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Early Intervention for Stuttering: Similarities and Differences Between Two Programs

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Abstract

In this paper, two proponents of different approaches to early stuttering discuss how they would manage a hypothetical case of stuttering in a preschool-age girl. Two evidence-based approaches are discussed: Palin Parent-Child Interaction Therapy and the Lidcombe Program. This paper arose from an oral discussion session held at the International Fluency Association Conference in Tours, France in 2012.

The first author presents the case details of the child, Lea, and poses questions to the other two authors. The second two authors recommend differing intervention programs, providing the rationale and evidence supporting their recommendations. The paper is an example of evidence-based practice in action—clinicians using their expertise and knowledge to evaluate and apply the empirical evidence, while taking into account the client's needs, values, and circumstances.

The paper concludes with a joint reflection on the similarities and differences between the programs.

There is now broad consensus that intervention for stuttering should occur during the preschool years (Bloodstein & Ratner, 2008; Guitar & McCauley, 2010). Although it is known that many children recover from stuttering without such intervention (Yairi & Ambrose, 2005), delaying intervention until children are older is likely to decrease efficacy.

There are a number of treatments for preschool children who stutter reported in the current literature (see Bloodstein & Ratner, 2008; Guitar & McCauley, 2010); however, most do not have any supporting research evidence. Two treatments for preschoolers who stutter that are supported by evidence of efficacy are Palin Parent Child Interaction (Palin PCI; Kelman & Nicholas, 2008) and the Lidcombe Program (Onslow, Packman, & Harrison, 2003). Both are supported by clinical research (for example, see Jones et al., 2005; Kingston, Huber, Onslow, Jones, & Packman, 2005; Lattermann, Euler, & Neumann, 2008; Lattermann, Shenker, & Thoradottir, 2005; Lewis, Packman, Onslow, Simpson, & Jones, 2008; Millard, Nicholas, & Cook, 2008; Millard, Edwards, & Cook, 2009) which is a critical component of evidence-based practice. Evidence-based practice is the use of experience and expertise to interpret and apply best

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empirical evidence according to the clients' needs and values (Straus, Scott Richardson, Glasziou, & Haynes, 2005).

Interestingly, however, these two interventions differ markedly in their procedures. Palin PCI was developed in the UK and the Lidcombe Program was developed in Australia and they are widely implemented in their countries of origin. In a recent article (Onslow & Millard, 2012), proponents of each of these treatments (Millard is also an author on this paper) engaged in an exchange about them. Our aim in the current article is to further explore the similarities and differences between the two interventions and we do this by discussing how the two treatments would be implemented with a hypothetical case of a child who starts to stutter during the preschool years.

The format of this article is based on a presentation given by the three authors at the *7th World Congress on Fluency Disorders*, Tours, France, in 2012. We first present the case, Lea, as compiled by first author Boucand. The other two authors, Millard and Packman, then respond in turn to questions that are likely to be asked by a speech-language pathologist (SLP; known in the United Kingdom as speech and language therapist and in Australia as speech pathologist) who is undecided about which treatment to use with her. Millard is a therapist at the center where Palin PCI was developed and Packman is a developer of the Lidcombe Program. We finish with a discussion of the two approaches, outlining their differences and similarities.

The aim of this collaborative paper is to provide insight into the implementation of these two evidence-based approaches in a clinical context. The authors hope that the paper will provide understanding into (1) why each contributor would select their particular therapeutic approach, (2) how they anticipate it would be implemented within the given scenario, and (3) the similarities and differences underpinning those decisions, methods and expected outcomes.

Lea

Lea is aged 4 years 3 months. Her mother works in a large laboratory and her father is sales director. Her birth was normal and there are no siblings. She is in her first year at preschool. A nanny picks her up her from school at 4:30 p.m., gives her a bath, and stays with her until mother arrives home at 6.30 p.m. Her father arrives home at around 7 p.m.

About 1 year ago, Lea and her mother visited the preschool to see what it was like. Lea became distressed when the director said that children were not allowed to have pacifiers at preschool and she started stuttering the next day. Hence, she has been stuttering for around 1 year. There is no history of stuttering in the family.

Lea's parents are very concerned and have seen an SLP who counseled them for a few sessions. However, there has been no change in Lea's stuttering. The SLP advised them to reduce time pressure and to help Lea finish her sentences rather than asking her to repeat.

Lea's mother reports that they think Lea is aware of her stuttering but is not particularly concerned about it. Her stuttering is severe, being 7–8 on the 10-point Lidcombe Program severity rating scale. In this scale, 1="no stuttering", 2="extremely mild stuttering" and 10="extremely severe stuttering". She repeats syllables at the beginning of sentences and has poor eye contact when talking.

Lea's mother provided the following description of her. She reported Lea to be obsessive, perfectionist, and shy. She is quite distractible and does not respect the rules when playing a game. She is generally advanced for her age. She likes talking, her language is quite advanced and she sometimes corrects her grandfather when he talks. Lea's stuttering is worse when she is emotional, fearful, or tired and when she is telling a long story. However, her mother reported that Lea's stuttering improves when she spends time with her and she is relaxed.

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Questions

Question 1: Is Therapy Indicated for Lea?

Millard, Palin PCI. From the information that we have, we can see that there is support for intervention with Lea. There are some factors that may suggest that she is at increased risk of persistent stuttering, such as the length of time she has been stuttering (Yairi, Ambrose, Paden, & Throneburg, 1996) and that this is still severe. She also has advanced language skills (Watkins & Johnson, 2004), which may place additional demands on her ability to be fluent (Starkweather & Gottwald, 1990).

Aside from the factors that might indicate a risk of persistence, there are those that indicate that the stutter is having an impact on both Lea and her parents. Her avoidance of eye contact when speaking could suggest that she is aware and reacting negatively to her talking, although this might also be an indication of reduced attention skills and/or a feature of her shyness. Most importantly, her parents are very concerned and seeking support.

There are also indicators that the stutter could have a negative impact on Lea's communication and her social development over the longer term. Her reduced eye contact does not support the development of her communication skills (reducing her ability to attend, listen, and take turns) and her ability to engage and maintain her engagement with others. Lea is also described as being shy, a trait that is associated with socially withdrawn behaviors and reduced peer relations (Coplan, Rose-Krasnor, Weeks, Kingsbury, & Bullock, 2013). Any tendency to avoid social interactions, speaking, or stuttering may contribute to the development of more covert stuttering behaviors, reduced self-esteem and confidence, and increased impact of the stuttering over the longer term.

Packman, Lidcombe Program. Therapy is definitely indicated for Lea. As far as the Lidcombe Program is concerned, this should start as soon as practicable, for the following reasons.

First, Lea has been stuttering for a year and, as her stuttering has apparently not remitted at all during this time, there is no indication that natural recovery is occurring. Evidence-based guidelines for intervening with the Lidcombe Program state that waiting for 1 year after onset to watch for natural recovery is unlikely to decrease a child's responsiveness to the program but that the program should be started earlier than this if stuttering is having a negative impact on the child (see Onslow et al., 2003).

Second, Lea will soon be attending "big school" and guidelines for the Lidcombe Program also state that Stage 1 of the program should be completed before a child goes to school.

Third, as Lea's stuttering is severe, it is likely that she will take in excess of the median of 16 weeks to complete Stage 1. It is known that children with more severe stuttering take longer to complete Stage 1 of the Lidcombe Program than children whose stuttering is less severe (Kingston et al., 2003). Hence, in order for Lea to complete Stage 1 before going to school, the program should be implemented as soon as practicable

Fourth, Lea's parents are concerned about her stuttering and it is likely that Lea is already suffering social penalty from her peers for her stuttering.

Question 2: Which Therapy Would you Recommend for Lea? Describe it.

Millard, Palin PCI. I would recommend six sessions of Palin Parent-Child Interaction Therapy for Lea, her parents, and her nanny. The details of the assessment process and the therapy methods can be found in the manual authored by Kelman and Nicholas (2008).

In summary, the process begins with a detailed assessment, which includes an assessment of Lea's fluency, language, and communication skills and an interview to explore her level of awareness, insight of the stammering, and the impact that it has on her. Both her parents

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would also attend to complete a detailed case history. The information from these assessments would be used to understand the physiological, linguistic, emotional, and environmental factors that influence her fluency and how she manages moments of stuttering in the short- and long-term.

While there are overarching principles and methods consistent throughout every PCI programme, there will be variations in what is included within each therapy package according to the child's strengths and needs. Using the summary chart (Kelman & Nicholas, 2008, Appendix 3), the therapist is able to consider which of the components are likely to be most relevant. In the first instance, interaction and family strategies are explored. At the start of therapy a 5-minute play time known as 'Special Time' is introduced for each parent. It is recommended that these sessions of Special Time occur at home with the child between three and five times per week. This is a time when the parent focuses on the child exclusively, practices the interaction target they have selected, and notices the impact that this has. The interaction target is identified using video feedback to identify behaviors that would be considered helpful for the child's fluency and communication development. Both parents (unless a single parent family) attend the therapy.

The therapy sessions are followed by a 6-week consolidation period and ongoing review and evaluations of progress take place over a 1-year period. For some children, it will be necessary to introduce more direct fluency strategies after the initial indirect components have been implemented.

Packman, Lidcombe Program. I would recommend the Lidcombe Program for Lea. It is described in a number of publications (for example, Onslow et al., 2003), and there is a comprehensive guide for SLPs on how to implement the program. The latter, along with score sheets, is downloadable from the web site of the Australian Stuttering Research Centre (http://sydney.edu.au/health-sciences/asrc/health_professionals/asrc_download.shtml).

In conventional face-to-face delivery of Lidcombe Program, the parent (usually the mother) and child attend the speech clinic once a week. During these visits, the parent is trained to administer the treatment at home. The treatment is operant in nature. The parent gives verbal feedback (verbal contingencies) for stutter-free speech, and occasionally for stuttering, during conversations with the child in their everyday environment.

At the start of Stage 1, this occurs for a short period each day, usually lasting around 15 minutes. The parent typically controls the conversation by engaging the child in an activity that involves conversational interaction. The child is not instructed to alter speech production in any way. Once stuttering starts to reduce in everyday situations, the parent gives contingencies during everyday unstructured conversations.

During the weekly clinic visits, the SLP monitors the parent's delivery of the treatment, whether or not the child is enjoying the treatment, and whether or not the child's stuttering is reducing. The parent and SLP problem-solve together during these visits to adjust the therapy as required. The SLP also would take appropriate action if the child is receiving social penalty from peers for the stuttering and/or the parent is distressed by the child's stuttering.

The parent records the child's stuttering severity for each day on the 10-point Lidcombe Program scale. These measures form the basis for adjusting the treatment and for deciding when stuttering is low enough to move to Stage 2 of the program. In other words, there is no set time period for treatment across all children. The aim of Stage 2 is to maintain the child's low level of stuttering over time.

Question 3: Why Would This Program Be Appropriate for Lea?

Millard, Palin PCI. Lea is not overtly concerned about her stutter and does not yet appear to be trying out her own direct fluency strategies and so a direct fluency modification

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program would not be indicated as the first step in the therapy process. However, her parents are very concerned and seeking support with how to help her with her talking.

Palin PCI is appropriate (Kelman & Nicholas, 2008) and effective for children of Lea's age (Millard et al., 2008; Millard et al., 2009). The program can be adapted to include the components that might be considered to be most relevant for Lea's needs.

Packman, Lidcombe Program. It is appropriate to consider intervening with the Lidcombe Program with Lea, as she falls within the age group with which the program has been trialed. In a randomized controlled trial with preschoolers (Jones et al., 2005), the program was shown to have an effect on stuttering after 9 months that was greater than that of natural recovery.

The fact that Lea's mother reports that Lea enjoys spending time with her bodes well for the Lidcombe Program. It suggests that both mother and Lea would enjoy the daily treatment times that are required for the program.

However, a difficulty that may be encountered is that Lea's parents do not have a lot of time to spend with her, given their long working hours. Hence, they may find it hard to find the time to conduct the treatment sessions with Lea each day. It would likely require considerable problem solving with the SLP to find a way to make this possible. If the family situation cannot be adjusted to accommodate the daily treatment sessions, the family may need to consider a different treatment.

Question 4: Which Aspects of Your Program Would Be Most Relevant or Important to Take Account of for Lea?

Millard, Palin PCI. Considering the factors that are significant in relation to Lea's stuttering within the four factor framework will help to highlight those aspects of the Palin PCI program that would be most relevant for her. It would not be anticipated that each of these would be covered in the first six sessions, some may be of higher priority for the family than others and also working on one can have an impact on others.

Physiological factors

- Lea is more fluent when she is relaxed. Special Times are at time when Lea is likely to be more relaxed, the focus is on the play rather than the speech and her parents may be encouraged to identify strategies that facilitate a relaxed play session.

- Lea stutters more when she is tired, so within therapy we would be looking for ways to reduce tiredness (e.g., discussing and problem solving any bedtime or sleeping issues) and/or ways to reduce the demands on her when she is tired (e.g., building in rest-times or quiet activity times during the day).

Linguistic factors in Palin PCI

- Lea has advanced language skills;

- Lea likes to talk;

- Lea stutters more when using more complicated, lengthy, and perhaps more abstract language.

Viewed within a Demands and Capacities framework (Starkweather & Gottwald, 1990), it would seem that increased demands on Lea's linguistic system are exceeding her capacity to be fluent and that there are times, for instance when telling a long story, when she is exceeding or at least reaching the boundaries of her linguistic capacity. We also know that some children are more likely to stutter on longer more complex utterances (Yaruss, 1999) and so helping Lea to reduce the demands on her language would be helpful. During Special Time, the conversation is

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salient to the topic, parents can focus on modeling and developing good turn-taking skills and pausing more to allow increased processing and formulating time within discussions.

The therapy does not seek to restrict Lea's linguistic development and there is evidence that this will continue to progress with this program (Millard et al., 2009). The aim is reduce the internal and external demands for linguistic complexity for the purposes of encouraging and establishing fluency.

Emotional factors in Palin PCI. Within PCI, we think it is important to consider the child's temperament, reactivity, and ability to regulate their emotions, as part of the therapy. We can see from the case history that Lea is described as being:

- sensitive generally and in relation to speech errors, as indicated by her correction of her grandfather's speech;

- someone who sets herself high standards with high expectations of what she should be able to do; and

- shy.

The combination of setting herself high standards, having high expectations of herself, and a sensitivity to mistakes may mean that Lea will be more sensitive and critical about her own dysfluencies, either now or in the future. Allowing for errors, encouraging parents to be "models of imperfection," noticing what is going well, mitigating against all or nothing thinking, and developing resilience will all enable Lea to develop her ability to tolerate errors so they are less significant in terms of the impact that they have. Lea is also described as shy and so she will need to develop her confidence generally and in her ability to communicate in order to continue to communicate with others. These are long-term targets that can be influenced by the various components of Palin PCI.

Environmental factors in Palin PCI. Lea lives in a busy home. There is evidence that Lea's mother is already aware and has implemented some strategies that she has found to be helpful. Her mother has noticed that reducing time pressure has been helpful and so therapy may involve considering ways of doing more of this. We can see from the case history that Lea's fluency increases when she spends time with her mother and so encouraging this by using it as the basis for therapy (i.e., Special Time) and extending it to include her father and nanny, would seem to be appropriate.

Both parents work long hours, which might have implications for their ability to attend and carry out any therapy. Therefore, it would be important to consider the timing of therapy. Lea has a nanny caring for her for a significant part of the day and so she should be included in the therapy process.

Summary of targets for Lea's therapy in Palin PCI

Interaction strategies in Palin PCI. There are a number of interaction strategies that might be helpful for Lea, which would be introduced through Special Time. Interaction targets are identified by asking the parents to view a video recording of themselves playing with the child. From the video, each parent would be asked to identify behaviors that they are doing that are helpful, why they would be helpful for Lea, and one thing that they could do more of.

From the information that we have, it might be anticipated that the following interaction targets for the parents might be helpful:

- reducing the complexity of their own language. This would provide a less complex model for Lea, reduce the internal and external demands on the linguistic system, facilitating the fluency;

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- matching their speech rate to Lea's and/or following Lea's lead may help them to tune in to the rate and pace of life both within and outside special times,;

- providing a good model for eye contact, reinforcing Lea's eye contact may also be relevant.

Interaction therapy can be helpful to increase attention and these short playtimes can be used to gradually increase attention to an activity or task.

Family strategies in Palin PCI. There are a number of family strategies that would be appropriate for this family.

Praise (Faber & Mazlish, 1980) is a structured method of giving praise, with the parent describing the specific behavior noticed and using an adjective to give the child a positive label (e.g. "Lea, you have put your pacifier away, that is very grown up of you").

- Lea's fluency is reduced when she is tired, so considering ways in which that could be reduced might be helpful. This would need further exploration, but if her parents are late home from work, it would be understandable if Lea is staying up a bit later in order to spend time with them. If so, we would problem solve with the parents about how they might address this, e.g. coming home from work earlier on alternate days or Lea having an afternoon rest.

- Finding opportunities to acknowledge and accept their own mistakes, sending the message that errors are expected, normal and we can manage them. For example, with the grandfather—"yes Grandad did get a bit jumbled but I still understood him, we all get a bit stuck sometimes". This could also lead into a conversation about stuttering or getting stuck—being open about stuttering and acknowledging when talking is tricky gives her the vocabulary and opportunity to talk about it if and when she wants to.

Child Strategies in Palin PCI. Child strategies may or may not be necessary after the indirect components, but would be considered as options at the review sessions. Child strategies might include increased pausing or reducing speech rate and may be taught and practiced through strategies such as "Bus Talking" (Kelman & Nicholas, 2008) or "Tortoise Talking" (Meyers & Woodford, 1992).

One of the functions of the indirect components of the approach is to put into place the skills that underpin any future direct fluency work. For instance, indirect components of Palin PCI help parents understand the importance of:

- practicing a skill during a time when you are most likely to be able to achieve it;

- focusing on a behavior for a short, specified period of time as the skill is learned and developed;

- keeping targets small and manageable;

- praising behaviors that you wish to see continue;

- viewing communication as an interactive process that is not dependent on fluency;

- understanding how they as parents may support the development of the fluency during real-life contexts;

- having realistic expectations—changing a behavior can be difficult and hard to attain, maintain, and generalize.

Packman, Lidcombe Program. The Lidcombe Program would be implemented with Lea as set out in the treatment guide and as overviewed above. The critical components in Stage 1 of

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the program are daily delivery of parental verbal contingencies, daily measurement of stuttering severity, and weekly visits to the speech clinic.

Verbal contingencies. At the start of Stage 1, Lea's mother will need to find a time each day to sit and converse with Lea for 10–15 minutes in order to deliver the contingencies under controlled conditions. This may be difficult, given her busy work schedule. At first, she will center this around an activity, such as looking at a book or playing a game that involves talking. It appears that Lea enjoys spending time with her mother, so she will likely enjoy these daily "talking times."

During these conversational exchanges, Lea's mother will give verbal contingencies immediately following a period of stutter-free speech and immediately following an unambiguous stutter. The three contingencies for stutter-free speech are acknowledgment (e.g., "you said that smoothly"), praise (e.g., "good talking!"), and request for self-evaluation (e.g., "Was that smooth?"). The two contingencies for stuttering are acknowledgment (e.g., "that was a bit bumpy") and request for self-correction (e.g., "can you say that word smoothly?"). Lea's mother will need to adjust the wording of these contingencies so that they are acceptable to Lea.

It will be critical for Lea's mother to ensure that she delivers many more contingencies for stutter-free speech during these "talking times" than for stuttering. As Lea's stuttering is quite severe, to achieve this, she will need to structure the conversations to ensure a low rate of stuttering. This could involve asking questions such as "Who is this?" or "What is he doing?". It is possible that because Lea is described as "perfectionistic," she may not like her mother saying anything about her stuttering at all. If that is the case, Lea's mother will need to wait and introduce the contingencies for stuttering slowly and gently after a few weeks. Lea's mother will reduce the use these structuring procedures as Lea's stuttering starts to reduce in frequency. The structuring procedures are used only during these "talking times." Once it is clear that Lea is comfortable with the verbal contingencies, her mother can start to deliver them occasionally during everyday conversations.

Measuring stuttering. The second critical component of the Lidcombe Program is the daily stuttering severity ratings. Lea's mother will rate severity each day on the Lidcombe Program 10-point rating scale (1="no stuttering", 2="extremely mild stuttering," and 10="extremely severe stuttering"). These will be discussed with the SLP at each clinic visit. If the severity ratings are not reducing over a period of a few weeks of treatment, Lea's mother and the SLP will discuss why this might be so and decide how Lea's mother could adjust how she is delivering the program accordingly.

Once stuttering reaches a very low level (severity ratings 1–2) both within and beyond the clinic, Stage 2 will be introduced. During Stage 2, the frequency of home treatment and of the clinic visits will reduce over the period of a year; however, the SLP will instruct Lea's mother to occasionally give verbal contingencies during everyday conversations. If stuttering severity should start to rise at any time, Lea's mother can introduce "talking times" again.

Clinic visits. The weekly clinic visits are essential during Stage 1. It will be critical that the SLP works together with Lea's mother during these visits to ensure that the program is an enjoyable experience for Lea and her family. During a visit, Lea's mother will first of all demonstrate—with Lea—how she has been delivering the contingencies during "talking times." This will allow the SLP to ensure that she is doing this correctly and safely.

Lea's mother and the SLP will then together look at the severity-rating graph to evaluate and discuss how Lea is responding to the program. Finally, together they will attempt to solve any problems that may arise, such as what to do if Lea's mother is having difficulty fitting daily "talking times" into the family routine or Lea's stuttering is not reducing. As described, the frequency of clinic visits will reduce during Stage 2, unless Lea's stuttering increases to a worrying degree, in which case weekly visits cane be re-introduced.

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Question 4: How Would you Evaluate Lea's Progress?

Millard, Palin PCI. We would evaluate progress by comparing information and data obtained before therapy and at the end of the consolidation period (6 weeks post therapy). Progress would be evaluated three more times during the year, through discussion with the parents about Lea's speech in a range of situations, with respect to their initial concerns and any new current concerns that may have emerged. More formal evaluations would be made through the analysis of a speech sample (stuttering frequency, severity, and type) and using the Palin Parent Rating Scales. This is an online measure of parents' perceptions of the impact on the child; the severity and impact on the parents; and the parent's knowledge about stuttering and how to manage it (https://secure.psych.lse.ac.uk/Palin_Parent_Rating_Scales/pprs_connect). If at any of the review sessions there is no clinically significant change in Lea's fluency or if there is any increase in impact or worry, then further indirect and/or direct strategies may be implemented.

Packman, Lidcombe Program. As already mentioned, each day, Lea's mother will record the severity of Lea's stuttering in everyday situations, using the Lidcombe 10-point rating scale. The SLP will also measure Lea's stuttering in the clinic each week. These scores will be entered into a chart and provide a good indication of whether Lea's stuttering is improving, both inside and outside the clinic. These measures will be made until the end of Stage 2.

Discussion

The two interventions for early stuttering—Palin PCI and Lidcombe Program—have now been presented in some detail, which hopefully provides an understanding of the two approaches. However, we cannot say in advance which of the two would be more effective for Lea, as every child and family is unique.

It is possible, in fact, that the two programs would be equally effective for Lea and her family. One study (Franken, Kielstra-Van der Schalk, & Boelens, 2005) has compared the Lidcombe Program with a treatment similar to Palin PCI and reported no difference in stuttering outcomes between the two groups. However, there are limitations to the study. It ran for only 12 weeks and less than half the children in the Lidcombe group would have received a full dose of the treatment. Because children with milder stuttering tend to respond more quickly to the Lidcombe Program, those who did not receive a full dose would most likely also have been more severe. We look forward to seeing the data from the extended trial of these two treatments (see Franken, 2013).

We now look at the differences and similarities and between the two treatments.

Differences

- The two approaches have developed from differing perspectives on the nature of stuttering. Palin PCI is based on the theoretical perspective that stuttering is multifactorial, and hence therapy should also be multifactorial. Therapy for each child is structured according to how these factors are deemed to be influencing how stuttering manifests itself in the child and the degree to which they impact fluency in that child. The Lidcombe Program was developed from a behavioral perspective. That is, it was developed from early research showing that the speech behaviors of stuttering could reduce under response contingent stimulation (see Onslow et al., 2003). The aim of the Lidcombe Program, then, is to reduce the speech behaviors of stuttering with parental verbal contingencies. As is stated in the literature on the program, it is critical that these contingencies are given safely to provide a positive experience for the child and family.

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- In Palin PCI, measures to assess responsiveness to the therapy are made before and after therapy and at reviews. In the Lidcombe Program, the parent rates the severity of the child's stuttering daily and the SLP measures it weekly.

- The two interventions have different ways of determining optimal "dosage" (for a discussion of treatment dosage in speech-language pathology, see Baker, 2012a, b). Palin PCI is time-specific, in that there are six therapy sessions, at which time the child is re-evaulated (Kelman & Nicholas, 2008). In the Lidcombe Program, the child receives daily treatment and visits the SLP once each week until stuttering reaches the very low criteria needed to move into Stage 2 (for a discussion of dosage in the Lidcombe Program, see Packman & Onslow, 2012).

- Palin PCI is predominantly an indirect treatment, focusing on changing the child's environment in order to impact the speech, and the Lidcombe Program is direct, in that the focus is on the child's speech.

- Both parents are included in Palin PCI (if both involved in the child's care), and only one parent is required for the Lidcombe Program.

- The aims of Palin PCI are to (1) reduce the frequency and severity of the stuttering, (2) reduce the impact of stuttering on the child and parents, and (3) increase the parents' knowledge and confidence in managing the stuttering. The aim of the Lidcombe program is to eliminate stuttering or to reduce the severity of stuttering to a very low level. The difference in aims explains the different monitoring/evaluation methods employed.

Similarities

- Palin PCI and the Lidcombe Program are each supported by sound, prospective clinical research. Hence, both are evidence-based.

- Both interventions have a manual, or treatment guide, that stipulates the treatment procedures and how to implement them.

- Both interventions involve working with the child's family and involve parents spending time with their child.

- Open acknowledgment of stuttering is a feature of both interventions, with focus on the child and parents receiving positive reinforcement and praise.

- In both interventions, the procedures are individualized for each child and family. In the case of Palin PCI, the content of the therapy is adjusted, while for the Lidcombe Program, it is the way the components are implemented that is adjusted for each child and family.

- Both programs provide parents with strategies if stuttering should re-appear or worsen after the end of treatment.

- The underlying mechanism for the two interventions is not known (for a general discussion of this topic, see Hayhow, 2011), although there has been some speculation about this (Packman, 2012). It is not yet known which aspects of each of the programs are critical for effectiveness.

- For both approaches, it is critical that SLPs have appropriate training. In an effectiveness study of the Lidcombe Program in generalist clinics in Australia (O'Brian et al., 2013), recognized training in the Lidcombe Program was associated with better outcomes. Training in Palin PCI is also available and recommended (Kelman & Nicholas, 2008). Clearly, SLPs will implement the treatment procedures and support

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the child and family more effectively if they are trained and have experience in using a therapy approach (Millard & Cook, 2010), whichever program that might be.

Conclusion

There is still much to learn about stuttering, the effectiveness of interventions and the mechanisms of change. Stuttering in early childhood is arguably more advanced in respect of these aspects compared to stuttering in later childhood, adolescence, and adulthood but, as researchers, we continue to learn, develop, and seek the answers to the many questions that remain. As clinicians, we want to know how the research translates into clinical practice. We hope that this paper provides further insights into two different approaches to Lea's management, based on the current evidence available, and that this will help inform the choices that SLPs make about intervening with young children who stutter.

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