

What is Dyslexia?

Dyslexia simply means difficulty with the *written* word. It is a descriptive, *not* a diagnostic term. Unfortunately, the medical-sounding label implies that it is a distinct and identifiable reading disorder with a known medical cause. As Prof. Bishop points out, 'medical-sounding terms are more successful memes than the descriptive terms because they convey a spurious sense of explanation, with foreign and medical-sounding labels lending some gravity to the situation...they are treated seriously and gain public recognition and research funding' (Bishop 2010)

For a considerable length of time, one particular definition of dyslexia, (*'IQ-achievement discrepancy' where reading age was considerably lower than IQ would predict*), was used as the basis for all diagnosis and research on the subject. It was eventually discredited: "(T)here is little evidence that the long-term development of poor readers who are IQ-achievement discrepant is substantially different to that of poor readers who are not IQ-achievement discrepant nor does IQ-achievement discrepancy reliably distinguish between those who are difficult to remediate and those who are more easily remediated. Consequently, IQ-achievement discrepancy is no longer the bedrock for identification of LD in the US (or of dyslexia in the UK, for that matter)" (Singleton p17)

The demise of the IQ-achievement discrepancy definition created difficulties for those working in the field of dyslexia. It was felt that another way to diagnose dyslexia was needed, one that didn't require an IQ test; the result was called 'Response To Intervention' (RTI). 'A good indication of the severity and persistence of dyslexic difficulties can be gained by examining how the individual responds or has responded to well founded intervention' (Rose 2009 p10) Unfortunately, this new descriptive diagnosis is as imprecise and as questionable as the many older ones and 'therein lies the rub': Without an internationally accepted "operational" definition of dyslexia which is the first step in scientific research, meaning that there must be a precise (infallible) measure of what it is you're going to study, genuine diagnosis and empirical research cannot take place. This means, of course, that ALL past (and present) research that used the IQ-achievement discrepancy definition to select 'dyslexic' subjects is null and void, as is research based on any of the other definitions see Rice/Brooks appendix 1.p133. 'When reading literature claiming that "dyslexics" exhibit this or that symptom, or behaviour, it obviously behoves us to ascertain how the sample of "dyslexics" was arrived at – how were they diagnosed. If it was by the discrepancy model of diagnosis, as is almost always the case, the findings are thereby rendered invalid and should, properly, be ignored. They seldom are. Indeed, such findings regularly march cheerfully on, underpinning and "validating" later work, in bibliography after bibliography. The "borders of pseudoscience" indeed' (Kerr p97) Meanwhile, many eminent figures working in the wider field of education continue to state that, at present, there is no scientifically accurate way to differentiate between those with a special reading disability, 'dyslexia', and ordinary, 'common garden' poor readers:

"The underlying difficulty appears to be the same, the way these children respond to treatment appears to be the same, there appears to be no justification whatsoever for going in and trying to carve out a special group of poor readers. This is what 15 years of research, all over the world has shown can't be justified on a scientific or empirical basis" (Prof. Stanovich in Mills. The Dyslexia Myth)

"Most people assume that dyslexia is a clear-cut syndrome with a known medical cause, and that affected individuals can be clearly differentiated from other poor readers whose problems are due to poor teaching or low intelligence. In fact, that is not the case." (Prof. Bishop 2010)

"Because there is no way to differentiate students with learning disabilities, the label is meaningless" (Prof. Cunningham see link below)

"(A)ttempts to distinguish between categories of 'dyslexia' and 'poor reader' or 'reading disabled' are scientifically unsupportable, arbitrary and thus potentially discriminatory" (Prof. Elliott/Dr. Gibbs).

"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'" (Dr. Rice / Prof. Brooks)

"They learned what they were taught, period. There are no dyslexic kids. I mean, that is just a myth" (Prof. Engelmann. Children-of-the-code interview)

There is no need to manufacture an innate, brain disorder or difference to explain the widespread difficulties English-speaking children have with learning to read and spell. The evidence-based explanation is clear and simple: "The cross-cultural comparisons reveal that **the source of English-speaking children's difficulties in learning to read and spell is the English spelling system and the way it is taught.** These comparisons provide irrefutable evidence that a biological theory of "dyslexia", a deficit presumed to be a property of the child is untenable, ruling out the popular "phonological-deficit theory" of dyslexia. For a biological theory to be accurate, dyslexia would have to occur at the same rate in all populations. Otherwise, some type of genetic abnormality would be specific to people who learn an *English* alphabet code and be absent in people who live in countries with a transparent alphabet, where poor readers are rare. A disorder entirely tied to a particular alphabetic writing system is patently absurd and has no scientific basis. English-speaking children have trouble learning to read and spell because of our complex spelling code and because of current teaching methods, not because of aberrant genes' (D.McGuinness ERI p3)

'(C)hildren with general language delays, weak auditory or verbal short-term memory, or other perceptual and cognitive deficits could have problems learning to read and spell. But these are language and memory problems, not “reading disorder” problems. These children are few and far between, constituting less than 5% of the population' (D. McGuinness RRF message-board)

The first study to show clearly that dyslexia is due to *'the English spelling system and the way it is taught'* was that done by Heinz Wimmer in Austria (1993). German is spoken in Austria. It has a transparent written code and is taught using synthetic phonics. Wimmer tested all the worst readers in Salzburg, sent to him by their teachers, and found that they scored 100% correct on reading accuracy and nearly as well in spelling. Their only difficulty was in reading speed. Next, Wimmer collaborated with an English researcher Goswami (1994). They compared normal readers in Salzburg (7 yr.-olds with 1 yr. of instruction) and London (9 yr.-olds with 45 yrs. of instruction) reading comparable material. The Austrian children read the material as fluently and accurately as the English 9yr olds and made half as many errors. A third study by the researchers Landerl, Wimmer and Frith (1997) compared Austrian 'dyslexic' children (slow readers) with English 'dyslexic' children (very inaccurate readers and spellers). The Austrian 'dyslexics' were not only far more accurate but also *read twice as fast* as the English dyslexics.

Researchers Geva and Siegel studied the word recognition skills of a large group of Canadian children from primarily English-speaking homes attending a bilingual English-Hebrew day school. Hebrew has a transparent orthography. Accuracy of decoding Hebrew in Grade 1 (79%) already matched the level achieved in English in Grade 5 (78%).

The empirical evidence suggests that dyslexia (slow and inaccurate reading and spelling) occurs in a significant percentage of English-speaking children when they need to learn what is an extremely opaque orthography without direct, discrete and comprehensive instruction in the English alphabet code. When correct teaching is absent, incomplete, muddled or delayed many children do, luckily (and amazingly), still discover the alphabetic code for themselves but those who don't or can't will, out of necessity, have to form their own strategies to access the code see [method 2](#) for a description of those strategies.

Dyslexia, due to poor teaching, occurs in all social classes and, as Tom Burkard of the Promethean Trust says, 'There would not be such a huge industry charging obscene amounts of cash to (supposedly) remedy reading failure if it were not just as common with middleclass kids as with others.' (Burkard. RRF messageboard 20/12/04) Ruth Miskin, early reading expert and past head-teacher, says, 'Parents be warned. We're not talking about poor kids here, from homes where televisions are always on. I've seen plenty of kids from affluent families,... pupils at private schools, the 4x4 parked in the drive. These children are often labelled dyslexic or SEN (with special educational needs). Not a bit of it: what they are is, to borrow an American acronym, ABT — ain't being taught (Miskin)

'So it is mainly the middle class children - whose parents believe government propaganda about improving schools, or who buy poor-quality private schooling in the sad belief that the writing of a cheque guarantees quality teaching - who get involved in the great 'dyslexia' fantasy. They know that something is wrong. The 'dyslexia' lobby persuades them that it is their children who are at fault. This helps relieve parents and schools of any responsibility for the problem. The children, too, are led to believe that they are in the grip of some force that is beyond their control. This is why so many people willingly cooperate in their own victim-hood.' (Hitchens. MailonSunday 04/06/07)

Early difficulties with reading as a result of poor, absent or delayed instruction lead *extremely quickly* to generalised cognitive, behavioural, and motivational problems, '...skill at spelling-to-sound mapping (must) be in place *early* in the child's development, because their absence can initiate a causal chain of escalating negative side effects ... extremely large differences in reading practice begin to emerge as early as the middle of the first-grade year'(Stanovich p 162)

The Dreaded Dyslexia

It's caused by a teaching disability, not a learning disability.

by Diane McGuinness

(Dr. McGuinness is a cognitive development psychologist and professor at the University of South Florida.)

“Dyslexia” is Greek for “poor with words” or “poor reading.” “He has dyslexia” sounds medical and scientific. “He has poor reading” doesn't have quite the same impact. Like many medical terms, “dyslexia” merely describes a state of affairs and has no diagnostic validity. “Strabismus” means that your eyes are not properly aligned. But the word “strabismus” doesn't explain *why* your eyes are misaligned.

Do dyslexics have brain damage? Twenty years of data from brainimaging studies and electroencephalographic (EEG) recordings have shown conclusively that people diagnosed dyslexic have no damage to any part of their brain. Studies using modern imaging techniques such as computerized tomography (CAT) and magnetic resonance imaging (MRI) search for anatomical differences between poor and normal readers. So far, nothing has been found. The only result that is even marginally consistent is a tendency for poor readers to have more symmetrical brains. But 35 percent of the population have symmetrical brains. Symmetry is not pathology.

There is an even more serious problem than trying to find dyslexia in the brain. A number of studies on very large populations of children show conclusively that the diagnosis of dyslexia or “learning disabilities” is invalid. This calls into question all research on dyslexia. The diagnosis for many years was based on the assumption that if a child had a serious reading problem but normal or abovenormal intelligence, the child must have a special type of reading disability called dyslexia. Children with low reading scores and low intelligence were supposed to read badly because they have low intelligence.

For many years, a discrepancy between IQ and reading ability has been used as the basis for identifying children with a “learning disability.” But beginning in 1992, a number of studies have challenged this assumption.

Jack Fletcher is one of the team leaders of the Connecticut Longitudinal Study which began in 1983. He and his colleagues reported on 199 poor readers, seven to nine years of age. They were divided into four groups on the basis of different statistical methods of computing a discrepancy between IQ and reading. A fifth group (controls) had no reading problems. All children were given a battery of nine tests. The discrepancy model did not hold up. Children with reading problems, regardless of IQ, all scored badly on one particular test which measures the *ability to hear individual phonemes in words*. Children with low IQs did worse on a memory test, but otherwise all poor readers scored normally on the remaining tests.

Fletcher was also a collaborator in a Canadian study with researchers at Windsor, Ontario. They tested 1,069 children referred to a clinic for reading problems. Children were between the ages of nine and 14 years. The children were divided into four groups based on different calculations of IQ/reading discrepancy scores, and were given a battery of ten tests by the Canadian psychologists. All children with poor reading scores, regardless of IQ, regardless of group, did badly on the same two tests. One test measured the ability to blend isolated phonemes into words and the other the ability to decode letters into phonemes. Once again the results were the same, and the conclusion was that there is no basis for any special category of reading disorder. Similar findings were reported by scientists Keith Stanovich and Linda Siegel at the Ontario Institute for Studies in Education.

Sally Shaywitz and others in the Connecticut Longitudinal Study followed children to see if the discrepancy diagnosis of dyslexia was constant from one grade to another. Twentyfive children were diagnosed dyslexic in first grade and 31 in grade 3, but only seven were classified as dyslexic in both grades. Of the 24 children classified as dyslexic at fifth grade, only 14 were also dyslexic in third grade.

Finally, a study on twins has been carried out by Bruce Pennington and his coworkers at the University of Denver. They tested 538 pairs of twins, dividing the children into four groups based on age, IQ and reading scores. They had the same results. All poor readers, regardless of group, IQ or age, had problems reading phonetically-spelled nonsense words and nothing else. The authors concluded that there is no evidence for any test that can identify groups of poor readers who do or do not have a discrepancy between IQ and reading scores.

These studies sound the death knell of “dyslexia” and “learning disabilities” as a category of specific reading retardation. The truth is simply that if a child scores badly on a reading test, he or she has a reading problem and needs to be taught to read. There is no evidence from any of the studies or any of the tests that most poor readers have anything wrong with them except the inability to read an alphabetic writing system, and this in turn is related to a difficulty in accessing the phonemic level of speech. In other words, children with reading problems have a hard time “ungluing sounds in words.”

But there is nothing wrong with their brains. Other studies show that phoneme awareness can be trained at any age — from 5 to 65 — in a relatively short period of time. This means that everyone can be taught to read.

(Adapted with permission from *Why Our Children Can't Read.*)

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Memorandum submitted by Diane McGuinness (LI 13)

Preface

I would like to take the name of this committee literally and assume that most members, perhaps all, understand and are committed to the scientific method. Unless we abide by this method, we can never solve the problem of reading failure in English speaking countries which has persisted for over 100 years. There is no place, no time, for armchair theories, false speculations, and bogus terms like "*dyslexia*" which explain nothing and only disguise our ignorance. Let us begin by exploring its real meaning and relevance. Then we can address what is really going on.

1. Dyslexia means "poor reader" in Greek. That is all it means. Bona fide scientific research over the past three decades shows that no reading test can distinguish a "garden variety poor reader" from someone "diagnosed dyslexic." A poor reader is a poor reader is a poor reader, and this is true at any age. The recent Rose report (2009) muddles this term, referring on the one hand to serious cognitive delays in language function, and on the other to the literal meaning above. There is considerable evidence against a special reading disorder due to a brain dysfunction, and absolutely none to support it. A writing system is not, and cannot be, a "property of the human brain." *It is an invention of the human mind.* And like similar inventions - musical notation, mathematic symbols, computer languages - *it has to be taught.* (Who would suggest we label people who struggle with reading musical notation as having "dysmusia," or as being unmusical?)

2. Some Simple Facts.

a. If reading difficulties occur because of a genetic disorder, **why is there no "dyslexia" in countries with a transparent alphabet code** (a one-to-one correspondence between a letter and the sound it represents) like *Finland, Sweden, Norway, Italy, Spain, Germany, Austria, Korea, etc.* In these countries, the term "dyslexia" either doesn't exist or means something else. In Austria, a "dyslexic" child reads and spells perfectly, but does so extremely slowly.

b. Over the past two decades many outstanding reading programmes have been created for teaching beginning readers and poor readers of all ages. The basis of these programmes are described in the Rose Review (2006). These programmes teach the English alphabet code (no sight words, no guessing). Children taught with these programmes at Reception are 1 to 2 years above reading and spelling norms. It is rare for a child to fail. There are programmes older poor readers of any age, who can be taught to read and spell in about 18-24 hours of one-to-one tutoring. **Whether or not they have been diagnosed "dyslexic" makes no difference. Where does the 'dyslexia' go, when these people learn to read?**

3. 'Every Child a Reader.' Here is an example of our ignorance and the failure to insist on proper scientific evidence in making critical decisions. This project was supported by the government, and funded by the tax payer with support from KPMG and Esmee Fairbairn. It resurrects the old, failed Reading Recovery programme that relies mainly on sight word memorization (see submission from Jennifer Chew for details). Several years ago, a letter was sent to members of the U.S. Congress with 31 signatures of the top researchers in the field of reading urging Congress to suspend support for RR because independent research showed the method had *no effect*. It is extremely costly to implement, re teacher training, tutoring time, and materials. Not only this, but RR "research" is notorious for misrepresenting the data. In a recent publication by the Institute of Education, the same problems appear. 1. Nearly half of the children from the 145 strong "RR-tutoring group" were dropped from the study at post-testing, while the control group remained intact. (Barely a mention of this, and no attempt to solve the problem this creates.) 2. The RR group received *individual tutoring*, the control group got *none*. One could go on. The published paper bears the hallmarks of a bona fide "scientific" journal, until a closer inspection reveals it is published by Reading Recovery. No chance for an impartial peer review process here.

4. What is a writing system?

a. Five thousand years ago scholars in Egypt and Sumer discovered that people can't learn a writing system which uses a separate symbol for every word. There are too many words (1 million words in the English language). To solve this problem, new symbols were designed to represent *sounds in words*, because there are far fewer sounds than words in every language. From this time forward, ALL writing systems were based on *units of speech below the level of the word*. (This is the only way they can work.) These are four units of speech used today in the world's writing systems. **These systems are never mixed**

1. symbols for syllables (syllabaries - China)

2. symbols for CV units (diphone systems - most non-European countries).

3. symbols for CC units only (consonantal alphabets - Hebrew, Arabic)

4. symbols for each consonant and vowel: (alphabets - invented by the Greeks in the 8th century B.C.)

b. **All codes are reversible by definition**, which means spelling and reading are mirror images of one another. They should never be taught separately as if they had nothing to do with each other (a common practice in our schools.)

c. A "transparent" writing system assigns a single symbol to one and only one sound in the language. Finland and Korea have the most transparent writing systems in the world. **This is why children in Finland start school at age 7 and are reading and spelling accurately by Xmas.** No further lessons are required. This is true in all countries with well-behaved writing systems like those listed above.

[n.b. A recent paper by the Dept. of Ed. at Cambridge, 600 pages long, uses this fact about Finland to argue that English children should NOT be taught to read until age 6, but should "play" instead! They actually believe the reason is "developmental," when learning is a function of the complexity of the writing system and how it is taught.]

5. Why English speaking children are at a disadvantage. The English writing system is one of the most opaque writing systems in the world. It has multiple spellings for the same sound, and multiple "decodings" of the same spellings. **This is the reason English speaking children have such difficulty learning to read and spell, and it is the only difficulty.** The reasons are historical. English is an amalgam of five languages introduced by foreign invaders who came ashore with their five different writing/spelling systems. For centuries, these languages and their spelling systems occupied different ecological niches. But as language barriers began to collapse and merge, spelling went haywire. Nobody could solve this problem until Samuel Johnson took it on in 1755. But Johnson was only able to standardize the spelling for sounds in **individual** words. **He failed totally to standardize the spellings for the 40+ sounds in our language.** This failing makes our writing system, not only unstable, but **context dependent**. It matters what word a spelling is "sitting in": 'theme' is not spelled 'theem' or 'theam.' *though it could be*. This problem is solved by programmes which highlight these features and common spelling patterns, and are written by authors who truly understand the code and its idiosyncrasies.

Learning Mythabilities

Because there is no way to differentiate students with learning disabilities, the label is meaningless.

By George K. Cunningham

The classification of students who are behind in reading into the categories of learning disabled and non-learning disabled is an anachronism. There are large numbers of students, primarily boys, who have reached grade 4 unable to read at anything close to grade level. Whether you call them learning disabled or poor readers changes nothing.

There are a number of different studies that have shown that there is no difference between students in these two categories in terms of their reading characteristics or in terms of the designation of the most effective remedial strategies. In fact, there is no reasonable way to differentiate between the two groups at all.

In the early 1960s, it was noticed that among students who were unable to learn to read in the early grades, there was a subgroup, made up primarily of boys, who displayed what were called neurological soft signs. That is, they were distractible, they tended to perseverate, they had difficulty with figure ground distinctions, and/or they often failed to correctly identify gestalts.

The children in this group were labeled 'minimally brain damaged,' or 'possessed of a cerebral dysfunction,' or another of a host of names — until the term learning disability stuck. Other students who had reading problems but who didn't display the neurological soft signs were presumed to have undetected minimal brain damage.

A whole industry of treatments that addressed the brain damage and treated that symptom prior to reading remediation were adopted. At the time, one seeming prerequisite for distinction in this field was to have an odd name, and Newell Kephart and Helmer Myklebust became leaders in this field. They had students walking balance beams; writing on chalk-boards with both arms making large letters; and so on.

Then, Samuel Kirk and his wife developed the Illinois Test of Psycho-linguistic Abilities (ITPA) to assess learning disabilities from a cognitive psychology model focusing on different input modalities such as visual, aural, kinesthetic, integration, and output modalities. Specialists in the field gave up on this test when it was recognized that the test seldom yielded useful results.

At this point, the neurological approach was pretty much abandoned. First of all, there was disenchantment with what was, after all, a purely medical model. More important, none of the neurological approaches in fact worked. Rather, all students seemed to benefit most from a conventional reading remediation approach that focused on systematic phonics.

For a while, educators tried to maintain the fiction that learning disabilities had something to do with discrepancies between ability and achievement. This was a convenient policy because it allowed them to manipulate the size of the gap in order to control the size of the classes.

There is, however, no evidence that a gap between achievement and cognitive ability has any special meaning when it comes to deciding how to remediate reading difficulties. Variability in test performance and discrepancies in test performance are typical of all students. If you administer enough tests, almost all students will display discrepancies large enough to get them labeled.

Despite the fact that there is no empirical way to distinguish between learning disabled and non-learning disabled students, we now have a mandated, extremely-expensive process of making distinctions among poor readers.

In the past, there was a sort of class distinction between the two groups. A child with a learning disability, by definition, was a child whose inability to read was unexpected. He (and it usually was a he) had educated parents who provided a middle-class home. If the child couldn't read, there had to be something specific malfunctioning in his brain, although of course no one knew what the problem was.

A child with poor or uneducated parents, on the other hand, could be expected to do poorly in school. Ergo, such a child did not have a learning disability.

Today, this class distinction has diminished, mainly because nowadays almost any child who is doing poorly in school is deemed to be learning disabled. While it is gratifying that low-income students are no longer being discriminated against, it does raise the question as to whether the new policy is helping them.

The main impact is that there are more services available to those given a 'special education' label. There is no way of telling, however, whether or not these services are valuable.

Dr. John Marks of England's Centre for Policy Studies reports that the number of children with 'special educational needs' in that country has nearly doubled in the last four years. There are now about one and a half million students in this category.

Dr. Marks' influential paper "What are Special Education Needs?" points out that although one third of the English education budget is being spent on these children, no one knows what the criteria are for classifying students, how the money is being spent, or whether the special arrangements and funding are having any impact on the students' learning.

The author suggests that the root cause of the huge increase in students with special needs may be found in the retreat from traditional teaching practices.

In light of the fact that, despite many years of searching, researchers have been unable to isolate any indicators of learning disabilities, then perhaps it is time educators stopped wasting their time trying to categorize poor readers and started spending their time teaching them to read instead.

(Dr. Cunningham is professor of psychology at the University of Louisville, Kentucky.)

Dyslexia or Dysteachia?

Reading problems are rarely the result of a biological abnormality.

By Louise Spear-Swerling and Robert J. Sternberg

Many issues in the field of reading disability (RD) are hotly disputed — and not the least of these is the extent to which RD actually exists.

Many educators, as well as the general public, tend to think of RD— especially its medical-sounding equivalent, dyslexia — as “diseases” that can be objectively diagnosed. According to this view, RD is analogous to an illness such as measles or rheumatoid arthritis. It resides within the individual, a person either has it or does not have it, and differential diagnosis can determine the presence or absence of the disease as well as suggest a treatment.

In the view of most researchers, however, RD is not an all-or-none phenomenon. In the view of these individuals, such medical disorders as obesity or hypertension provide better analogies to RD than do all-or-none illnesses like measles. Just as hypertension exists on a continuum with normal blood pressure and can vary from mild to severe, RD exists on a continuum with normal reading and can vary greatly in severity.

The fact that a disorder exists on a continuum rather than as a discrete entity, such that the borderline between disordered and normal functioning is somewhat arbitrary, does not necessarily imply that the disorder itself is trivial. Hypertension, for example, clearly puts one at risk for stroke and heart disease.

However, analogies involving medical conditions, whether to hypertension, measles, or some other disorder, fail to capture some crucial aspects of RD diagnosis. Identifying RD is not really like diagnosing a medical ailment, in part because RD identification is not an objective process involving reliable measurements.

For example, in the case of hypertension, although physicians might disagree about whether borderline hypertension should be treated, generally they would not disagree about what constitutes borderline hypertension. Nor would there typically be a need to question the reliability or validity of blood pressure readings.

For schoolchildren diagnosed with RD, the situation is far different. Guidelines used for identifying children with RD are vague and may be interpreted quite differently from jurisdiction to jurisdiction. A child who is identified as having a RD in one area might not qualify for services under the regulations of a different area; a child labeled RD in one town might not be considered RD in a neighbouring town, achieving a dramatic “cure” just by moving!

Identification may further depend on the specific tests used which, like regulations and guidelines, can vary from place to place. To complicate the situation even more, IQ and achievement tests lack the reliability or validity of many measurements employed by physicians, such as weight or blood pressure readings.

Furthermore, special-education referral and placement tend to be determined, in great part, by factors that may have little to do with the child’s intrinsic abilities or disabilities. These factors include gender, race, and classroom behaviour, and are particularly important in the case of mild handicapping conditions such as emotional disturbance.

Thus, a youngster who is a behaviour problem in the classroom and also has reading difficulties, is more likely to be referred for special help than a youngster with an equally serious reading difficulty who is quiet and compliant.

Moreover, although hypertensive patients can expect to derive clear benefits from treatment, the overall treatment benefits for youngsters with RD — if *treatment* is defined as

special-education placement — are much less clear. Indeed, there is a depressing degree of consensus among researchers that special education and placement have often been ineffective not only for students with learning disabilities but for other kinds of students as well.

Perhaps the most fundamental weakness in analogies between medical ailments and RD involves the notion of an intrinsic biological abnormality as the cause of the disorder.

For example, although in most cases the exact etiology of hypertension is unknown, this phenomenon is one that can be described in biological terms, with reference to specific biological mechanisms that are consistent across individuals. Some cases of hypertension, for example, have a known biological cause, such as kidney disease.

The same cannot be said for the majority of children who are labeled as having RD, in spite of the long-standing assumption that the difficulties of children with RD are biologically caused. Some children with RD may indeed have problems stemming from an intrinsic biological disorder, but these children are clearly a minority of the children actually *labeled* as disabled readers.

To say that the learning-disabilities field has been overzealous in seeking biological explanations for children's learning problems is putting it mildly. The pendulum can stand a few good pushes away from the extreme of biological-deficit views.

(Adapted with permission from Off Track: When Poor Readers Become "Learning Disabled". Dr. Spear-Swerling is professor of special education at Southern Connecticut State University. Dr. Sternberg is professor of psychology and education at Yale University.)



The National Right to Read Foundation

When A Child Is Labeled Dyslexic

by **Dr. Patrick Groff**

NRRF Board Member & Senior Advisor

Dr. Patrick Groff, Professor of Education Emeritus San Diego State University, has published over 325 books, monographs, and journal articles and is a nationally known expert in the field of reading instruction.

It is an unfortunate, yet easily demonstrated fact that public school officials often are not eager to be held accountable for instances of educational malpractice that they commit. A current prime example of this evasion of responsibility by educators is the reading instruction crisis in California.

For the past decade, California teachers have been indoctrinated by their state department of education, professors of education and inservice training sessions into an uncritical acceptance of the "Whole Language" (WL) approach to reading instruction. Over this time, WL instruction became more popular in California than in any other state. As a consequence, however, California students became the least capable readers in the nation.

The California legislature recently took this deplorable situation in hand, and passed laws that prohibit conduct of the worse excesses of WL teaching. However, there never has been any public apology from the California Department of Education, the state superintendents of public instruction, and the others who created the reading instruction crisis, for their role in denying millions of children full opportunity to learn to read.

In this regard, when school children fail to learn to read it often is charged by school officials that their nonsuccess is caused by a defect in the student, and/or his/her parents. A particularly insidious example of this attempt by educators to transfer responsibility for their malpractice away from themselves and onto children, is the custom of labeling children who fail to learn to read properly as *dyslexic*.

A child with dyslexia, it is commonly held, has personal problems that prevent the school from teaching him/her to read. In WL classes, for instance, a child's reading disability thus is attributed to his/her innate or learned shortcomings, and never to the fact that WL consistently has been proved experimentally to be an inferior instructional approach.

There have been several strong protests of this negative attitude of schools toward accepting responsibility for creating students' reading problems. The schools should not be allowed to escape having to assume liability for their failures to teach children to read by blaming their student victims, it is reasoned. A notable book to this effect was that by Gerald Coles, *The Learning Mystique* (Pantheon, 1987).

Another remarkable text to this effect of late is that by professor of special education Louise Spear-Swerling (Southern Connecticut State) and psychology professor Robert Sternberg (Yale), *Off Track: When Poor Readers Become "Learning Disabled"* (Westview, 1996). For parents whose children have been classified by the schools as dyslexic, this book is required reading.

The text compellingly documents the fact that dyslexia is not a medical ailment. There is little or no basis for claims that youngsters who are labeled dyslexic have an intrinsic biological disorder, e.g., neurological dysfunction. There are no reliable, precise measurements of dyslexia, as there are for high blood pressure, for example.

Moreover, definitions of dyslexia commonly either are so vague or so disparate that they may be interpreted quite differently by those who consult them. What supposedly is dyslexia will even vary from state to state, or school district to school district. As *Off Track* notes, "a child may achieve a dramatic 'cure' for RD [dyslexia] just by moving!"

Then, the recommended treatment of dyslexic children turns out to be the kind of teaching all children require to best learn to read. All beginning readers need direct and systematic teaching that develops their conscious awareness of the speech sounds in spoken words (their phonemic or phonological awareness), and how letters are distinctive one from another. They need to be taught in an explicit fashion how the alphabet represents speech sounds (phonics information), and how to apply this knowledge to decode written words (to convert their letters into speech sounds).

All novice readers also need much practice applying their newly gained phonics skills with decodable words in stories and expository texts. A decodable word is one a child has been prepared ahead of time to sound out (decode) through phonics teaching. To comprehend these texts well, students' vocabulary knowledge, awareness of the way written materials are organized, and what to do when they cannot comprehend when reading, also must be expanded.

Those who diagnose children as having dyslexia try to defend themselves by saying that they have revealed the primary cause of the child's reading malady. However, the "exclusionary" criteria applied in this regard are defined too imprecisely to be reliable. For example, it is said a child only has dyslexia if s/he is two grades behind in reading. Seldom, if ever, however, is it ascertained whether the supposed dyslexic child has been provided appropriate reading instruction. Moreover, two years behind in grade three for students is quite a different matter than for students in grade nine.

It further is claimed that diagnoses of dyslexia rule out children who, among other characteristics, have emotional problems, are culturally or socioeconomically disadvantaged, are mentally retarded or are neglected by their parents. However, the difficulty of obtaining precise and valid statistics on these factors is readily apparent. And, in the practice of labeling children as dyslexic they frequently are ignored. So, it often turns out that boys, emotionally maladjusted children, and those from low-income families are declared to be dyslexic far more often than are girls, well-adjusted children, and those from affluent families.

Saturday, 18 December 2010

What's in a name?



In a recent [blog post in the Guardian](#), Maxine Frances Roper discussed how her dyspraxia made it hard for her to get a job. She had major problems with maths and poor physical co-ordination and was concerned that employers were reluctant to make accommodations for these. The comments that followed the blog fell mostly in one of two categories: a) people who described their own (or their child's) similar experiences; b) people who thought of dyspraxia as an invented disorder with no validity.

Although the article was about dyspraxia, it could equally well have been about developmental dyslexia, dyscalculia or dysphasia. These neurological labels are applied to children whose development is uneven, with selective deficits in the domains of literacy, mathematical skills, and oral language development respectively. They are often described as neurodevelopmental disorders, a category which can be extended to encompass attention deficit hyperactivity disorder (ADHD), and autistic disorder. Unlike conditions such as Down syndrome or Fragile X syndrome, these are all behaviourally defined conditions that can seldom be pinned down to a single cause. They are subject to frequent challenges as to their validity. ADHD, for instance, is sometimes described as a [medical label for naughty children](#), and dyslexia as a [middle-class excuse for a child's stupidity](#). Autism is a particularly interesting case,

where the challenges are most commonly made by individuals with autism themselves, who argue they are [different rather than disordered](#).

So, what does the science say? Are these valid disorders? I shall argue that these medical-sounding labels are in many respects misleading, but they nevertheless have served a purpose because they get developmental difficulties taken seriously. I'll then discuss alternatives to medical labels and end with suggestions for a way forward.

Disadvantages of medical labels

1. Medical labels don't correspond to syndromes

Parents often have a sense of relief at being told their child is dyslexic, as they feel it provides an explanation for the reading difficulties. Most people assume that dyslexia is a clearcut syndrome with a known medical cause, and that affected individuals can be clearly differentiated from other poor readers whose problems are due to poor teaching or low intelligence.

In fact, that is not the case. Dyslexia, and the other conditions listed above, are all diagnosed on the basis of behavioural rather than neurological criteria. A typical definition of developmental dyslexia specifies that there is a mismatch between reading ability and other aspects of cognitive development, which can't be explained by any physical cause (e.g. bad eyesight) or poor teaching. It follows that if you have a diagnosis of dyslexia, this is not an explanation for poor reading; rather it is a way of stating in summary form that your reading difficulties have *no* obvious explanation.

But medicine progresses by first recognising clusters of symptoms and then identifying underlying causes for individuals with common patterns of deficits. So even if we don't yet understand what the causes are, could there be value in singling out individuals who meet criteria for dyslexia, and distinguishing them from other poor readers? To date, this approach has not been very effective. Forty years ago, an epidemiological study was conducted on the Isle of Wight: children were screened on an extensive battery of psychological and neurological measures. The researchers were particularly interested in whether poor readers who had a large discrepancy between IQ and reading ability had a distinctive clinical profile. Overall, there was no support for dyslexia as a distinct syndrome, and in 1976, [Bill Yule concluded](#): "The era of applying the label 'dyslexic' is rapidly drawing to a close. The label has served its function in drawing attention to children who have great difficulty in mastering the arts of reading, writing and spelling, but its continued use invokes emotions which often prevent rational discussion and scientific investigation".(p 166). Subsequent research has focused on specifying what it is about reading that is so difficult for children who struggle with literacy, and it's been shown that for most of them, [a stumbling block is in the process of breaking words into sounds, so-called phonological awareness](#). However, [poor phonological awareness is seen in poor readers of low IQ](#) as well as in those with a mismatch between IQ and reading skill.

2. Medical labels don't identify conditions with distinct causes

What about if we look at underlying causes? It's an exciting period for research as new methods make it possible to study the neurological and genetic bases of these conditions. Many researchers in this field anticipated that once we could look at brain structure using magnetic resonance imaging, we would be able to identify 'neural signatures' for the different neurodevelopmental disorders. Despite frequent over-hyped reports of findings of 'a brain scan to diagnose autism' and so on, [the reality is complicated](#).

I'm not attacking researchers who look for brain correlates of these conditions: we know far more now than we did 20 years ago about how typical and atypical brains develop, and basic neuroscience may help us understand the underlying processes involved, which in turn could lead to better diagnosis and intervention. But before concluding that a brain scan can be a feasible diagnostic test, we need studies that go beyond showing that an impaired group differs from an unimpaired group. In a recent review of pediatric neuroimaging and neurodevelopmental disorders, [Giedd and Rapoport](#) concluded: "The high variability and *substantial overlap of most measures for most groups* being compared has profound implications for the diagnostic utility of psychiatric neuroimaging" (p. 731) (my italics)

Similar arguments apply in the domain of genetics. If you are interested in the details, I have [a blog](#) explaining in more detail, but in brief, there are very few instances where a single genetic mutation can explain dyslexia, ADHD, autism and the rest. Genes play a role, and often an important one, in determining who is at risk for disorder, but it seems increasingly likely that the risk is determined by many genes acting together, each of which has a small effect in nudging the risk up or down. Furthermore, the effect of a given gene will depend on environmental factors, and the same gene may be implicated in more than one disorder. What this means is that research showing genetic influences on neurodevelopmental disorders does not translate into nice simple diagnostic genetic tests.

3. No clear boundaries between individuals with different diagnostic labels

To most people, medical labels imply distinct disorders with clear boundaries, but in practice, many individuals have multiple difficulties. Maxine Frances Roper's blogpost on dyspraxia illustrates this well: dyspraxia affects motor co-ordination, yet she described major problems with maths, which would indicate dyscalculia. Some of her commentators described cases where a diagnosis of dyspraxia was accompanied by a diagnosis of Asperger syndrome, a subtype of autistic disorder. In a [textbook chapter](#) on neurodevelopmental disorders, Michael Rutter and I argued that pure disorders, where just one domain of functioning is affected, are the exception rather than the rule. This is problematic for a diagnostic system that has distinct categories, because people will end up with multiple diagnoses. Even worse, the diagnosis may depend on which professional they see. I know of cases where the same child has been diagnosed as having dyslexia, dyspraxia, ADHD, and "autistic spectrum disorder" (a milder form of autism), depending on whether their child is seen by a psychologist, an occupational therapist, a paediatrician or a child psychiatrist.

4. No clearcut distinction between normality and abnormality

There has been much debate as to whether the causes of severe difficulties are different from causes of normal variation. The jury is still out, but we can say that if there are qualitative differences between children with these neurodevelopmental disorders and typically developing children, we have yet to find them. Twenty years ago, many of us expected that we might find single genes that caused SLI or autism, for instance, but [although this sometimes occurs, it is quite exceptional](#). As noted above, we are usually instead dealing with complex causation from a mixture of multiple genetic and environmental causes. [Robert Plomin and colleagues](#) have argued, on the basis of such evidence, that 'the abnormal is normal' and that there are no disorders.

Consequences of abandoning medical labels

Many people worry that if we say that a label like dyslexia is invalid, then we are denying that their child has real difficulties. This was brought home to me vividly when I was an editor of *Journal of Child Psychology and Psychiatry*. Keith Stanovich wrote [a short piece for the journal](#) putting forward arguments to the effect that there were no qualitative differences between poor readers of average or below average IQ, and therefore the construct of 'dyslexia' was invalid. This attracted a barrage of criticism from people who wrote in to complain that dyslexia was real, they worked with dyslexic children, and it was disgraceful for anyone to suggest that these children's difficulties were fictional. Of course, that was not what Stanovich had said. Indeed, he was very explicit: "Whether or not there is such a thing as 'dyslexia', there most certainly are children who read markedly below their peers on appropriately comprehensive and standardized tests. In this most prosaic sense, poor readers obviously exist." (p. 580). He was questioning whether we should distinguish dyslexic children from other poor readers, but not denying that there are children for whom reading is a major struggle. Exactly the same cycle of events followed a Channel 4 TV documentary, the [Dyslexia Myth](#), which raised similar questions about the validity of singling out one subset of poor readers, the dyslexics, and giving them extra help and attention, when other poor readers, with very similar problems but lower IQs, were ignored. A huge amount of debate was generated, some of which featured in [the Psychologist](#). Here again, those who had tried to make this case were attacked vehemently by people who thought they were denying the reality of children's reading difficulties.

Among those taking part in such debates are affected adults, many of whom will say "People said I was stupid, but in reality I had undiagnosed dyslexia". This is illuminating, as it stresses how the label has a big effect on people's self-esteem. It seems that a label such as dyslexia is not viewed by most people as just a redescription of a person's problems. It is seen as making them more real, emphasises that affected people are not unintelligent, and leads the condition to be taken more seriously than if we just say they have reading difficulties.

Should we abandon medical labels?

So what would the consequences be if we rejected medical labels? Here, it is fascinating to chart what has happened for different conditions, because different solutions have been adopted and we can compare and contrast the impact this has had. Let's start with dyslexia. On the basis of the Isle of Wight study, Bill Yule and colleagues argued that we should abandon the term 'developmental dyslexia' and use instead the less loaded and more descriptive term 'specific reading retardation'. Because of the negative connotations of 'retardation' their proposal did not take off, but the term 'specific reading disability' was adopted in some quarters. But, actually, neither term has really caught on. When I did [a bibliometric survey](#) of studies on neurodevelopmental disorders, I tried to include all possible diagnostic labels as search terms. I've just looked the frequency with which different terms were used to describe studies on developmental reading difficulties. Dyslexia won by a long margin, with over 97% of articles using this term.

Quite the opposite happened, though, with 'developmental dysphasia', which was used in the 1960s to refer to difficulties in

producing and understanding spoken language in a child of otherwise normal ability. This term was already going out of fashion in the UK and the USA in the 1970s, when I was doing my doctoral studies, and in my thesis I used ‘specific developmental language disorder’. Subsequently, ‘specific language impairment’ (SLI) became popular in the US research literature, but there is current concern that it implies that language is the only area of difficulty, when children often have additional problems. Among practitioners, there is even less agreement, largely because of an explicit rejection of a ‘medical model’ by the profession of speech and language therapy (speech-language pathology in the US and Australia). So instead of diagnostic labels practitioners use a variety of descriptive terminology, including ‘language difficulties’, ‘communication problems’, and, most recently in the UK ‘[speech, language and communication needs](#)’ (SLCN). [If you’ve never heard of any of these and want to see how they affect children’s lives, see <http://www.afasicengland.org.uk>].

There do seem to be important negative consequences, however. As [Gina Conti-Ramsden has argued](#), specific language impairment (or whatever else you want to call it) is a Cinderella subject. The [amount of research funding directed to it is well below what you’d expect](#), given its frequency and severity, and it would seem that most members of the public have no idea what it is. Furthermore, if you say a child has ‘developmental dysphasia’, that sounds more serious and real than if you say they have ‘specific language impairment’. And to say they have language ‘difficulties’ or ‘needs’ implies to many people that those difficulties are fairly trivial. Interestingly, there also seems to be an implicit assumption that, if you don’t have a medical label, then biological factors are unimportant, and you are dealing with problems with purely social origins, such as poor parenting or teaching.

[An article by Alan Kamhi](#) had a novel take on this issue. He argued that a good label had to have the properties of a meme. The concept of a meme was introduced by Richard Dawkins in the *Selfish Gene*, and subsequently developed by Susan Blackmore in her book *The Meme Machine*. A meme is an element of culture that is transmitted from person to person, and a successful meme has to be easy to understand, remember and communicate to others. Importantly, it does not necessarily have to be accurate or useful. Kamhi asked “Why is it more desirable to have dyslexia than to have a reading disability? Why does no one other than speech-language pathologists and related professionals seem to know what a language disorder is? Why is Asperger’s syndrome, a relatively new disorder, already familiar to many people?” (p. 105). Kamhi’s answer is that terms with ‘language’ in them are problematic because everyone thinks they know what language is, but their interpretations differ from those of the professionals. I think there is some truth in this, but there is more to it than that. In general, I’d argue, the medical-sounding terms are more successful memes than the descriptive terms because they convey a spurious sense of explanation, with foreign and medical-sounding labels lending some gravity to the situation.

What to do?

We are stuck between the proverbial rock and hard place. It seems that if we stick with medical-sounding labels for neurodevelopmental disorders, they are treated seriously and gain public recognition and research funding. Furthermore, they seem to be generally preferred by those who are affected by these conditions. However, we know these labels are misleading in implying that we are dealing with clearcut syndromes with a single known cause.

So here’s a proposal that attempts to steer a course through this morass. We should use the term ‘neurodevelopmental disability’ as a generic term, and then add a descriptor to indicate the areas of major difficulty. Let me explain why each part of the term is useful. “Neurodevelopmental” indicates that the child’s difficulties have a constitutional basis. This is not the same as saying they can’t be changed, but it does move us away from the idea that these are some kind of social constructs with no biological basis. The evidence for a biological contributory causes is considerable for those conditions where there have been significant neurological and genetic investigations: dyslexia, SLI, autism and ADHD.

I suggest ‘disability’ rather than ‘disorder’ in the hope this may be more acceptable to those who dislike dividing humanity into the disordered and normal. Disability has a specific meaning in the [World Health Organization classification](#), which focuses on the functional consequences of an impairment for everyday life. People who are the focus of our interest are having difficulties functioning at home, work or school, and so ‘disability’ seems a reasonable term to use.

It follows from what I’ve said above, that the boundary between disability and no disability is bound to be fuzzy: most problems fall on a scale of severity, and where you put the cutoff is arbitrary. But in this regard, neurodevelopmental disability is no different from many medical conditions. For instance, if we take a condition such as high blood pressure: there are some people whose blood pressure is so high that it is causing them major symptoms, and everyone would agree they have a disease. But other people may have elevated blood pressure and doctors will be concerned that this is putting health at risk, but where you actually draw the line and decide that treatment is needed is a difficult judgement, and may depend on presence of other risk factors. It’s common to define conditions such as dyslexia or SLI in terms of statistical cutoffs: the child is identified as having the condition if a score on a reading or language test is in the bottom 16% for their age. This is essentially arbitrary, but it is at least an objective and measurable criterion. However, test scores are just one component of diagnosis: a key factor is whether or not the individual is having difficulty in coping at home, work or school.

‘Neurodevelopmental disability’ alone could be used to indicate that the person has real difficulties that merit attention and support, but it lumps together a wide range of difficulties. That is no bad thing, however, given that many individuals have problems in several domains. The term would actively discourage the compartmentalised view of these different conditions, which leads to an unsatisfactory situation where, for instance, researchers in the US have difficulty doing research on the relationship between reading and language disabilities because these are seen as falling under the remit of different funding streams (NICHD and NIDCD respectively), or where a researcher who is studying language difficulties in autism will have much greater chance of obtaining funding (from NIMH) than one who is studying language difficulties in non-autistic children (which are far more common).

Having defined our generic category, we need to add descriptors that specify weaknesses and strengths. Identification of areas of weakness is crucial both for ensuring access to appropriate services, and to make it possible to do research on individuals with common characteristics. Table 1 shows how traditional medical categories would map on to this system, with a downward arrow denoting a problem area, and = denoting no impairment. But this is just to illustrate how the system corresponds to what we already have: my radical proposal is that we could do away with the labels in the top row.

	Dyslexia	Dyscalculia	Dyspraxia	Dysphasia	ADHD	Autism
Reading	↓					
Maths		↓				
Motor skills			↓			
Oral language				↓		
Attention					↓	
Hyperactivity					↓	
Communication						↓
Social interaction						↓
Behavioural repertoire						↓
General intelligence	=	=	=	=	=	=

Table 1: Traditional categories (top row) vs new system

A major advantage of this approach is that it would not force us to slot a person into one diagnostic category; rather it will encourage us to consider the whole gamut of developmental difficulties and document which apply in a given case. We know that many people with reading difficulties also have impairments in maths, oral language and/or attention: rather than giving the person a dyslexia label, which focuses on the reading difficulties, the full range of problem areas could be listed. Intelligence does not feature in the diagnostic definition of autism, yet it makes a big difference to a person’s functioning if intelligence is in the normal range, or above average. Further some people with autism have major problems with literacy, motor skills or attention, others do not. This framework would allow us to specify areas of weakness explicitly, rather than implying that everyone with a common diagnostic label is the same. Further, it would make it easier to document change in functioning over time, as different areas of difficulty emerge or resolve with age.

In addition, a key feature of my proposed approach would be that assessment should also aim to discover any areas that parents or children themselves identify as areas of strength (up arrows), as fostering these can be as important as attempting to remediate areas of difficulty. If we take Maxine Frances Roper as an example, she evidently has good language and intelligence, so her profile would indicate this, together with weaknesses in maths and motor skills.

In the past, the only area of strength that anyone seemed interested in was IQ test performance. Although this can be an important predictor of outcome, it is not all that matters, and to my mind should be treated just like the other domains of functioning: i.e., we note whether it is a weakness or strength, but do not rely on it to determine whether a child with a difficulty gains access to services.

When we consider people’s strengths, these may not be in cognitive or academic skills. Consider, for example, [Temple Grandin](#). She is a woman with autism who has become a highly respected consultant in animal husbandry because of her unusual ability to put herself in the mind of the animals she works with. Obviously, not every person will have an amazing talent, but most will have some activities that they enjoy and can succeed in. We should try and find out what these are, and ensure they are fostered.

Will it happen?

Although I see this approach as logical and able to overcome many of the problems associated with our current diagnostic systems, I’d be frankly amazed if it were adopted.

For a start, it is complex and has resource implications. Few practitioners or researchers would have the time to do a comprehensive assessment of all the areas of functioning shown in Table 1. Nevertheless, many people would complain that this

list is not long enough! What about memory, speech, spelling, executive function, or visuospatial skills, which are currently not represented but are studied by those interested in specific learning disabilities? The potential list of strengths is even more open-ended, and could encompass areas such as sports, music, craft and cookery activities, drama, ability to work with animals, mechanical aptitude and so on. I'd suggest, though, that the approach would be tractable if we think about this as a two-stage procedure. Initial screening would rely on parent and/or teacher and/or self report to identify areas of concern. Suitable well-validated screening instruments are already available in the domains of language, attention, and social impairment, and this approach could be extended. Areas identified as specific weaknesses could then be the focus of more detailed assessment by a relevant professional.

The main reason I doubt my system would work is that too many people are attached to the existing labels. I'm sure many will feel that terms such as autism, ADHD, and dyslexia have served us well and there's no need to abandon them. Professional groups may indeed be threatened by the idea of removing barriers between different developmental disorders. And could we lose more than we gain by ditching terminology that has served us well, at least for some disorders?

At present, the term 'special educational needs' is used too widely. Around half the schools and early years provision visited used low attainment and relatively slow progress as their principal indicators of a special educational need. In nearly a fifth of these cases, there was very little further assessment. Inspectors saw schools that identified pupils as having special educational needs when, in fact, their needs were no different from those of most other pupils. They were underachieving but this was sometimes simply because the school's mainstream teaching provision was not good enough, and expectations of the pupils were too low.⁵ A conclusion that may be drawn from this is that some pupils are being wrongly identified as having special educational needs and that relatively expensive additional provision is being used to make up for poor day-to-day teaching and pastoral support.

Michael Rice with Greg Brooks

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