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Discovering dyslexia, theory and practice: a personal history

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Abstract

This article celebrates the synergy between two research groups, in Sheffield and Macerata who have identified the importance of motor skills in remediating dyslexia. This led to a series of summer schools in Macerata where Angela Fawcett presented her research to the trainee teachers to broaden their understanding of dyslexia. The article presented here was based on an interview between Eleanora and Angela in 2022 to address some of the questions that had arisen during the summer schools, within a period where COVID prevented the annual summer school. The questions address the background to the Sheffield research, and explain the thinking behind the development of the research from a more personal viewpoint, in terms of both theory and practice. Many of these questions clarify the theories that unite the UK and Italian research groups. The article is important for understanding the thinking behind the development of the Sheffield research into dyslexia, which has achieved success internationally.

Keywords: Automaticity, cerebellar deficit, procedural learning, delayed neural commitment

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INTRODUCTION

In 2013, Professor Angela Fawcett from Sheffield in the UK and Dr Eleanora Palmieri from Macerata in Italy first met at the prestigious European Dyslexia Association summer school in San Marino. It was a fortuitous meeting with an instant rapport between Eleanora and Angela, based on their research (Palmieri, 2022 for a review). The following year they met again at the 2014 EDA summer school, where Angela was presenting her work on dyslexia. This resonated with the work that Eleanora was undertaking on dyslexia, with Professor Piero Crispiani, highlighting the need for automaticity in dyslexia. To achieve this, Eleanora built on repetition of sequences of rapid motor skills, asking the dyslexic child to repeat the motor skill pattern she demonstrated, accompanied by letters and words, and leading to proven impact on reading skills (Crispiani, 2015, Crispiani and Palmieri, 2015, Crispiani and Palmieri, 2019). The following year Angela was invited to present her research to teacher training groups at the University of Macerata summer school.

This was just the beginning of a very fruitful relationship between the two research groups, with a series of annual summer schools, as well as international conferences touring Italy with the same protagonists, plus a number of Italian researchers, including Professor Guiseppe Chiarenza. Similarly, Angela was able to introduce Piero and Eleanora to the UNITE conferences at the Dyslexia Association of Singapore, and to the British Dyslexia Association international conference.

This interview took place in 2022, when COVID prevented the annual summer school, and addressed questions that had arisen from this series of summer schools. They provide a personal viewpoint on the research programme developed in Sheffield, and were designed to clarify some important questions arising for everyone concerned

Q1) What was the reason why you decided to deal with dyslexia in your life?

Response Fawcett. "I really knew very little about dyslexia until our son Matt started to struggle at school. He had always seemed an exceptional and engaged child, with an intense interest in language and stories, who liked to chat to strangers on the bus and seemed to have an understanding far beyond his years. Everyone said that he would simply love school, and sure enough, when he started at the local primary school aged 4.5 he said that life had never been so good, to prevent his parents from worrying.

But he started to wake in the night with pains in his legs, and when we went to his first open night, his teachers made it clear that he didn't speak at all in school. In fact they thought he couldn't until one day he was working on an art project and started to talk. It seemed that he was electively mute in school.

We were concerned by his continuing problems with pains in his legs, and he was referred to the children's hospital for tests. Here they found that there were no physical causes, and referred him to the psychologist, because he was showing cross laterality. By this stage, he was 5.5 and had been at a formal school for a year. He was given a full IQ test, and showed exceptional strengths, so much so that the psychologist preferred that the school was not made aware of this. However, despite these strengths, he was unable to recognise a single letter, although he could tell you that nitroglycerine was gunpowder.

This pattern of processing meant that he was diagnosed with dyslexia, a diagnosis which needed to be confirmed when he was 8, because at this stage he was really too young to be diagnosed as dyslexic. At Matt's infant school, his teachers were supportive but really failed to understand his problems, asking him to complete simple 3 piece jigsaws. He was considered for special school, but it was decided that he could move on the local junior school when he was 7 with the other children.

Here Matt's life was made a misery by a teacher who felt he was being difficult if he made mistakes. At this stage he started to stutter really badly which meant that he could no longer even use his language strengths adequately. He had started to get up at 6 in the morning to try and complete his homework. At one stage we went down to school and spread out 9 pieces of homework across the piano, and challenged his teacher, who admitted she knew nothing about dyslexia. At my meeting with the head, he consulted the scores on non-verbal reasoning that had just been completed and found that Matt had scored at the 99.9 percentile. Based on these outstanding results, he said Matthew was just a silly little boy that needed his bottom kicked.

I decided he must leave the school, and move to one which was more sympathetic to his needs, but fortunately a new headmaster started and he allowed Matt to dictate his work to him. During this period, once Matt was diagnosed, I had set out to learn all I could about dyslexia, but a number of elements in Matt didn't precisely match the language difficulties typically associated with dyslexia at that stage"

Q2) What paths did you take to deepen your knowledge?

Response Fawcett. "First of all I read everything I could find on dyslexia and talked to as many people as possible to build my knowledge. My husband David and I had both joined the local branch of the British Dyslexia Association (BDA), the voluntary organisation that provides support for dyslexic children and their parents in the UK.

I became chair of the local branch of the BDA, David became treasurer and I set up a series of public lectures at the University of Sheffield, working with a lecturer there, and we invited all the great and good at that time in dyslexia in the UK to give talks. All of these experts stayed with us overnight, and we talked into the night about dyslexia. I soon realised that this was the area I needed to engage with for the rest of my life!

I signed up to an Open University degree when Matt was 6, but panicked when all the materials plopped through the letter box, and decided I just couldn't do it! It was many years since I had studied for my A levels, and I was not at all sure that I would be able to cope with a degree in Psychology, so set out to retrain my brain to deal with Academia, with one day a week extra mural certificate courses at the University. This built up my confidence enough to apply for university as a full time student in 1984".

Q3) The entrance to the University and the PhD were very important for you, what do you remember about this experience?

Response Fawcett. "I had to enter university as a mature student, at this time I was nearly 40, so I could have done this without any A levels. I cannot explain quite how excited I was to be awarded a place to study Psychology at Sheffield University, I was hyperventilating! But almost from the start, I encountered problems, firstly with the lecturer co-ordinating the new students, who told me I was not qualified to be there, and I certainly couldn't take an honours degree, because I only had Arts A levels, English, History and Latin. I stood my ground and argued with him but then went home and cried.

The timing of the lectures was a nightmare, first one at 9 am and the last one at 5 to 6 pm, so I needed to leave the house early and returned late, taking 2 buses each way. At this stage my children were 12 and 8, so still needing a great deal of support, particularly Matt with his dyslexia. I had to study statistics and the biological bases of the brain, and found I needed to go back to 1st principles in Chemistry. I seemed to be so much better at my secondary subjects than I was at Psychology, but I knew this was where I needed to be.

In my 2nd year, I developed type 2 diabetes, and even failed one of the exams, leaving me completely distraught. Prof Rod Nicolson, who later became my supervisor for my PhD, noticed an error and the whole year had to be remarked, and I subsequently passed with a third, the lowest mark I have ever received. But I had developed hyperglycaemia by drinking Coca Cola and eating mints to keep my activity levels up during the exam, not realising at this stage that I was diabetic, so I had written the right answer and then crossed it out to give the wrong answer.

In my final year, I developed nerve damage in my elbow, it became too painful to write and I had to dictate my finals, a completely different experience from anything that had gone before, and so embarrassing to answer out loud with my lecturers invigilating in a separate room. Nevertheless, I passed with a good mark, and won the Harry Kay prize for my dissertation on dyslexia, which ran to 2 volumes, and allowed me to examine some of the many questions I had about dyslexia. I was then awarded the Parker Habershon Rhodes scholarship for my PhD research.

Again, I was beside myself with happiness and excitement! But then I fell out with my original supervisor, who was primarily interested in handwriting and dyslexia, while I wanted to find out the cause of dyslexia and change the world. She suggested I had nothing to contribute, and should write up as a Master's and leave. Again I stood my ground, although very distressed, and asked if I could change supervisor. It was at this stage that I started to work intensively with Rod Nicolson, 18 months into my PhD and I am proud to say that we are still collaborating over 35 years later.

My confidence at this stage was at an all time low, and Matt had just started secondary school, where his organisational difficulties had really come to the fore, so much so that he had not handed in any of his homework in the first year, it was simply crumpled in the bottom of his bag, because he couldn't find the pigeon holes to submit this. There were further misunderstandings for us to unravel and teachers to educate about dyslexia and its many manifestations, some of these well outside those recognised at the time.

Q4) What was, at the beginning, the theoretical situation in England with respect to this phenomenon?

Response Fawcett. "When I started my investigation into the theory behind dyslexia, there were different perspectives on the problems. I had invited experts to Sheffield before I had started my degree in the early 1980's, and many of these were drawn from a medical perspective, so Margaret Newton, Sandya Naidoo, Beve Hornsby, and John Stein, all professors. I was particularly influenced by Professor Tim Miles, who had produced the Bangor Dyslexia test, and looked for a specific profile in dyslexia. However, by the time I started my PhD, in 1986, research in the UK had crystallised around the phonological deficit, which suggested that the processing of language was the major problem in dyslexia.

This has been the dominant hypothesis for many years, and one that we have researched extensively (Fawcett and Nicolson, 1995, Nicolson and Fawcett, 1995 a and b). In starting my research, I read as extensively as I could, but I was heavily influenced by living with dyslexia, and by the similar patterns of processing that I

found in the wide range of dyslexic children I was working with. My starting point was, could I explain the anomaly of dyslexia, seemingly bright kids who for no fathomable reason were simply abominable at reading and even worse at spelling. It became clear to me that, even when a dyslexic child was performing relatively well, they achieved this by putting in greater resources than others, we called this conscious compensation (Nicolson and Fawcett, 1990; Fawcett and Nicolson, 1992).

This led me to examine learning in dyslexia, highlighting the lack of automaticity in a range of skills, including motor skills. In the early days of dyslexia research, there had been an interest in minimal brain dysfunction, but as the problem seemed to become more and more an educational rather than a medical issue, with the emphasis on phonological skills, these early findings had been largely overlooked. My PhD research, with my new supervisor Rod Nicolson was the first to show that dyslexic children learnt differently and had problems in becoming automatic in their skills, despite ongoing practice (Nicolson and Fawcett, 1990, Fawcett and Nicolson, 1992).

We went on to identify and publish a series of articles on difficulties in learning in dyslexia, working with our postgraduate students (Brookes, Nicolson and Fawcett, 2007; Needle, Nicolson, and Fawcett, 2015; Moores, Nicolson and Fawcett, 2003) and collaborated with colleagues from other research groups including Professor John Stein from the Magnocellular group (Stoodley et al., 2006 a and b; Brookes, Nicolson and Fawcett, 2007). I have to say that we were widely known amongst fellow researchers at this stage as the dyslexia heretics, because for most people it was self-evident that dyslexia had nothing to do with balance, despite the evidence from our dual task studies that dyslexic children had to put in greater ongoing processing effort to undertake these simple motor tasks, and that when asked to add a secondary performance their performance deteriorated in both the primary and secondary task, by contrast with controls.

We went on to examine reaction times in dyslexics and controls, from simple reaction through omission choice and up to lexical decisions (Nicolson and Fawcett, 1994). Interestingly, we found that problems arose for dyslexic children in differentiating between high and low tones, even when no language was involved, although their Simple reaction time was similar to controls, and the limiting factor appeared to be the decision, reflecting slow processing (Nicolson and Fawcett, 1993). This led directly to our next major studies on learning, where we were able to establish a pattern of deficits in all aspects of learning, not just the automatization of skill, but also at the start, the end, the finish and in blending two skills together, using skills unrelated to language.

Our findings suggested that dyslexic children needed longer to master a skill, in terms of both speed, accuracy of performance, and even in overnight consolidation of those skills (Needle, Fawcett and Nicolson, 2015). This provided a clear explanation for the difficulties that dyslexic children encountered in reading and spelling, some of our most complex learned skills.

We were fortunate enough to be awarded a series of major research grants to follow up our research into theory and practice from the Leverhulme Trust, Nuffield Foundation, for intervention studies, and from the Medical Research Council for work on the cerebellum. However, it remained a struggle for me to continue the research in Sheffield, because I was not tenured, only a part-time lecturer, senior lecturer and reader, although also third year tutor, and so I often lacked funds, and needed to work hard to generate more.

I was fortunate that many researchers became interested in the research and collaborated with us on aspects that demanded specialist equipment such as evoked potentials (Fawcett et al, 1993) and eye blink conditioning (Nicolson et al, 2002), both of which showed deficits in dyslexia. I only obtained a tenured and permanent academic role at the age of 62 in 2007, when I become Chair and Director of the Centre for Child Research at Swansea University."

Q5) Dyslexia and the cerebellum. Could you explain to us this precious relationship?

Response Fawcett. "I was extraordinarily lucky in many ways to be at Sheffield university, because all the staff became engaged with my research into dyslexia, because I was always ready to discuss this challenging phenomenon. So one day, a colleague, Professor Paul Dean, made a fruitful suggestion - "have you thought about the cerebellum?" (Nicolson, Fawcett and Dean, 1995; Nicolson and Fawcett, 1999; Nicolson, Fawcett and Dean, 2001a and 2001b).

At this stage the role of the cerebellum had been largely overlooked in dyslexia, as indeed it had in the brain as a whole. This was mainly because techniques for imaging were not sufficiently well developed to allow scanning the full brain, and the cerebellum was typically excluded in order to focus on the cortex or the 'thinking' brain. As techniques become more sophisticated, it became possible to include the cerebellum in imaging studies, and we were able to demonstrate differences in a PET study of the cerebellum of dyslexic adults while learning a new motor task. (Nicolson et al, 1999).

I was even able to obtain permission from Professor Al Galaburda, custodian of the US dyslexic brain bank, to examine the cerebella of dyslexic adult brains compared with controls. This involved recruiting a postgrad, Andrew Finch, with

an interest in brain anatomy, to train with Galaburda's team in the USA over a 6 month period, to reveal anatomical differences between the dyslexic and control cerebella (Finch, Nicolson and Fawcett, 2002).

We even identified differences in volume and metabolism in the cerebellum of dyslexic adults using MRI and working with the Hallamshire Hospital in Sheffield (Laycock et al., 2009).

Interestingly, we also found that children with lower ability (mild and moderate learning difficulties) showed a different pattern of performance on the cerebellar tests, with the lower ability groups more stable with better muscle tone (Fawcett, Nicolson and Maclagan, 2001).

Recently extensive support has emerged for the role of the cerebellum in learning and indeed in all aspects of literacy, leading to a revision to the DSM-5 (Al-Yagon et al., 2013) and to a major consensus paper on the role of the cerebellum (Marien et al., 2014)."

Q6) The term "auditory and visual proceduralisation" is a concept widely treated in Cerebellar Theory. It is very different from sensory perception. Could you explain the difference.?

Response Fawcett. "**Auditory and visual proceduralisation** of skills refers to the stage in learning beyond automaticity, whereas sensory perception is a much earlier stage in processing in which the information from the senses is simply registered. Here we found difficulties in dyslexic adults in identifying pure tones (Nicolson and Fawcett , 1993a)

Proceduralisation by contrast implies that information has been encoded and transformed into action, bringing together different components from the senses to form a new whole".

Q7) The cerebellum is responsible for automating motor, linguistic and mnemonic procedures. In your publications, you underline the importance of going beyond the problem of reading, what do you mean? Is there a connection with everyday life too?

Response Fawcett. "**Cerebellar problems in proceduralisation** (the stages of processing towards automaticity) can be observed in relation to literacy, where each stage builds upon the previous, but it is also an integral component of everyday life and actions. The processes involved include using attentional mechanisms and memory, taking both auditory and visual components, and blending them together into a new action.

Proceduralisation involves knowing what to do and how to do it, blending actions together to form a smooth new whole, and can be illustrated in acquiring motor skills such as tying shoe laces, learning to swim, or ballroom dance, as well as in learning to read and spell, incorporating a series of individual actions into expert performance. This means that efficient proceduralisation of skills is key in many aspects of everyday life”.

Q8) Cerebellar research is rich in contents but also in scientific data, especially those relating to the reaction times of dyslexics, which are slower than the control group, especially in the double task. Could you make clear this important aspect?

Response Fawcett. “Linking back to my earlier comments on our findings on reaction times, it seemed that problems arose for dyslexic children even when language is not involved, especially when a decision is needed. Normally, with learning comes automatism of performance which benefits from being fast, smooth and difficult to interrupt. Once performance becomes automatic, however, it becomes difficult to break into and change performance.

The benefits of this are that it becomes possible to add a secondary task, or simply do something else complex without disrupting initial performance. For children and adults with dyslexia, whose performance is likely to remain effortful, they can only achieve near normal performance in many tasks by putting in extra effort.

We have called this the process of **conscious compensation** which allows them to begin to overcome many difficulties in areas not associated with reading. When they are asked to introduce a second or dual task, then it is likely that performance on both tasks will be disrupted. This is because their processing is completely taken up by effortful processing, leaving little spare capacity.

This can be seen when trying to teach a dyslexic person a new task that builds on previous learning. They still need to think about the original task, although most people by this stage of learning should be able to process automatically. This will mean their performance is slower and more effortful, and in terms of reaction times, also more prone to error. This method of processing places a heavy ongoing load on working memory, making all aspects of learning more difficult.”

Q9) Is executive slowness a fundamental trait or is it one of the symptoms among others?

Response Fawcett. “**Executive function** has now been identified as one of the key

issues in learning for all children including those with dyslexia. This has been identified by our research group (Smith-Spark et al., 2013), and the Macerata research group (Crispiani, Mountstephen and Palmieri, 2019) amongst others.

Further research is needed to establish whether or not slowness is fundamental, but from our earlier research which identified this slowness even when language is not involved, it seems likely that this forms part of the fundamental problems in dyslexia.

Strikingly, it has been found that executive processing could be improved by a progressive challenge, with motor as well as cognitive tasks key in the development of executive functions and in building automaticity across a range of skills”.

Q10) The Cerebellar Theory clearly highlights the involvement of different brain areas in the processes of reading and writing. The dyslexic, as evidenced in your research, has a qualitatively different functioning and a disorder in executive functions with an abnormal neuronal migration. Could you explain this last aspect?

Response Fawcett. “Research has suggested that the problems in dyslexia first arise during the early stages of **neuronal migration**, where the components of the brain move to the right part ready to form the foetal brain. It seems that the migration itself may be less efficient in pruning the unwanted connections of neurons from the networks. This means that processing is likely to be delayed because the networks are more diffuse and less focused.

We have coined the phrase ‘**delayed neural commitment**’ (Nicolson and Fawcett, 2019) to label this type of dyslexic processing. Interestingly, this can lead to both strengths as well as weaknesses, allowing those with dyslexia to be more creative and able to see the ‘big picture’ in comparison with their non-disabled peers (Nicolson, 2019)”.

Q11) What correlations are there with the “Magnocellular Theory”.

Response Fawcett. “This is an interesting connection in itself, because the **magnocellular deficit** is also a long established theory of dyslexic deficits, relating to the visual aspects of learning, although largely neglected in favour of phonological processing.

It is hard to deny that vision must play an integral part in the early stages of processing written language, where you need to register the letter or syllable and then link it to the phonological components. It has also long been argued that

dyslexics can suffer from blurred vision, where the letters seem to move, and this has been addressed previously by the use of coloured filters or overlays.

Interestingly, the cerebellum has been described as the 'head ganglion' of the magnocellular system because it contributes to binocular fixation and eye movements in reading, and links these with the inner voice, all key components of reading which have been found to be deficient in dyslexia.

Our relationship with Professor John Stein, the major proponent of the Magnocellular deficit has always been good, reflecting overlaps between our theories, and we have been able to collaborate on research together".

Q12) In your interventions, you often reiterate the importance of identifying dyslexia before reading failure. What can be done from the point of view of early prevention?

Response Fawcett. "Early prevention is key to improving the outcomes for children for dyslexia, and in order to further this I have designed a screening test with my colleague Rod Nicolson, the **Dyslexia Early Screening Test (DEST)** that can identify children at risk for failure in literacy between the ages of 4.5 and 6.5 (Nicolson and Fawcett, 1996). Naturally, children at this age are not yet reading, but it is possible to check performance on a range of pre-reading skills in comparison with children of the same chronological age.

The DEST was first published in 1996, and has gone through a number of iterations, most recently as part of the DST-2, a face to face or remote computer based screening test, originally designed for use in the pandemic, including a number of executive skills in order to establish risk. The DST-2 includes all age groups, and will be published later in 2026 as the **BEST test (Brain Efficiency Test)**, with 2 indices literacy and executive function. The DEST-2 has been translated into a number of languages for use across the world, and the DST-J, DST-S and DAST added to our tests to screen all age groups up to adult.

The screening tests have been the basis of a number of research projects combining screening and intervention and followed up over time, all of which have been eminently successful (Nicolson et al., 1999; Fawcett et al., 2001; Nicolson and Fawcett, 2000; Lynch and Fawcett, 2000; Lynch, Fawcett and Nicolson 2000). I am most proud of what I managed to achieve during my time as Professor and Director of the Centre for Child Research at Swansea University, in combining screening and intervention for primary school children.

Working with a key player in the local authority for special educational needs, plus a group of dedicated teachers, we were able to develop an intervention designed to build together motor, executive and phonological skills, in a structured programme of intervention known as 'Hands on Literacy' This was tailored to the findings of the DEST screening, into a free intervention designed for use in schools, developed without funding.

We evaluated this formally in schools in Pembrokeshire, showing that children who had received support with this package showed significantly less risk after an 8 week intervention, compared with controls who had received the normal school input. We were eventually able to involve large numbers of primary schools, publishing an evaluation of this approach indicating its success with well over 1000 children at age 5 (Fawcett and Jones, 2019). It was particularly gratifying to see that progress persisted over time, and that in a number of schools where the system was used, striking improvements were made in the number of special needs children at age 7. More recently, the system was adopted in Israel working with nursery schools with Autistic, Speech impaired and Dyslexic children, amongst others".

Q13) Promoting motivation in dyslexic children is everyone's duty and it is your great appeal to all institutions in the world, given your international success. You use a beautiful sentence addressing the teachers, inviting them to be "tailors" that is to act as if they were tailors who with needle and thread adapt the right clothes to each child. Is this an encouragement not to standardise learning paths?

Response Fawcett. "Over the years we have come to realise that a key aspect of learning is success, which builds motivation and resilience to continue even when learning is challenging. On the other hand, early failure can be extraordinarily destructive, with repeated failure leading to learned helplessness. On top of the original difficulties we have the overlay of loss of confidence, a cumulative deficit which can destroy the motivation to learn. I am passionate about the need to identify the strengths of each individual child and build on this.

Until recently, the standard approach in the UK has been to insist on the use of systematic synthetic phonics as the only tool that teachers can work with in early learning. However, a **skilled teacher should use all the tools** at her disposal in order to find the most successful combination of approaches for each particular child.

A key aspect of this, is restoring confidence and building success, rather than insisting on overuse of an approach which dyslexic children may find impossible. Reassuringly, research has now come out in the UK highlighting the importance of

a broader approach to intervention and critiquing this emphasise on synthetic phonics to the exclusion of all else.

A wise teacher with experience in working with these children with insurmountable difficulties should be aware of this need for **a multisensory integrated approach** to help children learn successfully, using whichever tools prove most effective in their repertoire of support measures."

Q14) Today the Cerebellar Theory is widely confirmed by the scientific community. What are the awards obtained?

Response Fawcett. "Originally the cerebellar theory was largely dismissed by the scientific community, but with increasing knowledge of the important role of the cerebellum, coupled with improved mechanisms for imaging the brain, they have opened up to examine this more closely.

The involvement of the cerebellum in learning, memory, cognition and emotion has generated over 100 large scale awards from NIH in the USA, amounting to many millions of dollars of research funding over several years, involving many key researchers internationally."

Q15) How do you consider the theoretical development in the field of dyslexia and its tendencies today? Do you consider an important topic the approach to the concept of "executive function disorder"?

Response Fawcett. "**Executive function disorder** is clearly a key new concept in our understanding of dyslexia throughout the lifespan. The work of Adele Diamond, in particular, has been striking in highlighting the usefulness of motor skills which are progressively challenged in recruiting all potential available resources for success in a range of areas.

This has been a real breakthrough in highlighting the key to resolving the difficulties that children with dyslexia and other learning difficulties encounter, particularly in the insight that those who are most profoundly affected can make the most progress. This is a message of hope for these children and their families everywhere.

Our forthcoming screening test, the **Brain Efficiency and Tuning test (BEST)** The BEST test is due to be published in early 2026, has acknowledged the importance of executive function in producing a short test with 2 indices, one of literacy and one of executive function. This has the potential to enrich screening for all age group from 4.5 to 65+."

Q16) I believe your strong personal motivation is the key of your success accompanied by a great dissemination force. What are the methods to help dyslexic children to take flight? What more could be done?

Response Fawcett. "I have always been passionate about the need to recognise the individual strengths of children with dyslexia, in order to help them overcome their weaknesses. Initially, I seemed unable to help my own son in his struggles to be recognised and this made me determined that I should learn more about dyslexia and try to change the world in terms of their recognition and support. This combination of personal passion and academic evidence seemed to fuel my ongoing motivation to make a real difference for dyslexics across the age range.

My sphere of interest only grew as I came to understand the changing phases throughout the lifespan, in school, employment and in the emotional life of a dyslexic, with old age itself a new challenge in understanding the impact of dyslexia on memory and processing. Many teachers and parents still equate dyslexia with literacy difficulties alone, and there is much to achieve in changing these limited perceptions. There are so many questions still to answer, and so I am determined to never give up in this fight!"

Q17) Many dyslexics are talented, creative and brilliant. Is it important to raise awareness among the population to talk about their strengths?

Response Fawcett. "In my view this is vitally important and the key to success, in encouraging dyslexics to identify these areas of strength and work towards a life that enhances these. For many dyslexics, life improves immeasurably once they leave school and can begin to carve a niche for themselves where their strengths can be utilised to the full, ideally as part of a team, but often in an entrepreneurial role, where their idiosyncrasies can be seen as the strengths that they can be, and they have ongoing support in their areas of weakness.

So it is vital that the **strengths and creativity of dyslexia** becomes part of a wider general knowledge on the impact of dyslexia, while recognising that for many people it may be a comparative rather than an absolute strength. This means that everyone can be encouraged to work to their personal best. Positive psychology and within this discipline, positive dyslexia are going to become key to working with dyslexics in the future (Nicolson, 2019). Enormous progress has already been made, but it is important that we do not rest until these strengths are universally acknowledged.

Q18) You travelled a lot and you know well the Eastern world: are there some differences in the dyslexic phenomenon and in the theory applied?

Response Fawcett. "I think whatever the language employed there are universal similarities in the expression of dyslexia internationally. English is the most irregular language, which makes it the most complex for anyone to become expert in. But it is the whole child or person who is impacted by dyslexia, not just their literacy, and this applies in whichever country or language you are working. In some countries it seems to be easier to focus on the whole child, and not just their progress in literacy. I have been particularly impressed by the emphasis on motivation and self-actualisation that I find in many of the Asian countries, within cultures that have a strong work ethic and emphasise the importance of education more clearly than the UK.

Eastern philosophies drawn originally from Eastern religions including Buddhism, such as mindfulness, are now becoming recognised as essential for well being. Even in the UK, an increasing emphasis on mental health is developing, although I believe we are currently rated one of the least happy countries in the world, with issues exacerbated by the recent pandemic. An awareness that well being, motivation and mental health are all intricately entwined as we develop throughout life, has now become essential in order to produce the well-rounded confident and outgoing people we need, who can achieve success in whichever sphere their interests inspire."

Q19) When you started dealing with dyslexia, did you expect such success about you in all the world?

Response Fawcett. "When I started to learn about dyslexia, I was driven by passion and a need to help my son. I soon realised that my best route for this was to use my academic skills, which had been largely dormant for some years. Everyone has a different approach when they set out on a journey, and I think I had no idea that in the process my work would be so widely recognised, although it should be clear from my story that life was not always without struggles.

The opportunities I have been offered, and the support I have received have enriched my life experience beyond my wildest dreams, with a seemingly unending process of hard work and learning, coupled with engagement internationally, taking me to all four corners of the globe in a whirlwind of challenging and rewarding activity. I am particularly delighted to have been acknowledged in **2024 and 2025 by Scholar GPS as 3rd in the world for Lifetime achievement in dyslexia.**

Q20) Considering the life strong changes today, do you think that the words and concepts referred to dyslexia could become less adequate?

Response Fawcett. "I think our greater awareness of neurodiversity and the overlap between a range of disabilities could mean that we become more accepting of the differences in learning and behaviour that characterise dyslexia and other learning disabilities. I would like to see teaching targeted towards the needs of the children involved, building their motivation and confidence, rather than crushing their spirit as much of education can these days.

We need to profile the strengths and weaknesses for each person, in order to ensure they are motivated to achieve their potential. It may be possible to move away from defining individuals as deficient, as we currently do in order to provide funds for their remediation, and provide a system which can address variations in processing style. In life in general, a greater awareness of individual needs and a growing kindness towards others is key, ensuring everyone has enough to fulfil their needs, in education, work and life".

Q21) What do you think of dynamic therapies emerging today?

Response Fawcett. "I think dynamic therapies are exciting, promising and focus on the individual, with a growing potential to change the way each person interacts with the world around him or her. A time efficient approach which builds the individual's ability to successfully deal with their reactions to their circumstances in order to produce a positive outcome, seems to me to be the key to ongoing success. A combination of our tried and trusted approaches, coupled with openness to these new approaches which can enhance our well-being, may well be the answer in future education and in working practices.

Use of **technology and AI advances such as Chat GPT** could play a major role in success for dyslexia over the next few years. There should always be opportunities to learn something new, engage with life and update our current thinking in the light of original and ongoing insights and evidence."

To conclude, I should update you on progress since 2022 when COVID prevented so much face to face communication. I have continued to work intensely, preparing our new BEST test, working with Singapore to produce the Asia Pacific Journal of Developmental Differences, and setting up contracts with India to expand our existing tests, DEST-2, DST-J, DST-S and DAST, aiming to update the norms and translate these tests into a range of Indian and Middle Eastern languages.

From a research viewpoint I have returned to some of our earlier theories, evaluating a memory based training in two groups of dyslexics, with one group challenged by a balancing task. This showed that both groups improved in reading and wider skills, with the group balancing as well as learning showing the most significant impact, related to changes in the resting connectivity of the fusiform gyrus.

Again, this has been a collaboration based on shared ideas rather than funds, working with a colleague internationally with access to both balance training and to MRI, who can evaluate the impact of learning on the brain (Ramezani et al., 2023). It is rewarding to see the ongoing development of theories that we have proposed over the years, and their impact on theory and practice.

Finally, so what of Matt, who inspired this whole process? He initially attempted a Masters in Politics with Russian, but as a dyslexic was unable to learn that complex language, ending up with a good 2.1 in Politics after much heartache. He became an International observer for the Peace Brigade International, becoming fluent in Spanish and working to prevent the 'disappearance' of the native people of Guatemala, a worthwhile but dangerous role. Following his passion for peace, he became director of the Campaign for Nuclear Disarmament (CND) for the North of England for many years. Most recently he has become co-founder of the Carbon Co-op, impacting on climate change, as part of an international consortium. Matt lives his dream!

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