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DISCUSSION

Developmental language disorder and neurodiversity: Surfacing contradictions, tensions and unanswered questions

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Abstract

Background: Neurodiversity is increasingly discussed in relation to autism research and practice. However, there is a lack of scholarship concerning the neurodevelopmental condition of Developmental Language Disorder (DLD) and the neurodiversity movement. While this movement may hold opportunities for the DLD community, the application of the concept of neurodiversity to DLD research and practice needs consideration, as DLD and autism have very different levels of public and professional awareness and understanding.

Aims: In this article, we discuss what the concept of neurodiversity and the associated neurodiversity movement could mean for DLD research and practice. We aim to critique some assumptions that may arise from the application of neurodiversity principles (or assumed principles) to the field of DLD.

Methods: This is a discussion paper, drawing on the personal experiences and reflections of the author team.

Main Contributions: We make the case for why DLD should be included in discussions about neurodivergence and outline considerations for doing so, and why some issues and applications may be particular to DLD. We outline points of similarity and contrast with autism in relation to our understanding of neurodiversity. We consider the issues around diagnosis and terminology and urge practitioners to continue to diagnose DLD using currently agreed terminology, so as not to undermine recent awareness efforts. We note that a neurodiversity-informed perspective challenges us to offer interventions that operate at the level of our environments, not just at the level of an individual. Indeed, neurodiversity offers a platform to argue for better rights and more inclusive spaces in mental health settings, education and work for children and adults with DLD.

Conclusions: DLD should be considered from a neurodiversity-informed perspective, and it is our hope that this will lead to neurodiversity-affirming practice

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that will afford young people with DLD better understanding from members of the public and the professionals who work with them. Further work is needed to better support children, young people and adults with DLD to have a voice in the neurodiversity movement.

KEYWORDS

childhood, developmental language disorder, education, neurodiversity, policy

What this paper adds

What is already known on the subject

- Neurodiversity approaches are increasingly being taken up in research and practice in relation to autism, meaning that our understanding of autism and how autistic people are supported is increasingly drawing on the principles of neurodiversity. However, autism is not the only neurodivergent population. Developmental Language Disorder (DLD) is another neurodevelopmental condition; however, relative to autism, DLD has lower awareness amongst professionals and the public. There has been no scholarship that has examined DLD through the lens of neurodiversity, or considered the application of neurodiversity-affirming approaches to DLD.

What this paper adds to existing knowledge

- In this paper, we examine what the neurodiversity movement means for DLD research and practice. In particular, we consider what neurodiversity in the field of autism might teach us about the application of neurodiversity in the field of DLD, and highlight where we believe there are important differences between the two populations. We reflect on what neurodiversity means for intervention, diagnosis, terminology and championing the need for accessibility, especially with regard to mental health support, education and employment.

What are the potential or actual clinical implications of this work?

- Neurodiversity highlights the need to consider interventions at the level of an individual's environment (e.g., how can we make this space more inclusive?) as well as interventions operating at the level of the individual themselves (e.g., interventions focusing on an individual's language skills). We challenge the notion that neurodiversity-affirming approaches mean not diagnosing DLD or changing DLD's terminology: we argue that this is not in the spirit of the original neurodiversity movement, but also that for a condition with such low public awareness, these actions could do more harm than good for families affected by DLD. We call for more in-depth scholarship and discussion around the application of neurodiversity approaches to DLD and argue that the neurodiversity movement offers an important opportunity to raise better awareness and understanding of DLD in multiple sectors, including (but not limited to) mental health, education and employment.

INTRODUCTION

Neurodiversity ‘means a lot of different things to different people’ (Chapman, 2020, p. 2018), holding both scientific and political value. From a scientific perspective, the term neurodiversity is often used to capture a concept of population-level variation in the functioning of the human nervous system, meaning that across the whole population, there are differences in how we perceive, process and respond to information (Aitken & Fletcher-Watson, 2022). A simple view of neurodiversity would hold that the distribution of neurological diversity is such that some neurotypes are more common than others and that our social structures and systems are set up to benefit the majority-neurotype, comprising ‘neurotypical’ individuals in the population. In this view, those in the minority, the ‘neurodivergent’ population segment, are tasked with navigating environments that are not optimised for their profile.

The reality of neurodiversity is, however, more complex than this simple description allows. Neurological diversity is manifest across multiple dimensions and of course, there are different intersections with other social and cultural aspects of life. Those outside the neuro-majority may have little in common with each other, and it does not necessarily make sense to view neurodivergence as a single continuum from neurodivergent through to neurotypical. In this paper we use the terminology of neurodiversity to refer to population level variance and the term neurodivergent to refer to those within a population who have a variance neurological function or structure that differentiates them from the majority.

As well as the scientific conceptualisation, there is a social movement associated with neurodiversity. The neurodiversity movement calls for the acceptance, inclusion and celebration of different neurotypes, and the de-pathologising of neurodevelopmental conditions. It challenges the conventional ‘medical model’, under which something inherent in a person’s biological makeup is seen to lead to deviance from a normal standard of health and functioning. This deviance is viewed as something that should be addressed in order to bring a person’s functioning in line with the normal standard, leading to a deficit-based approach to both treatment and research, as we aim to understand what causes the ‘problem’ so it can be fixed or prevented (see Pellicano & den Houting, 2022 for a description of the conventional medical vs. neurodiversity models of autism).

Both the scientific and the social movement aspects of neurodiversity are relevant to speech and language therapy. The concept of neurodiversity can help inform research and there are increasing calls for speech and

language therapy to be *neurodiversity-informed*, that is, to consider what an inclusive, neurodiversity-positive perspective means for our practice, or to be *neurodiversity-affirmative*, to consider what direct action speech and language therapists (SLTs) can take to end exclusion of neurodivergent individuals and groups. We use the expression neurodiversity *lens* to refer to the former and the neurodiversity-affirming *approach* to refer to the latter. Whilst the concept of neurodiversity is perhaps best known in the context of scholarship and practice relating to autism, it gives rise to important questions about how we conceptualise broader human differences: when should someone’s characteristics be considered ‘disordered’, and when does this ‘disorder’ label do more harm than good? For example, historically autistic characteristics were a target for treatment, but we appear to be moving away from ‘treating autism’ and towards supporting people who have a difference, and making our spaces autism-friendly (although, this is by no means universal). Other neurodevelopmental conditions however remain relatively underexplored through the lens of neurodiversity. Recently, there has been consideration of what neurodiversity might mean in the context of Attention Deficit Hyperactivity Disorder (ADHD): namely, that a neurodiversity approach to ADHD calls for greater scope for supporting individuals with ADHD beyond pharmacological interventions and to help people with ADHD have a positive self-view (Franke et al., 2023). In the present discussion, we focus on exploring the implications of this concept for understanding and supporting individuals with Developmental Language Disorder (DLD).

DLD is a childhood-onset condition that affects approximately 7% of children starting school in England (Norbury et al., 2016), with similar prevalence rates across the world (e.g. Wu et al., 2023). It is thus more common than autism, despite being less well known to the public (Kim et al., 2022). Individuals with DLD develop expressive, receptive or pragmatic language abilities (or a combination of these) in ways that are different from the majority of age-matched peers, in the absence of a known biomedical cause or sensory impairment. Differences can include developing language abilities at a slower pace, displaying developmental linguistic immaturities for a longer period, language abilities following an atypical, idiosyncratic pattern of development, and so on. Children with DLD may or may not have low IQ but this does not form part of the diagnostic criteria. Additionally, young people with DLD tend also to have difficulties in other areas of functioning, for example, reading impairments (Erisman & Blom, 2020), motor difficulties (Finlay & McPhillips, 2013) or attentional problems (Smolak et al., 2020). They may also struggle socially (Durkin et al., 2017; Mok et al., 2014) and

experience mental health difficulties to varying degrees (Toseeb et al., 2022, 2023).

DLD is lifelong; marked language difficulties can persist into adulthood (Clegg, Hollis, Mawhood & Rutter, 2005). Children who are identified as having DLD at the start of primary school may improve their oral language ability over time, but their scores on measures of linguistic ability tend to stay comparatively lower than those for children without DLD (Norbury et al., 2017). Given the gap between a child with DLD's language skills and those of their same-age peers, to catch up would require children with DLD to have even faster language development than their typically developing contemporaries. This is an unrealistic therapeutic goal given that children with DLD have phonological short-term memory challenges, which impact their language development (Conti-Ramsden & Durkin, 2007) and encoding difficulties that mean they need more exposures to vocabulary and syntactic structures in order to acquire them, compared to typically developing children (Alt & Plante, 2006; Cleave et al., 2015; Gray, 2003; Rice et al., 1994). In essence, the underpinnings of language learning are qualitatively different in children with DLD compared to children without DLD. While speech and language therapy can support children and young people to improve their language functioning, therefore, it is unlikely to 'resolve' DLD.

For this reason, many speech and language therapists (SLTs) take inspiration from the WHO International Classification of Functioning, Disability and Health (WHO, 2001), and focus interventions on activity, participation and context, rather than solely on language impairment (McCartney, 2017). For example, the SLT may work together with a class teacher to make a science lesson more accessible for students with DLD by providing new vocabulary in advance, making use of short video 'explainers' for experimental procedures, and ensuring levels of background noise are minimised in the classroom. In many ways, this broad approach to therapy goals is consistent with a social, rather than a medical model of disability.

There has been limited scholarship considering the place of DLD through a neurodiversity lens. While making no mention of neurodiversity per se, a paper by Tomblin (2006) does examine learning disability, and specifically DLD (or 'Specific Language Impairment' as it was termed at the time) via approaches from the philosophy of medicine, to argue that the conceptualisation of DLD draws upon cultural and biological factors. It is argued that cultural values determine which aspects of human function and characteristics are considered instances of 'ill health', but that these functions and characteristics arise (in part) from the natural world, meaning that these functions and characteristics in themselves are culturally

neutral. Through this approach, Tomblin (2006) essentially argued that DLD is a condition that is given its status as a 'disorder' because of the value that cultures place, particularly on academic achievement. Language and literacy abilities (the latter of which is often impacted in DLD) are argued to be culturally neutral in themselves: relatedly, DLD has been argued to be best considered as part of a dimension of human language ability: that is to say that rather than language ability being qualitatively different in children and young people with DLD, language ability is dimensional and those considered to have DLD occupy the lower end of the language ability spectrum (see Norbury & Sparks, 2013). However, because of language and literacy abilities' relationships to academic achievement, which is prized by society, these abilities inherit cultural value. The main tenets of Tomblin's thesis are overlapping with social models of disability, which posit that disability arises out of a conflict with a person's abilities or characteristics and the expectations and limitations imposed upon them by the wider environment.

In addition to the little application of neurodiversity frameworks to DLD, there has also been limited discussion about what the neurodiversity movement can do for people with DLD, and what challenges the interaction between neurodiversity and DLD research and practice raises. As the characteristics of conditions such as autism are de-pathologised, with social and communication 'impairments' becoming thought of as differences, points of variation amongst the human population rather than a disorder, should we apply this same framework to the language impairments faced by those with DLD? In our personal discussions with SLTs, some clinicians are already adopting this approach, and have concerns about 'pathologizing language differences'. However, while there is much that the community of DLD researchers and practitioners can learn about the application of a neurodiversity approach to their clinical and research work from its application in the field of autism, we feel there are some notable differences between autism and DLD, which illuminate the complexity of neurodiversity and raises questions about whether neurodivergence stemming from different underlying causes and in different social conditions have different implications.

In the following sections, we reflect on the application of a neurodiversity lens to interventions, terminology and diagnosis, and making societal spaces accessible for those with DLD. We draw comparisons with autism in particular, but also other neurodivergences such as ADHD. Our primary aim is to explore what opportunities the neurodiversity movement and a neurodiversity lens applied to SLT practice could unlock for the DLD community and what considerations must be made to avoid unintended harms.

The goals of intervention, support and prevention

It could be argued that autism and DLD differ in terms of current foci for interventions and approaches to interventions generally. Interventions that aim to improve a child's skills in affected areas of language are still commonplace in interventions for children with DLD; for example, interventions designed to teach vocabulary, semantic relationships or morphology. Interventions for autistic characteristics, however, are seen by some as ableist, even traumatic, and counter to a neurodiversity-affirming perspective on neurodevelopmental disorders (see Schuck et al, 2021, for a discussion of the interaction between neurodiversity and behavioural interventions in autism). Indeed, the different approaches to intervention across these two conditions are evident in their differing research priorities. In a recent report listing the top 10 priorities for DLD research based on consultation with researchers, practitioners and individuals with lived experience, five of these 10 priorities relate to intervention or factors that may affect intervention (Kulkarni et al, 2022). From a systematic review of autism stakeholder research priority papers, which synthesised evidence from a range of stakeholder groups, it appears there is a limited call for further research on interventions for autism characteristics (Roche et al., 2021). If we want to improve language abilities (e.g., through word-learning interventions), and perhaps even intervene on underlying processing skills such as working memory, does that fit a neurodiversity approach?

Importantly, the neurodiversity movement does not argue there should never be interventions. Rather, the goal of interventions should not be to normalise a neurodivergent person, but rather to promote 'adaptive skills and traits that will lead to a fulfilling life' (Dawson et al., 2022, p. 2). For example, interventions for autistic people may seek to enable them to communicate but would accept that this communication may look different to neurotypical communication. We suspect that most SLTs would agree the goal of intervention in DLD would not be to make language 'appear normal', but interventions aimed at receptive skills, vocabulary, etc., are arguably attempting to bring language functioning in DLD closer to age norms.

One consideration would be to examine more closely what young people with DLD themselves want to improve through interventions. It has been argued from a neurodiversity-affirming perspective that the outcome measures for gauging the effectiveness of interventions with neurodivergent people ought to have input from neurodivergent people themselves: to some, behavioural interventions may be deemed justifiable, if they can be shown to improve variables that neurodivergent people themselves care about, and improve overall all quality of life (Schuck et al, 2021). In current research on interven-

tions for children and young people with DLD, how often does this occur? In addition to measuring whether an intervention has improved vocabulary scores, or syntactic ability, what about the impacts to things that likely matter more to young people and their families, such as social participation, or self-esteem? Perhaps this is an area where research has yet to catch up with practice. The RCSLT (UK's Royal College of Speech and Language Therapists) Online Outcome Tool enables SLTs to record episodes of care outcomes in areas relating to impairment, activity, participation, wellbeing and carer well-being. In contrast, many of the standardised measures used in research contexts tend to focus solely upon impairment, although this is beginning to change (e.g., Hidecker et al, 2017; Levickis, 2017; McCartney, 2017)

Finally, what is perhaps a contrast between DLD and autism is the extent to which 'interventions' for the latter might increasingly feature adjustments to a person's environment, rather than targeting skills within a child or person themselves. As awareness and acceptance of autism has increased, so has understanding that autistic individuals will function much better if their sensory and communication needs are accommodated. Proponents of a neurodiversity-affirming approach would argue that support and interventions should not simply aim to change the autistic person, but rather that society and the person's environment should also change to allow people with neurodivergences to thrive. We described previously how SLTs may already apply the principles of the social model of disability, using interventions around activity, participation and context, and indeed clinical guidelines for DLD from the RCSLT propose that SLTs can help children with DLD by supporting teachers and parents to use strategies to make communication friendly spaces: this is still an 'intervention' but not operating at the level of individual child or young person. As we discuss later, in our view such adaptations are not commonly implemented for youth with DLD in a way that allows them to achieve their full potential, at school, work, or when accessing services, but a neurodiversity lens could provide a way to better argue for these adaptations to be made.

Labels matter: Disorder versus difference, awareness versus understanding

In addition to their differences in terms of interventions, autism and DLD are in very different places in terms of their public awareness and how the diagnoses are viewed by professionals who work to support children and people with these conditions. What a condition is called, and the consistency of its name, is an important part of raising public awareness and understanding; but a neurodiversity-affirming approach could be argued to fit poorly with 'disordering' children's language differences, inherent in the term 'Developmental Language Disorder'.

While not meaning to underplay the difficulties that autistic people face in getting identified and diagnosed, we argue that autism does not face the same challenge as DLD in terms of recognition and diagnosis. Even in the context of long waiting times for an autism diagnosis, inequalities in access to diagnosis by gender, ethnicity and socioeconomic status (Kelly et al., 2019; Lockwood Estrin et al., 2021; Mandell et al., 2009), and facing crude stereotypes about autism, the general public and professionals who work with autistic people have *heard* of autism, unlike DLD. Autism does not have the same awareness problem that DLD does. Recent efforts to unite around the term DLD are an attempt to combat this problem (Bishop et al., 2017); if we start to move away from consistently using the term ‘DLD’, opting for other terms to avoid using ‘disorder’, might we undermine the endeavours taken to increase awareness of the condition?

Furthermore, in the context of currently limited public and professional awareness and understanding of DLD, we argue that reframing DLD as a ‘difference’ could have negative consequences for families who already face difficulties getting appropriate support. Framing the language needs as differences may mean they are underestimated in terms of how much they can impact a person’s social and educational experiences. We would argue that we are too young in DLD’s history to remove the ‘disorder’ from its name; however, we acknowledge that there is very limited research evidence to help inform whether what term is given to a child’s language difficulties (e.g., Developmental Language Disorder vs. speech, language and communication needs) impacts on how that child is perceived and what support they receive.

Some of us have experienced a reluctance of some clinicians to give a diagnosis of DLD for fear it pathologizes language difference. Indeed, recent research on SLTs’ experiences diagnosing DLD highlight that some clinicians do not use the term with families, due to concerns it has negative connotations and might be stigmatising (e.g. ‘To parents, I probably wouldn’t say [DLD]. The word disorder is quite a medical term, and it can have a negative connotation. If a parent is told that their child has a disorder, it can cause worries that “my child is inferior”’: Harvey, 2023, p. 9). It is interesting to consider whether this would be the case if a child presented with autism: would they similarly fear diagnosing autism, for fear that such a diagnosis would be stigmatising? Undoubtedly autistic people do face a high degree of stigma (Han et al., 2022), but not diagnosing a person’s autism does not make them less autistic, and knowing one is autistic offers young people a way to understand themselves, approach themselves with kindness rather than self-criticism, connect with others who are also neurodivergent and advocate for their rights (Wilson et al., 2023). Furthermore, the conceptuali-

sation of neurodevelopmental conditions as disabilities is not inherently in conflict with the neurodiversity movement: in their recent paper on neurodiversity in relation to autism, Ne’eman and Pellicano (2022) note that the roots of the neurodiversity movement are firmly in the disability rights movement, and that neurodiversity proponents, at least the original activists, were not calling into question the notion of autism as a disability.

The respective dangers of diagnosing and not diagnosing DLD and ADHD have been discussed by Graham and Tancredi (2019). ADHD makes for an interesting comparator in relation to DLD: ADHD is very well known (though not necessarily well understood) by the general public, in stark contrast to DLD. Graham and Tancredi (2019) consider the potential negative consequences from identification and diagnosis to be largely stigmatisation, although they highlight this especially on the part of ADHD. DLD has such low public awareness, they consider that there is actually limited stigma attached to the term. Despite this risk, they describe a number of positives to identification and diagnosis. Diagnosis can unlock access to support, offer protection under disability rights legislation, create opportunities for educators to adjust their teaching to make it inclusive, and help individuals find others like them and forge a sense of community (e.g., via organisations like Raising Awareness of Developmental Language Disorder). Not diagnosing also gave rise to threats to identity formation, with students without a framework for their difficulties believing themselves to be ‘stupid’ and teachers or parents potentially underestimating children’s capabilities.

In our experience, many assume that a neurodiversity lens means SLTs should not give individuals a diagnosis of DLD, due to the term ‘disorder’ being a part of the diagnostic label. However, we argue that the benefits outweigh the risks. The potential empowerment associated with understanding and information about one’s language profile, functioning and learning needs are, in our view, consistent with a neurodiversity-informed perspective because the concepts of disability and disorder are encompassed within the bounds of human neurological and behavioural diversity. Further strengthening this perspective, McGregor et al. (2023) use the World Health Organisation International Classification of Functioning, Disability and Health to demonstrate that children with DLD can be characterised by both developmental impairments and developmental strengths. This paper found that severity of language impairment was not always predictive of functional participation and therefore a dimensional, or non-categorical approach to language impairment could actually be misleading. Another important consideration is that withholding the information that a person’s profile is consistent with a particular diagnosis can be seen as an

abuse of the power dynamics in the patient–clinician relationship. Taking the decision not to diagnose on a patient's behalf because there are few suitable treatments denies families the opportunity for self-advocacy.

Of course, the different diagnostic labels of 'autism' versus 'DLD' currently also differ in terms of the likely support packages children will be offered: children with autism are significantly more likely to receive support from schools and SLTs compared to children with DLD, regardless of children's language skills, literacy, cognitive scores or behaviour (Dockrell et al., 2019). Perhaps if a diagnosis of DLD was as likely to result in support, clinicians would not have the same reticence in diagnosing (indeed, clinicians in Harvey (2023) reported that they even felt it was unethical to give a diagnosis without the potential for support: *'I think ethically if you're saying to someone 'you've got a problem', and you're not then able to help, I don't see the point'*. Harvey, 2023, p.9). However, this presents a 'chicken and egg' problem: for this support to become available, it is important that children with DLD are appropriately diagnosed as such, in order for the needs for support to be properly documented to local authorities, health care services and education providers. Thus, not diagnosing is not a simple judgement about what is and is not a 'disorder': diagnosis has complex implications for both individuals' self-knowledge and wider service development. Appropriate diagnosis ensures that neurodivergent people are seen and services developed to support them, which we would argue fits with the neurodiversity movement.

Of course, a counter to the negative connotations that clinicians may fear families have about the diagnosis would be suitable research evidence documenting the strengths many children with DLD have. In the context of autism, understanding and celebrating autistic strengths has been an important part of building a more positive image of autism, challenging the stereotype that autistic people cannot live full and meaningful lives, when given the right support and understanding (e.g., see Urbanowicz et al., 2019). It has been good to see the emergence of research and scholarship focused on positive outcomes, strengths and resilient functioning in those with DLD in recent years, although, to the best of our knowledge, only a handful of studies have investigated these issues directly. Relational strengths and optimism about future achievements are emerging themes in this area (Lyons & Roulstone., 2018; Lloyd-Esenkaya et al., 2020).

Lifelong neurotypes need inclusive and accepting spaces

So far, we have set out our arguments that there are important differences between autism and DLD, which have

implications for how these two populations may benefit from the neurodiversity movement. However, perhaps a place in which DLD and autism converge is that they are both lifelong. Yes, some support and interventions can be positive, but the reality is that a person with DLD will never process linguistic input or use expressive language in a way that is comparable to the neuro-majority. In much the same way, an autistic person will be autistic for their entire lives. If we accept that in all likelihood, DLD is lifelong and can certainly be supported via SLT but not 'cured', then a neurodiversity-affirming approach provides a good megaphone through which to argue that we must make our spaces accepting and inclusive for people with DLD, because they are here to stay.

Indeed, much as in autism research, this viewpoint highlights that research that seeks only to understand the causes of DLD and potential treatments will never meet the needs of people with DLD. Here, we briefly consider the cases of mental health support, education and employment, spaces in our society that remain largely accessible in a limited way to people with DLD.

How to support young people with DLD to have good mental health is a documented area of research need (Hobson et al., 2022). Despite evidence that young people with language needs are greatly over-represented in mental health services (Hollo et al., 2014), there has been limited research into how accessible these services are for youth with language needs, or how to appropriately adapt interventions for mental health to meet the needs of young people with DLD. Access to mental health support is hampered by a lack of professional understanding regarding the nature of children's language needs; in one study that examined the experiences of parents trying to access mental health support for their children with speech and language needs, some parents had referrals to Child and Adolescent Mental Health Services turned down, because they were told to 'his problems would be fixed when his speech and language problems were fixed, so to sort out his speech and language' (Hobson et al., 2022; see survey data available on the Open Science Framework for quotation). This is a gross misunderstanding of childhood language disorders, which will never be 'sorted out' in such a manner, and illustrates the need for better professional understanding of language disorders amongst mental health practitioners.

Even if this initial barrier of accessing support was removed, this problem remains that the default support for mental health difficulties in mainstream health services is talking therapies. Talking therapies have been argued to be unsuitable for youth with DLD (Hobson, Kalsi et al., 2022). Indeed, these rely on individuals to be able to recognise and label their emotions, which we know young people with DLD struggle with (Hobson & van den Bedem, 2021). Given

that individuals with DLD struggle with oral language this likely excludes them from benefiting from most mental health supports offered. We lack the research evidence to know what else could work: a recent systematic review of play-based interventions for mental health difficulties found that in the last 20 years, there was no good quality evidence in children with DLD (Francis et al., 2022). Therefore, the problem remains; current mental health support services appear not to be inclusive spaces for individuals with DLD and the research evidence for alternatives is lacking.

Educational outcomes are impacted by DLD (Dubois et al., 2020). This is unsurprising, especially as most education is delivered orally, with the expectation of reading to access much of the curriculum, and students are largely assessed via written work. Language processes are thus integral to pedagogy. Despite the centrality of language to education, teacher awareness and knowledge of DLD are low. Glasby et al. (2022) found that teachers' self-ratings of their knowledge about DLD overestimated their capability demonstrated in their tasks. Concerning misunderstandings were also prevalent: 81.7% of teachers surveyed did not know that DLD persists into adulthood. Glasby et al. (2022) highlight that misconceptions such as these matter, as teachers who do not realise DLD is a lifelong condition may be more inclined to believe that a course of SLT intervention outside the classroom will lead to remediation in language problems, and thus teachers may not undertake appropriate adjustments in their classroom to help students access the curriculum. Poor understanding of DLD may also lead to stigmatisation and bias, including reduced expectations (Graham & Tancredi, 2019).

A neurodiversity-affirming approach to DLD in the classroom would call for better knowledge and awareness of the impact of children's language skills on their educational experience, and suitable adjustments that allow children with DLD to access the curriculum. While the role of SLTs is to help support teaching staff to adapt their teaching to children's needs, we would echo the sentiments expressed by Glasby et al. (2022) about why it is important for teaching staff themselves to have adequate knowledge about DLD: without it, children are at risk of being missed, as their language problems may go unnoticed and they may never be referred to an SLT for assessment, and/or misconceptions about DLD impact educational practices.

It is important to highlight that youth with DLD are not educationally doomed: though fewer, a significant number of youth with DLD progress to higher education (Conti-Ramsden et al., 2018), though our understanding is based on a limited number of studies, and we lack good data about attainment and dropout rates across the education sector. A recent autobiographical study documented the experiences of a woman with DLD who

had completed two bachelor's degrees, and a master's in speech and language therapy (Orrego et al., 2023). Furthermore, research has not documented a strong link between the level of language problems and educational or employment outcomes (Dubois et al., 2020): this would suggest that other factors, such as levels of support, might have a bigger role in determining outcomes than the extent of the language problems themselves. Indeed, historically it was assumed that autistic people would not arrive at university, but around 2.4% of the current UK higher education population are estimated to be autistic (MacLeod & Green, 2009), and increasing consideration is being given to how to help autistic students succeed: could such help be expanded to students with DLD?

With regard to employment, levels of employment for individuals with DLD have been reported by some to be broadly comparable with those without DLD (Conti-Ramsden et al., 2018), though the type and frequency of work does differ; those with DLD are more likely to work part-time and be in non-professional occupations. A systematic review on outcomes for adults with DLD examined nine studies drawn from four cohorts with regard to employment experiences (Dubois et al., 2020). The findings paint a complicated picture: not all studies reported an increased rate of unemployment amongst DLD groups, but there were issues in the job search process, longer period of employment, and the long-term picture that appeared to suggest that those with DLD do not progress to higher levels of pay, but remain in low-wage jobs. However, it is also important to note that the cohort studies included in the systematic review include individuals with DLD who had their language problems identified in childhood, and who had, to varying degrees, had some support for their difficulties. Many youths with DLD do not get their needs identified or supported, and we can expect the true picture of employment amongst those with DLD to be much poorer.

Research regarding knowledge of DLD in the workplace, and how to support people with DLD in work, is very limited, but studies of managers show that, akin to research in education, awareness of DLD lags far behind awareness of other conditions such as ADHD, Autism Spectrum Disorder and dyslexia (de Lemos et al., 2022). Language problems, especially when undetected and unsupported, are likely to negatively impact work, given the need in many jobs to keep up with conversations in meetings, take notes, read and produce reports, follow complex instructions, and maintain suitable social relationships with colleagues. Yet, many managers report that there are no known strategies in place to support those with DLD at their work (de Lemos et al., 2022). This may in part help explain why those with DLD appear not to progress in their careers to higher earning jobs.



In the context of autism, organisations to support autistic youth and adults have explicit aims to improve opportunities for autistic people (e.g., the Autism at Work programme, supported by the National Autistic Society in the United Kingdom). At present, many organisations for DLD remain relatively focused on supporting children and young people, rather than working-age adults. DLD, like autism, is covered by employment legislation such as the UK Disability Act (2010): but as DLD remains under-recognised, individuals will not be able to seek support under such legislation. Stronger links with the neurodiversity movement could help youth with DLD to more fully enjoy the rights they have under such laws.

CONCLUSIONS AND NEXT STEPS

Our overarching aim in this discussion was to consider what the neurodiversity movement currently means and could potentially mean for the DLD community. This includes potential benefits and opportunities, but also important considerations, and we have highlighted where DLD and other neurodivergences differ in relationship to the application of neurodiversity-affirming approaches. We pose that DLD should be considered from a neurodiversity-informed perspective, which offers a means to enact neurodiversity-affirming practice through framing the need for spaces and services to be inclusive of children and people with DLD. We caution however that neurodiversity and DLD cannot be approached in exactly the same manner as neurodiversity and autism: in particular, DLD and autism are in different places in terms of their public awareness and understanding, at least for the present.

Our aim in this piece was not to provide answers. We sought to surface contradictions, tensions and unanswered questions in relation to DLD and neurodiversity. In doing so we hope to stimulate conversation and scholarship on the application of a neurodiversity lens to research and practice for DLD. Our reflections leave several questions and tensions that need to be resolved, via research and with meaningful discussion with clinicians, practitioners and the DLD community. We summarise some of these here:

Terminology and its impact on care. Discussions with clinicians and research studies (Harvey, 2023) indicate that SLTs are already concerned about the application of a DLD diagnosis in some contexts. However, we lack the research evidence to inform practice about when and why a diagnosis of DLD is helpful and appropriate. What is the impact of ‘disorder’ in DLD? Why do some clinicians choose not to use this term, and what are the implications for families? What are the benefits and harms to framing DLD as a difference and not using ‘disorder’? How are people’s

perceptions and professional judgments affected by these different terms (e.g., might individuals be less likely to receive support if not given an explicit diagnosis of DLD)?

Support versus interventions for DLD, the short term and the long term. Research into interventions to help improve language functioning is certainly important, and desired, judging by research priority exercises. However, neurodiversity paradigms would draw our attention away from interventions focussing on change at the level of the individual, and ask us to examine possible changes at the level of our spaces and services—how can we change *those* to make language needs less of a barrier to accessing help, thriving in education and participating in society? The neurodiversity approach reminds us that a person’s neurotype is not up for being ‘fixed’ and that long-term support is necessary.

Identification of DLD strengths. Some of the success of the neurodiversity paradigm in autism research and practice can be attributed to the identification of autistic strengths; supporting the argument that people with diverse neurotypes have a diverse range of strengths and challenges. The identification of strengths has, in some ways, served as an incentive to make spaces more accommodating for autistic people, as the neuro-majority recognise the value of autistic strengths within these spaces. The literature on DLD strengths is extremely limited. The neurodiversity movement provides a framework for further investigations of DLD strengths, which may serve as a catalyst for education, health, and workspaces to be more inclusive of individuals with DLD.

Participation of individuals with DLD in shaping the neurodiversity movement. Undoubtedly part of the power of the neurodiversity movement is the organising and amplifying of neurodivergent voices. In addition to changing practice, within research the neurodiversity movement argues for the re-prioritising of autistic knowledge in autism research, valuing first-hand autistic experiences (Pellicano & den Houting, 2022). However, the very nature of DLD makes this a challenge: we need to hear from children, young people and adults with DLD about how they see themselves, what their experience is like, and what they want. What does a positive DLD identity look like? What would they like the goals of interventions to be? There may be some useful insights regarding the experiences of autistic people who are non-speaking or those with co-occurring intellectual disabilities. Recent qualitative research reports that some families who have children with these needs have felt excluded from broader advocacy movements and research conversations (Asbury et al., 2023). Are there lessons to be learned here about how to approach neurodiversity advocacy for DLD? Advocates, clinicians, educators and researchers should not assume people with DLD will not

be able to share their insights, as challenged by a recent perceptive and rich first-person account of being an adult with DLD (Orrego et al., 2023). Whilst there has been substantial progress over the past 10 years, resulting in an emerging body of literature demonstrating how participatory approaches to DLD can facilitate inclusion in research, service development and practice (Lyons et al., 2022; Gallagher et al., 2019; Janik Blaskova & Gibson, 2021), more work needs to be done. A recent qualitative study investigating approaches to implementation of the internationally agreed recommendations on DLD terminology and diagnosis demonstrated that centring voices of those with DLD is not currently prioritised in many service improvement efforts (Gallagher et al., 2023). A neurodiversity-affirming approach shines a light on the need to build on these advances. It is our hope that, although the neurodiversity movement is in its infancy with respect to DLD, the whole DLD community will recognise that the time to shape the movement is now. We hope researchers, clinicians, and individuals with DLD and their families will seize this opportunity to reframe deficit-oriented perspectives and to maximise the quality of life for the DLD community.

A note about the authors' positionality

Hannah Hobson is a psychology lecturer at the University of York with 10 years of experience conducting research with children with DLD and autistic children and adults. She is particularly interested in mental health and social outcomes. Her interest in this topic comes from working with both autism and DLD in her research.

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Jenny Gibson is a Speech and Language Therapist with 15 years' experience in working with autism, DLD, and other language difficulties in NHS settings and in independent practice. She is Professor of Developmental Psychology at the Faculty of Education, University of Cambridge. Her interest in the topics in this paper comes from her clinical and research experience as well as from lived experience of neurodivergence.

CONFLICT OF INTEREST STATEMENT

The authors have no conflicts of interest to declare.

DATA AVAILABILITY STATEMENT

Data sharing not applicable to this article as no datasets were generated or analysed during the current study.

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