatory factor of reading difficulty (Vellutino *et al.*, 2004), and even leading proponents of the theory

acknowledge that it cannot provide a full account (Snowling, 2008; Torgesen, 2007). Clearly, for some children considered to be dyslexic other mechanisms are responsible. Such differences and doubts render decisions about diagnosis and labelling of a dyslexic subgroup even more problematic. However, internationally there is some evidence that the rate of acquisition of reading skill (or the incidence rate for 'dyslexia') correlates with the nature of the orthography that readers confront, and the relationship that this has with phonological structures in the host language (see Caravolas, 2005; Seymour, 2005). As is readily evident, there is no universally accepted or consistently designed system of representing spoken language in visual symbols. Rather, there are almost as many orthographies as there are oral languages. The systems that there are have largely evolved in a haphazard and unsystematic way dependent to a greater or lesser extent on the whims and vagaries of writers and print setters (for example, in relation to written English, see Crystal, 2004). The task of becoming literate (see Byrne, 2005) is therefore complex, irregular and subservient to other linguistic and cognitive abilities. In short, we have not evolved any natural mechanism that deals specifically with the coding of written language (see also Wolf, 2008). Marvelling or scoffing at the failures of some people confronted with this task is, therefore, perhaps wholly wrong. The marvel is how some achieve success with such an enormous, varied and ill-designed task.

In a systematic review of dyslexia in adults, Rice and Brooks (2004, p.11) conclude that:

- 'There are many definitions of dyslexia but no consensus. Some definitions are purely descriptive while others embody causal theories. It appears that 'dyslexia' is not one thing but many, in so far as it serves a conceptual clearing-house for a number of reading skills deficits and difficulties, with a number of causes.
- There is no consensus either, as to whether dyslexia can be distinguished in practice from other possible causes of adults' literacy difficulties. Many 'signs of dyslexia' are no less characteristic of non-dyslexic people with reading skills deficits. In our present state of knowledge, it does not seem helpful for teachers to think of some literacy learners as 'dyslexics' and others as 'ordinary poor readers'.

QUESTION 2: TO WHAT EXTENT WOULD THE DYSLEXIC DIAGNOSIS GUIDE THE EDUCATOR IN DEVISING APPROPRIATE FORMS OF INTERVENTION?

Typically, we search for a diagnostic label because we believe that this will point towards the most efficacious forms of intervention. Following a medical model, one might assume that a clear diagnosis is necessary in order to know how best to intervene. Thus, behind the rationale for the Pamela Phelps case lay the assumption that if she had been diagnosed as

dyslexic a more efficacious intervention could have been put into place. This position would, of course, only be valid if there were clear evidence that differing approaches were suitable for dyslexic and non-dyslexic poor readers. However, this is patently not the case and there continues to be no clear evidence that there exists a particular teaching approach that is more suitable for a dyslexic subgroup than for other poor readers (Stanovich, 1991; Vellutino *et al.*, 2000). Indeed, it is generally considered that the highly structured, phonics-based approach that is widely advocated for dyslexics is equally appropriate for other poor readers (Rice and Brooks, 2004), as are other rather broader intervention programmes (Hatcher and Hulme, 1999; Shaywitz, Fletcher, Holahan and Shaywitz, 1996), although it seems that an intervention that is successful for most is not necessarily effective for all (Hatcher *et al.*, 2006a). In addition, it does not appear that the prognosis for identified dyslexics involved in reading intervention programmes is significantly different from the prognosis for other poor readers (Brooks, Burton, Cole and Szczerbinski, 2007).

In calling for specialist teaching of reading in the UK, the strengths of the British Dyslexia Association's 'Dyslexia Friendly Schools' initiative have been cited as illustrative of good practice (Johnson, 2004; Riddick, 2006). The key areas targeted in this initiative are the development of specialist teaching skills (with an emphasis upon structured, multisensory teaching), close partnership with parents, a resource bank of appropriate 'dyslexia-friendly' materials and a whole school policy for supporting dyslexic children. However, the notion of being 'dyslexia-friendly' is something of a red herring. What these schools are actually seeking to offer are more appropriate educational experiences for all children who struggle with literacy. This is a laudable aim, of course, but one that, in practice, should not be restricted to a dyslexic subgroup.

QUESTION 3: TO WHAT EXTENT SHOULD THE DYSLEXIC DIAGNOSIS RESULT IN THE DIFFERENTIAL ALLOCATION OF RESOURCES OR OTHER FORMS OF SPECIAL ARRANGEMENT?

For many, a diagnosis of dyslexia is seen as a principal means of gaining additional help or support for identified children. It would be naïve to argue that such a label does not put pressure on local authorities, schools and teachers both through formal SEN procedures (SENCO-Forum, 2005) and by placing more subtle pressures upon teachers (Elliott, 2005b). This may explain why it has been suggested that powerful lobby groups have resulted in the over-representation of dyslexic children within the SEN system (Daniels and Porter, 2007).

A more helpful conceptualisation of dyslexia might be one that referred to those individuals who proved resistant to prolonged and systematic reading intervention. Thus, rather than representing some underlying condition, its operationalisation is based upon response to intervention (see Norwich, *in press*) and would only be applied when it became clear that detailed assessment and intervention were proving insufficient.

The value of such a process of identification is obvious. We would have a clear understanding that the individual would continue to struggle with literacy for the foreseeable future and would be a priority for access to alternative means of communication. Thus, with this scenario, a classification of dyslexia would involve priority access to specialist resources. Already there are a variety of electronic aids that read text aloud and that transform speech into text. The availability of technology that may permit, for instance, instantaneous translation between speech and writing is surely within our grasp.

While recognising this imperative, from the perspective of a parent desperate to secure help for their struggling child, we need to question whether operating in this way serves to prop up a system that most would argue is inefficient and inequitable. It is inefficient because it involves the use of resources for diagnosis and classification that might be better, and earlier, spent upon intervention. It is inequitable because it suggests that other poor readers, without the dyslexia diagnosis, will, in comparison, have less access to resources and support. Such a position is surely morally untenable?

DYSLEXIA AS A CATCH-ALL TERM OF CONVENIENCE

One way to avoid such complexities is to use the term ‘dyslexia’ in a general way to describe almost all forms of reading decoding and spelling difficulty. For example, the British Psychological Society (1999) provides the following definition:

Dyslexia is evident when accurate and fluent word reading and/or spelling develops very incompletely or with great difficulty. This focuses on literacy learning at the ‘word’ level and implies that the problem is severe and persistent despite appropriate learning opportunities (p.64).

While such an all-embracing definition may be attractive both to those who are sceptical about the value of more finely tuned differentiations, and also to those with literacy difficulties who would welcome being given the label, its very broad inclusivity is problematic for educational purposes. Defining dyslexia in such a fashion means that the construct no longer helps us to differentiate between those with reading difficulties in any way that is helpful to those who are seeking specialist insights that can inform intervention.

This is not to deny varying (in)competence in literacy, as perhaps the British Psychological Society’s working definition of dyslexia acknowledges. Nor do we wish to suggest that an appreciable number of people do not experience considerable difficulty acquiring skills in literacy. As already noted above there is a substantial body of evidence about the cognitive abilities implicated in literacy or the failure to acquire it (see Grigorenko, 2001; Snowling and Hulme, 2005 for overviews). There is also evidence (Carroll and Iles, 2006; Maughan *et al.*, 2003; Willcutt and Pennington, 2000) of affective states associated with the literacy

difficulties that many may experience. However, we wish to argue that the distress that is experienced is at least in part a consequence of societal failure to accept responsibility for the (chaotic) creation of literacy and failure to redirect attention toward solutions not ‘cures’ (although see Norwich, in press, for discussion of the limitations of the social model of disability). The apparent ‘fact’ that dyslexia exists, is ‘diagnosed’ and is ‘treated’ ignores the artefactual qualities of literacy implicit in any proper consideration of the issues.

But despite the above considerations that, in all modesty, do not seem to us to be original or particularly remarkable, the notion of dyslexia seems to persist almost with a life of its own. Why?

One of the major risks in the continuing debate about dyslexia resides in the failure to acknowledge socio-cultural dimensions. In our view it is possible that dyslexia may be considered as at least partially a social construction. This is in fact relatively uncontentious. As Ferrari notes, ‘Psychological development itself cannot be understood as a uniquely individual thing involving only an individual’s brain and how that brain interacts with the world. Development depends crucially on the sociocultural context in which (normal and abnormal) children develop’ (Ferrari, 2002, p. 756). More specifically Pennington and Olson hold that ‘Dyslexia is an interesting example of the intersection between an evolved behaviour (language) and a cultural invention (literacy)’ (Pennington and Olson, 2005, p. 453).

Within socio-cultural perspectives the question of distinguishing ‘literate’ from ‘non-literate’ becomes a different issue. Cook-Gumpertz (2006), for instance, in exploring the relationship between literacy, education and social power suggests that definitions of ‘functional literacy’ are hugely problematic. Moreover, attempts at definition persist in subsuming within concepts of illiteracy negative associations with limited ability or social value.

Cook-Gumpertz also provides an important reminder that universal literacy is historically a recently formulated aspiration. Literacy (in Western societies at least) was previously possessed only by a powerful elite; an elite that gained or maintained power through literacy. As Cook-Gumpertz indicates: ‘The reversal of position, from seeing a dangerous radicalism inherent in acquiring literacy to the opposite view that the social and political danger was in having illiteracy in the population, began at this time [in the late 19th century]’ (p. 32). Thus the social rationale for maintaining a construct of literate/non-literate may be seen as subject to change according to societal priorities and anxieties. Amongst the educational and social consequences of the current positioning of illiteracy as ‘dangerous’ can be found those with implications for schools. In the UK, for instance, schools are judged on their performance. School performance is largely determined by children’s performance against measures that are either explicitly or implicitly dominated by competence in literacy. As Goody and Watt anticipated: ‘the literate tradition sets up a basic division that cannot exist in non-literate society: the division between the various shades of literacy and illiteracy. This conflict, of

course, is most dramatically focussed in the school, *the key institution of society*' (Goody and Watt, 1968, p. 59, emphasis added). Thus, in order to be seen as successful, schools may find it undesirable to have on roll children with inadequate levels of literacy. They may, therefore, wish to create (or perpetuate) a category of child whose literacy lies outside the school's realm of expertise. The dyslexic child thus not only has to deal with his or her individual perceptions of failure but also bear responsibility for the school's failure. As such s/he becomes disabled from full social and educational inclusion in lessons alongside her or his peers. The American typology of 'reading-disabled' also clearly identifies illiteracy as a disability. This process (of alienating an 'other') denies any acceptance of societal responsibility for causal agency. Here too we may, therefore, find both the social construction of dyslexia *per se* and its social construction as a disability (Brown, 1995; Corker and Shakespeare, 2002; Jones, 1996). We suggest that the key to the answer to the question 'why does the concept of dyslexia persist?' lies here. The concept addresses psycho-social needs. These needs are not founded on testable scientific concepts but on chimera that serve within power struggles and, in psycho-dynamic terms, the need for an 'other'.

Without those who are deemed 'unsuccessful', the successful lose power and position. Although public and political intent may be stated as a determination to 'eradicate illiteracy' (MacKay, 2007), there remains a paradoxical but self-serving need to maintain a group who remain 'illiterate'.

As discussed by Norwich (in press) the above considerations may prove challenging for inclusive interventions within educational domains—and, probably, elsewhere. We would suggest that the infinite regress that follows from attempts to define and isolate dyslexia does not lead directly to interventions that prevent failure occurring. There have been interventions that have shown significant power to overcome difficulties once failure has been identified but not labelled (e.g. Hatcher et al., 2006a, b). An alternative approach—of adjusting literacy learning task requirements in order to minimise task demands and hence risks of failure—has also shown some interesting results. Findings from this latter perspective (Deavers, Solity and Kerfoot, 2000; Seabrook, Brown and Solity, 2005; Solity *et al.*, 2000) suggest that becoming literate can be constructed as a mediated and inclusive activity compared to the traditional and reactive model in which the learner must struggle to deal with an unmediated and less predictably structured task.

CONCLUSION

In March 2008, widespread media publicity was given to findings from a study of 1,341 children in Years 3 and 7 in 20 schools across three different local authorities (Xtraordinarypeople, 2008). The research, undertaken under the auspices of a dyslexia lobby group, claimed that 55% of students who failed to reach the level expected on national tests

(SATS) were found to be at risk of dyslexia/Specific Learning Difficulties (SpLD) (although, in the report, SpLD is described as an umbrella term that also refers to dyspraxia, ADHD and dyscalculia). Unsurprisingly, media reports stressed the first of these two labels with a BBC News website headlining the claim 'Dyslexia link to school failures'.

It is salutary to examine how these figures were arrived at. 'At risk' children were seen as those who scored poorly in measures of reading or spelling (standard scores of 85 or lower) together with (a) problems of phonic decoding, phonological processing and/or verbal memory, or (b) 'other indicators of SpLD such as persistent problems of coordination, attention or visual-perceptual skills' (p. 5). In a telling example of the woolliness involved, the report adds that, 'The pupils' verbal and nonverbal ability was factored into this identification process although it should be noted that a conventional 'discrepancy approach' to identification of at-risk pupils was not explicitly applied' (ibid.). The report fails to explain how, or why, this 'factoring in' process was applied.

While the arbitrariness of the selection procedure would appear to be highly flawed (indeed, we wonder how many poor readers would not meet at least one of the above criteria), an equally misleading argument is put forward that the identified group of dyslexic children requires some form of specialised intervention. In actuality, the teaching approaches recommended are those applicable for all children who struggle to develop literacy skills. Interestingly, while much is made of the high proportion of children in the sample with working memory difficulties, there continues to be no specific educational intervention addressing this problem that is associated with literacy gains (Elliott et al., in prep.). Nevertheless, two months later, the Government announced a review of treatment programmes for dyslexic children with the Secretary of State for Schools, wanting this to provide, 'firm evidence as to the way forward, convince the sceptics dyslexia exists and tell us how best to get these children the help they deserve' (*The Guardian*, 7 May 2008).

While these recent moves are likely to have value in highlighting the need to identify and provide appropriate support to all children with literacy difficulties, we contend that the use of the term dyslexia in such announcements is scientifically flawed and is likely to confuse both teachers and parents. In actuality, it would appear that the true focus of the recent Government initiative is any child at risk of reading failure, not solely those in a given dyslexic subset. However, to take this broader notion and then simultaneously decry those who challenge the utility of the concept of dyslexia as a specific condition ('sceptics' do not deny that many children have great difficulties in acquiring appropriate reading skills and require additional help and support, of course) is to demonstrate a failure to grasp the key issues behind the debate.

We would urge that whilst the curiosity about the nature and causes of reading difficulties (or dyslexia) cannot and should not be curbed, as a scientific endeavour it is probably ultimately as tantalising and as forlorn as seeking the philosopher's stone. The concept is unbounded and unverifiable (Stanovich, 1994). Of course, if dyslexia is taken as a social

construct, we can argue that a given set of cognitive or behavioural features (e.g. given levels of IQ and reading scores, a working memory deficit as indicated by a particular centile level), constitutes dyslexia and then *ergo*, it exists. We are, however, currently unable to progress beyond a very long list of possibilities in order to agree upon a requisite set of essential features that would enable reliable and valid identification to be made. Even if that were achieved (and we suggest it is not achievable) we would still be left with the thorny issue as to whether there would be any meaningful clinical or educational implications that follow from such an assessment. Again, this appears unlikely in the short term.

Thus, in summary, we view dyslexia as an arbitrarily and largely socially defined construct. There appears to be no clear-cut scientific basis for differential diagnosis of dyslexia *versus* poor reader *versus* reader. At various times and for various reasons it has been a social convenience to label some people as dyslexic but consequences of the labelling include stigma, disenfranchisement and inequitable use of resources (perhaps this is most disadvantageous for poor readers *not* diagnosed as dyslexic). The social, cognitive and behavioural phenomena associated with the construct remain important and fascinating issues. Proper treatment is, however, hindered by the false dichotomy between dyslexia and non-dyslexia. Let's not ask, 'Does dyslexia exist?' Let's instead concentrate upon ensuring that all children with literacy difficulties are served.

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