

HOW I (2): PHONOLOGY NEVER TOO SOON TO START

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WHEN A CLIENT MAKES PROGRESS, IT IS DIFFICULT TO KNOW IF OUR THERAPY MADE A DIFFERENCE – AND IF SO, WHAT ASPECT(S) OF IT WERE CRUCIAL. HEATHER SAUNDERS EXPLAINS WHY SHE BELIEVES THE NEW EDITION OF THE NUFFIELD DYSPRAXIA PROGRAMME WAS THE KEY TO IMPROVEMENT MADE BY CAELAN, A PRESCHOOL CHILD WITH AUTISM AND VERBAL DYSPRAXIA.

The Nuffield Dyspraxia Programme is well-known in the UK as a resource for treating children with dyspraxia. The new 3rd edition (NDP3) has been further developed. This article is an account of how I used it with Caelan, a preschool child with autism and verbal dyspraxia.

The NDP3 comes in five ring binders. The first is a therapy manual that includes research-based information on how the psycholinguistic model can be applied to indicate where breakdown occurs in speech processing. The second binder contains the assessment materials. The final three binders house the master sheets of therapy materials, which are photocopiable.

Some of the pictures for the vowels have been changed in a continued effort to make them more appropriate to the sounds they represent. For example, /eɪ/ is now an angel instead of Mr. A. and /ʌ/ is now an umbrella instead of a rocket. Two boxes of therapy cards accompany the ring binders.

I like the way the new programme incorporates the psycholinguistic research. I also like the fact that the picture pages are laid out in grid boxes that are the same size, rather than odd-sized dividing lines.

Previously, I had dipped into the programme with children with phonological delay and disorder / dyspraxia, even those with very little expressive language. I had never considered using it with an autistic child, but Caelan's autistic features were reducing. He was becoming an unusually compliant child, and it seemed as though it was likely to meet his needs.

Caelan's parents asked me to see him for private speech and language therapy when he was just turned two. The family had returned to live in England from the United States, where Caelan was born. Caelan had already been diagnosed with autistic spectrum disorder. At the time of writing, he is aged 4;5. His sessions with me have been once a week for 45 minutes to an hour.

Soon after the start of my involvement, Caelan was assessed by Maggie, one of the local NHS specialist speech and language therapists. We have liaised regularly, she working with Caelan initially at his home and then at his nursery, whilst I have always seen him at home. We have usually agreed to each work on a different aspect of Caelan's needs at any one time. Maggie introduced the Picture Exchange Communication System (PECS) to Caelan at nursery. Phase one deals with 'how to communicate' by exchanging pictures for a desired object. Caelan quickly progressed through Phases I to III, where the concept of choice is introduced.

Like Maggie I am Hanen® trained, and my input initially focused on joint attention, turn-taking, eye contact, following Caelan's lead, and other principles of the Hanen® More Than Words Programme (Sussman & Lewis, 1999). These sessions were sometimes not very productive, as Caelan's social communication disorder resulted in him using many avoidance strategies! He would throw tantrums, for example, or become obsessed with a favourite toy or go to the corner of the room and face the wall.

Expressive language restricted

As Caelan's interaction skills developed, I began focusing more on his verbal comprehension. I used the Derbyshire Language Scheme (Knowles & Masidlover, 1982), and supported Caelan with Makaton signing. At 3;0, Caelan's verbal comprehension

was at a 2-year level, as assessed using the Reynell Developmental Language Scales III (Edwards *et al.*, 1997). He was beginning to have some success at responding to requests containing three information-carrying words. However, his expressive language remained restricted to babble and a handful of unclear words. Interestingly, Caelan was a prolific babbler, using a wide range of phonemes, and I felt it was surprising that his expressive language had not developed more quickly.

I had suspected for some time that Caelan might have verbal dyspraxia. He had a very restricted repertoire of consonants in spontaneous speech and many consonants were omitted. His vowels were distorted, his oromotor skills were poor and he had rather flat intonation. His attempts to speak were slow and laboured.

I have never adhered to the traditional premise that it is too soon to begin work on speech sounds with a child with limited expressive language. If a child has reasonable verbal comprehension and is trying hard to communicate but is unintelligible or only partially intelligible, I have always felt that it is worthwhile helping him to say what he can say clearly.

I therefore began to introduce a few of the NDP pictures (from a previous edition) when Caelan was 3;2. I always find that children benefit hugely from having an action and a verbal descriptor assigned to the picture / sound card. For example, with the picture of a lolly for /l/, I also make an action with my finger to imitate licking a lolly, and describe it to the child as the 'licking lolly sound'. Firstly, I set out three to five pictures, make the action for each picture and tell the child the sound that goes with each picture. My first aim is for the child to be able to identify a picture when I make its sound and action. Next, I aim for the child to identify a picture when I only make its sound. Then I find out which sounds the child can imitate in isolation. Later, it is possible to prompt the child to produce the sound using a variety of modalities – that is, by showing the picture, making the action or describing the required sound, or a combination of these. I work on vowels in exactly the same way and then CV, VC, and CVC strings can be tackled.

This process is similar to Cued Articulation (Passy, 1993) and the Lindamood Programme (Lindamood & Lindamood, 1998). In my experience, Cued Articulation is probably most useful for delayed speech or less severe disorder, whilst the Lindamood Programme lends itself particularly to helping children whose literacy difficulties are linked with their poor phonological awareness. I would choose to use the NDP3 with children with severe phonological disorder or dyspraxia, as I feel it offers sufficiently graded steps for even the most severe of cases.

As Caelan had no interest in the Nuffield pictures, I discontinued them shortly after my initial attempts. I had mentioned to Caelan's father that I suspected a phonological disorder, and that we would eventually need to work on speech sounds. He had seen me introduce the Nuffield pictures previously, and knew the name of the programme. From that, he took the initiative and researched this further. A keen parent, the next thing I knew he had made an assessment appointment for Caelan at the Nuffield Hearing and Speech Centre in London. I had previously treated another child with dyspraxia who had subsequently been assessed at the Nuffield Centre, and I knew their reports to be very helpful. Following Caelan's appointment, a diagnosis of oromotor and verbal dyspraxia was confirmed. Caelan was by then 3;5.

Two months later, I began using the new NDP3 with Caelan, following the advice and recommendations of the Nuffield Centre's specialist speech and language therapist. I liaised with Maggie, his NHS speech and language therapist, and we agreed that she would focus on language and communication whilst I focused on speech. She continued to see Caelan weekly at nursery and developed his use of PECS on to Phase IV which uses the sentence strip "I want. ..". She also worked on greetings and pretend play, and had a student on clinical placement for some of the time, who undertook some of this work under supervision.

Room for being innovative

The Nuffield report contained some detailed recommended aims of therapy to target oromotor skills, single sounds, single sound sequences and CV words. I had liaised with a Nuffield therapist on the telephone and found her to be very generous with her time and advice. In addition, the NDP3 Therapy Manual contains detailed steps of how to work through the programme. I would like to point out here that with the NDP3, as with any programme, there is still room for being innovative and creative according to the needs of the child. I don't ever want to lose my ability to 'think on my feet' if a 'programme' doesn't seem to be working as prescribed!

I have followed the programme fairly faithfully, building up the recommended stages from single sound imitation to repetitions of the same sound to alternating pairs

and triplets of sounds. I started with consonants and then the vowels. I also included therapy material from the NDP3 to target Caelan's oromotor and prosodic difficulties. The inclusion of these therapy materials in the programme is a welcome addition.

Caelan took to the programme like the proverbial duck to water. Although features of social communication disorder were less obvious than previously, Caelan still liked routine and predictability. The routines of practice and therapy therefore worked well for him.

A typical session might begin with revision of auditory identification of the individual consonant, and next we would go over the homework from the previous week. This might be Caelan saying alternating consonants as he tracked his finger along an NDP3 work sheet with a caterpillar, one sound per caterpillar segment. Next I would introduce new work, which might incorporate a lotto game or a pairs game, perhaps to work on VC words. At the end of the session, Caelan was allowed the bag of his favourite character toys that he knew I always carried with me in my case. Caelan was then free to 'escape' into fairly ritualistic pretend play as a time of relaxation. He was surprisingly compliant in joining in the activities, in anticipation of the reward of the toys.

At the suggestion of the Nuffield Centre specialist speech and language therapist, I had tried to find toys to use instead of the NDP3 pictures. This proved to be impossible, and so it was important to make the materials visually pleasing. I would invest time in mounting the materials on coloured card, making them into games and laminating them. This also made them durable. Perhaps future editions of the Nuffield Development Programme might include a set of toys to represent the individual consonants and vowels. I am sure this would provide an invaluable attraction for children.

Sound system developed rapidly

Within just three months of using the NDP3, Caelan's expressive language had surged ahead. He went from using an occasional two word phrase to regularly expressing himself in three word phrases. His vocabulary grew at an enormous rate. Within a further three months, he was using five and six words phrases, albeit with immature syntactical structure. Quite significantly, his speech sound system developed rapidly (see table 1 for transcription of some single word samples). It is this progress with his speech sound system that makes me think the phonological therapy 'unlocked' his expressive language.

Caelan's father was initially the one to carry out the daily home practice activities. After five months of implementing the programme, I liaised with two members of the nursery staff, and arranged for them to come and observe one of my sessions with Caelan at his home. I explained the NDP3 to them and showed them some of the materials. They were very enthusiastic, and have continued implementing practice activities daily with him during the week, with his parents practising with him at other times.

Five months after starting the programme, I was able to administer the Pre-School CELF (Wiig *et al.*, 2000) with Caelan, aged 3;11. His receptive standard score was 67, his

expressive standard score 79. A recent reassessment using the Pre-School CELF at age 4;5 gave Caelan a receptive standard score of 92 and an expressive standard score of 87.

Now, some 11 months after beginning the NDP3, I have been able to use a variety of other therapy resources to target Caelan's needs in phonological development, for example Black Sheep Press phonology resources and Webber's Jumbo Articulation Drill Book on CD-ROM. Webber's resource contains some American vocabulary that often has to be omitted, but I like it because I can print materials directly from my computer in colour.

We have worked through the consonant clusters and Caelan is beginning to adopt these into his spontaneous speech. He continues to distort some vowels. Caelan needs continued work on multisyllabic words, and I am using the NDP3 materials for this. He speaks slowly and deliberately, and this helps intelligibility.

Caelan has made remarkable and unexpected progress with speech sound development. His expressive language skills have progressed so well now that he relies less and less on PECS. I would not hesitate to use the NDP3 with children as young as two, even if they have almost no expressive language, provided that they have reasonable verbal comprehension and are actively trying to communicate. The systematic way that consonants and vowels are built up gradually to be incorporated into words through graded exercises makes success almost inevitable. I have had other success stories since and would encourage others to have a go!

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Resources

- Black Sheep Press Phonology resources, see www.blacksheep-epress.com
- Makaton Core Vocabulary, see <http://www.makaton.org/resources/resources.htm>
- Nuffield Dyspraxia Programme 3, Nuffield Hearing and Speech Centre available from <http://www.ndp2004.org/>
- Webber's Jumbo Articulation Drill Book on CD-ROM is available from companies such as Taskmaster, www.taskmasteronline.co.uk. [SLTP](#)

Table 1 Single word transcription

Target word	5 months before start of programme	3 months after start of programme	7 months after start of programme
man	mæm		
horse	ɑs		
up	ʌ		
open	əu'ə		
bun	dʌ		
duck	dʌʃ	dʌk	
brush	dʌʃ	dʷʌʃ	bʷʌʃ
orange	oɪʒ	owɪz	owɪndʒ
gloves		dʷʌʃz	gəʌvz
green		gwɪjə	gwɪn
elephant		e'ə'wə	e'əfənt
drum		dʷʌd	dʷʌm
flower		ʔodə	fɪwəʊlə
basket		bʌsɪ	bʌksɪt
triangle		twai'æmbə	twaiŋgʊ
tomato		təpə	təmaɪbəʊ
strawberry		dʷɪbwi	ʃəwɔbwi
spider		sə'ə	paɪdə
square		swa'i	sweə

REFLECTIONS

- DO I SELECT THERAPY PROGRAMMES THAT WILL SUIT BOTH A CLIENT'S CLINICAL NEED AND LEARNING STYLE?
- DO I INVESTIGATE THE POTENTIAL OF NEW ASSESSMENTS AND THERAPY MATERIALS?
- DO I TAKE ADVANTAGE OF THE SUPPORT AVAILABLE FROM EXPERT TERTIARY SERVICES?