

# Lidcombe News



## September 2010



## Edition 38

We have a mixed bag of information for you in this edition of Lidcombe News. Mark Onslow explains about the changes to the Lidcombe Program manual and the latest way of using percent syllable stutters in treatment. Still on the measuring theme Rhiannan Walton tells us about a very cheap app for your iPhone which can be used to measure those percent syllable stutters. Tina Latterman writes of her new book about the Lidcombe Program designed specifically for clinicians working in Germany ( the book is also in German) and in addition to all this we have our usual features- Dear Sue and Just Explain That Again- as well as news of workshops, and the next UK Link Days.



### DATES FOR YOUR DIARY

**Central England** is holding its next Lidcombe Link day on **Wednesday 8<sup>th</sup> December 2010, 1.30 – 4.30 p.m.**

**Venue: Cape Road Clinic (Cape Road, Warwick , CV34 4JP)**

All are welcome, and the focus will be on: Developing advice and information sheets to be used across Trusts; ongoing sharing resources and motivators/reward sheets; input of article to Lidcombe News!

**The North West** is holding its next Lidcombe Link day in **Stockport** on **Tuesday 15<sup>th</sup> March 2011** from 1pm for a 1.30pm start at **The Children's Therapy Centre, 1st Floor, Beckwith House, 1-13 Wellington Road, Stockport, SK4 1AF**. There is parking in Heaton Lane car park just around the corner on Heaton Lane, SK4 1BS. Contact **Celia Parlett** for further details if required on **tel. 0161 221 5673** or email: **parletts@ntlworld.com**



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Contributions to Mary Kingston. Send your ideas and questions to:  
Email: **kingstonamee@talk21.com** I can't promise to include everything and have to reserve the right to edit contributions as necessary. But I'll do my best!

**Norwich** is holding its next Link day on **Tuesday, 29<sup>th</sup> March 2011** from **9 - 3** at **40, Upton Road**. Bring/buy your own lunch. Contact **Sally Lelievre** for details, directions etc. on tel. **01603 508946**, or email Mary Kingston on: **kingstnamee@talk21.com**

## **COURSES AND EVENTS**



*It has been agreed by the Lidcombe Program Trainers Consortium that the two day workshop (three days in countries where English is not the first language) is only for Speech and Language Therapists (Speech Pathologists etc) who have graduated. It is not designed for parents ( unless they are qualified SLTs), students, TIs or members of other professions e.g. psychologists, doctors, teachers etc.*

The position with workshops is a little unusual this time around as we don't have any to advertise except the one below ( in the text box) at the RCSLT. There **are** other courses being run but they are completely full.

A **London** based course is being held on Monday and Tuesday **March 9<sup>th</sup> & 10<sup>th</sup> 2011** at the **Royal College of Speech and Language Therapists**. Contact **Sally Wynne** on email: **lidcombe@live.co.uk** or **Mary Kingston** on email: **kingstnamee@talk21.com** for the flyer and booking form.

We do however have other courses in the pipeline which may come to fruition. These are department based courses which usually have a few places to sell. If you would like information about any of these contact Mary Kingston on **kingstnamee@talk21.com** and I will let you know the current position. Please wait until late October/ early November before contacting me however as it is unlikely anything will have been firmed up before then.

There are also workshops being organised in other European countries – Greece and Croatia- and there will be information about these in the next edition of the Lidcombe News ( January 2011).

## **MISCELLANEOUS**

Our thanks to Rhiannan Walton for sending this information about an iPhone app which can measure %SS. She writes:

“Here are the details of the iPhone app, which could also be used on an iPod touch:It is called Duo Counter. So to download the app people can search for 'Duo Counter' in the search box in the app store, on their phone or computer. Or follow this link on their phone:  
<http://itunes.apple.com/gb/app/duo-counter/id312957534?mt=8> The app costs £2.99.My partner says it would be easy to design a better version with bigger buttons and a syllables per minute measure, that would store children's %SS: if he gets round to it I'll let you know!!”

**„Das Lidcombe-Programm zur Behandlung frühkindlichen Stotterns“  
by Christina Lattermann, Ph.D.**

**The Lidcombe Program of Early Stuttering Intervention:  
a new handbook from a clinician for clinicians – and all in German!**

In 2004 Anna Hearne and I started to implement the Lidcombe Program (LP) in Germany. Since 2007 we have been in the lucky position that Bettina Freerk became a member of the Lidcombe Program Trainers Consortium and joined our German team. From the beginning, we have been fighting deeply rooted scepticism and frequent open hostility towards the Program. However this situation is gradually but consistently changing and the LP has been embraced more and more by our German colleagues. The results of a study (Lattermann, Euler, & Neumann, 2008; Lattermann, Neumann, & Euler, 2009), but more so our own therapeutic experience and the feedback we received while providing LP-follow-up days and supervision of colleagues, indicated that in order to implement the LP successfully in Germany, several issues needed to be taken into consideration:

- a) cultural issues
- b) parental issues
- c) issues pertaining to the German health care system

However, most importantly, we realized that the majority of clinicians participating in the LP-workshops did not have access to English journals and/or their language skills were not sufficient to read English literature. As a result most clinicians had no access to LP-research articles or the LP book by Onslow, Packman and Harrison. Yet there was a clear demand for continuing and more detailed information about the LP.

This demand sparked the idea of writing a German clinical guide for the LP tailored to the needs of German clinicians. The book was also to include the information we had gathered as a team of trainers during the last couple of years. The result is a clinical handbook providing a practical overview of the LP and its implementation. The treatment is described in detail and a number of case studies are provided to illustrate the process. Important aspects specific to the German culture of the children and their families are taken into account. Cultural issues are also taken into consideration when describing how to teach structured / unstructured conversations and especially how to successfully implement verbal feedback.

In addition the book deals with the treatment of bilingual children as this is an increasing population in Germany and many clinicians report to be overwhelmed with this situation in therapy. There is also a chapter outlining the treatment for children presenting with co-morbidity or other difficult circumstances which may impede the implementation of the LP. Several case studies depicting typical problems and frequently raised issues during Stage I and Stage II of the treatment provide a detailed trouble shooting and problem solving section. The chapter describing the most important research results is structured by questions about the LP which a clinician, parents and / or the

doctor involved in the case may want to have answered. Treatment in Germany is in most cases prescribed by the paediatrician or ENT. The clinician is accountable to the doctor, and the health insurance provider of the family, which usually covers the treatment completely. The broad evidence base of the LP will hopefully support German clinicians when they need to convince the parties involved that the stuttering child is in need of therapy and that treatment with the LP is efficient and most of all effective. The book closes with Frequently Asked Questions, a chapter which constitutes a quick reference for clinicians.

In total, the textbook is divided into 11 chapters:

1. Development of the LP
2. Assessment
3. Measurements of Fluency
4. Therapy
5. Possibilities/Ideas to present structured and unstructured conversations
6. Research
7. Experiences with the LP in Germany
8. Treatment of bilingual children
9. Co-morbidity and difficult circumstances
10. Troubleshooting
11. Frequently Asked Questions

This book would have never been written without the great support and infinite patience of my team LP-partners and friends, Anna Hearne and Bettina Freerk. We hope that not only will it guide clinicians in their daily work with the LP but that it will also contribute objectively to information about the Program, thereby decreasing still existing prejudices in Germany - in particular, the myth that this method is able to cure all stuttering children.

### **Literature:**

Lattermann, C., Euler, H.A., & Neumann, K. (2008). A randomized control trial to investigate the influence of the Lidcombe Program on early stuttering in German speaking pre-schoolers. *Journal of Fluency Disorders*, 33, 52 – 65.

Lattermann, C., Euler, H.A., & Neumann, K. (2009). Das Lidcombe-Programm. Ein Interventionsverfahren zur Behandlung frühkindlichen Stotterns – auch für deutschsprachige Kinder. *Forum Logopädie*, 2, 16 – 23.

Lattermann, C. (2010). Das Lidcombe-Programm zur Behandlung frühkindlichen Stotterns. Neuss, Natke Verlag.

“Das Lidcombe-Programm zur Behandlung frühkindlichen Stotterns” by Christina Lattermann is available at:

[http://www.natkeverlag.de/shop/index.php?main\\_page=product\\_info&products\\_id=53](http://www.natkeverlag.de/shop/index.php?main_page=product_info&products_id=53)



## Dear Sue

*I have been seeing a Marc, a little boy of 4 years, 5 months, for 17 weeks and he has made very good progress. His SRs have reduced from 6s and 7s, and a WC %SS of 9.4 (his highest recorded score) to his current best SRs of 1s and 2s, with WC % SS of 0.5 (his lowest recorded score). His mother and I thought all was going well, moving from structured to unstructured treatment as his scores reduced, and we both had Stage II in our sights! Our problem however has been a lack of stability. While generally his SRs are at 1s and 2s he sometimes has days when it goes up to a 3, maybe for a couple of days in a row, and then he comes back down again. We never therefore get 3 weeks of measures which would be consistent with the Stage II criteria. Marc's mother and I are beginning to feel that after 6 weeks of this pattern something needs to change to keep him steady but we aren't sure what we should be doing. Can you give us some suggestions?*

My initial thought is that although Marc's severity is low, his pattern of severity indicates that whatever therapy is in place is not quite enough to keep his severity ratings down consistently and improving. As you described, there is a lack of stability in his speech. It could be that therapy has become unstructured too quickly. With children who show this pattern, I find it helpful to continue structured therapy daily, although the activity that is being done is likely to be unstructured in its nature. By that I mean that you would have a defined beginning for therapy, give frequent verbal contingencies, and structure it if necessary so that it is mostly stutter-free. On the days when he is a severity rating of 2, that may not be necessary but if he is a 3, then you might need to do more.

It would be a good idea to look at whether the stuttering is occurring at particular times (e.g. when Marc is tired or excited) as you could suggest that the mother targets therapy at those times or increases her verbal contingencies at those times.

It is also useful to consider what types and frequency of verbal contingencies are occurring across the day and how the mother delivers them. Is she doing them intermittently across the day or are they given in patches? This is a variable that you can manipulate and then watch for the impact. Different methods work for different children. Also, are the verbal contingencies still powerful? Sometimes they can lose their impact over time. The most powerful contingencies are random and unpredictable. It is important that they have not lost their impact.

If altering the verbal contingencies doesn't work, you might consider introducing a smooth talking reward chart to give the verbal contingencies more power.

One final comment that I have is to ensure that there are not some subtle stutters being reinforced in therapy. I find that children who have had blocks and prolongations may continue to have subtle versions of these. These children can be at risk of having those subtle stutters praised inadvertently. It is very important that this is not occurring. The only speech that is praised should be effortless, fluent stutter-free speech.


Our grateful thanks for this edition's Dear Sue and the Just Explain That Again below go to Stacey Sheedy, Mary Erian and Wendy Lloyd from the Bankstown Stuttering Unit in Sydney, Australia.




**Just explain that again...**



**?** *If a preschool child has phonological difficulties in addition to their stuttering do you always start with the Lidcombe Program first? Are there times when you feel that the phonology should be addressed before the stuttering?*


 In general I would start with the stuttering therapy because the literature indicates that therapy should take 4 - 6 months in most cases to get to Stage 2. There are cases however where I would address the phonology first. These would be if the child's speech was unintelligible or if it was affecting their interactions with others more than the stutter. I would keep in mind that the timing of treatment for stuttering should be within the preschool years, as once the child is school age, the evidence for stuttering treatment is not as good.


**?** *On the same theme, if a child has language difficulties in addition to their stuttering do you always start by addressing the stuttering? Do you think that language difficulties may make the treatment of the stuttering more problematic and sometimes act as a kind of trigger for the stutter?*

 Timing of treatment would be based on several factors. These include the age of the child, when they are starting school, time since onset, reaction to the stutter, severity and how stuttering is impacting on their daily interactions, the severity of the language difficulty and how it is affecting the child's interactions and whether there is enough language to be able to do stuttering therapy effectively.

If the language difficulties are mild and the child is close to school age then I would treat the stutter first. If the language difficulties are severe and the child is quite young with recent onset of stuttering, then I would probably treat the language difficulty first. If the difficulties were somewhere in between, then I think it would be a case-by-case decision with parental input.

I do think that language development can impact on the severity of the stutter. I have seen children who have a sudden increase in vocabulary or length and complexity of utterances have corresponding increase in the severity of the stutter. I assume that the improvement in language skills has been a trigger for an increase in the severity of the stutter and would manage this with an increase in the structure of the therapy as needed in order for therapy to be effective.

 *We know from the research that it is possible to treat older school aged children with the LP. How old is the oldest child you have personally treated? Did you have to make any modifications to the manualised version, and what were the particular challenges?*

 The oldest child that I can recall was 10 years of age. Having said that, I would always trial the Lidcombe Program first, particularly for a child who has not had therapy before or who shows periods of time with mild or no stuttering.

The main things that I did differently to a preschooler were that the parental verbal contingencies were given in an age-appropriate manner, usually with acknowledgement rather than praise. I have found that correction can be quite direct and that the child will often work with me to achieve the overall goal of reducing the severity of their stutter. I can advise the child that I want to help them be fluent for practice times, and ask them to use short sentences and they often comply. They are usually able to self-evaluate and correct their speech more readily and may respond to prompts for smooth talking by controlling their stutter.

The other thing that I have found is that the child can give severity ratings to supplement the parent's ratings. Even if they are inaccurate, I think it is helpful to have the child self-reflect on how they have been going.

The challenges include that the outcome of treatment needs to be kept realistic as the stutter may reduce but the child will probably have some residual stuttering and will need to learn how to manage relapse when it occurs.

The other main challenges relate to motivation of the child and parent for treatment. If the child is motivated but the parent is not, then the Lidcombe Program is not likely to be a good treatment choice. If the parent is motivated and the child is not, then that can be difficult to manage as the parent wants to help the child improve but will obviously have difficulties in encouraging the child to practice and to respond to prompts about their speech.

In that situation, a decision would need to be made about whether treatment is appropriate or not. Finally, the parent-child relationship is important to consider as Lidcombe Program treatment relies on a positive relationship.

## **IMPORTANT LIDCOMBE PROGRAM MANUAL CHANGE**

**Kate Bridgman**, Australian Stuttering Research Centre, The University of Sydney,

**Mark Onslow**, Australian Stuttering Research Centre, The University of Sydney,

**Mark Jones**, The University of Queensland, School of Population Health

### **Preamble**

As you may have noticed, there is a new Lidcombe Program manual at the ASRC website (Packman, et al., 2010). There are quite a few aesthetic changes, and inclusion of material that we think is much clearer than the previous version. You will notice that on Page 12 we have referred to Lidcombe Program telehealth delivery, with special reference to webcam delivery.<sup>1</sup> We did that because we thought there was sufficient evidence now for telehealth delivery; three clinical trials culminating in a successful randomized controlled trial (Lewis et al., 2008). Modest evidence perhaps, but enough in our view to recommend the procedure. That being said, the next question was whether we would recommend webcam delivery, and clearly the answer was yes; it can only improve low-tech telephone delivery, and further clinical trials were not needed to show that.

We updated the manual as part of a randomised controlled trial we are undertaking, comparing standard delivery of the Lidcombe Program to delivery via Skype, and using a webcam. Our current evidence for telehealth delivery of the Lidcombe Program supports that it is effective but not efficient using low-tech telephone delivery. We are confident that this RCT will have useful results and will keep you updated on our findings.

However, the purpose of this article is to highlight the most important manual change and explain why we wanted it. On Page 6 of the new manual we have:

#### *Percent Syllables Stuttered (%SS)*

Percent syllables stuttered (%SS) is measured by the clinician at the start of the session during Assessment (see Part Three) and at the end of Stage 1 (See Part Three). Measures of %SS are made during a conversation where the child displays a reasonably representative amount of stuttering, or it becomes clear that stuttering will not occur. For this purpose the parent and/or the clinician converse with the child until the extent of stuttering, if any, is apparent.

Clinicians may collect %SS measures at the start of other clinic visits but this is an optional component of the program. Some experienced Lidcombe Program clinicians report that there are

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<sup>1</sup> The clinician in the photograph in the manual is our colleague, Dr Brenda Carey, who has a Melbourne private practice and works as a Clinical Educator at School of Human Communication Sciences, La Trobe University. Brenda's doctorate involved a randomised controlled trial of the Camperdown Program in telehealth format (Carey et al., 2010)

benefits to collecting %SS measures at the start of each clinic visit, particularly during the early parts of Stage 1. For example, doing so may focus the clinician closely on the types of stuttering a child is doing, and increase perception of subtle week-to-week changes that may be clinically important. Additionally, it may be gratifying and motivating for the parent to see a change in %SS recorded by the clinician as therapy progresses.

And spanning Pages 8 and 9 we have:

*Preparing for Stage 2*

Preparation for Stage 2 begins when, for the first time, SR scores for the previous week are 1 or 2, with at least four of these being 1. At the first clinic visit when this occurs, the clinician measures %SS from a conversation where the child displays a reasonably representative amount of stuttering, or it becomes clear that stuttering will not occur. This %SS clinic measure continues each week thereafter

*Criteria for entry to Stage 2*

The criteria for progressing to Stage 2 are three consecutive clinic visits where: (1) %SS is less than 1.0 within the clinic, and (2) SR scores for the previous week are 1 or 2, with at least four of these being 1. In the event that a parent does not supply a SR for any day of a week during preparation for Stage 2, that week is not counted in the requisite sequence of three weeks of criterion speech performance.

So, in short, collecting %SS during every treatment session is now an option, not mandatory, during the Lidcombe Program, except when the child is nearing the end of Stage 1. During the rest of this article we explain the reasons why we wanted to make this change. It—along with other changes to the previous version of the manual—was made after extensive discussions with Lidcombe Program Trainers Consortium members internationally and our clinician and academic colleagues in Australia. Our reasoning and the story behind it are presented below.

***Why use Speech Measures During the Lidcombe Program?***

Speech measures are used during the Lidcombe Program. They are used to determine stuttering severity, treatment outcomes, and to judge when children have met criterion speech performance. The measures also are used to monitor change over time and to assess clinical progress against published benchmarks (Jones, Onslow, Harrison, & Packman, 2000; Kingston, Huber, Onslow, Jones, & Packman, 2003; Rousseau, Packman, Onslow, Harrison, & Jones, 2007). Such measurement of stuttering contributes to the assessment process, because it is pertinent to decision making about timing of intervention (Onslow & Packman, 2007). For example, negative peer reactions are known to occur during early stuttering (Langevin, Packman, & Onslow, 2009), and a severely stuttering preschooler may be at greater risk of such events. Further, more severely stuttering preschoolers are known to

require more treatment time (Jones, et al., 2000; Kingston, et al., 2003; Onslow, Harrison, Jones, & Packman, 2002; Rousseau, et al., 2007). During the Lidcombe Program, according to the present manual (Packman, Webber, Harrison, & Onslow, 2008), the clinician measures severity ratings and a stutter count measure during each clinic visit.

### ***Lidcombe Program Stutter Count Measures: The Theoretical Challenge***

The fundamental reason for the presence of %SS as a stutter count measure during the treatment process is historical. The treatment was developed in Australia (Onslow, 2003), and stuttering treatment development and evaluation in that country were influenced by the behavioural revolution of the field that began during the 1950s. Ingham (1984) provides an account of those emerging behavioural influences and how they drove the development of treatments worldwide and in Australia. Behavioural stuttering event observation and counting, as occurs with the %SS measure, was a direct result of that influence. Ingham (1984) and Ingham and Costello (1984a) detailed the use of %SS to determine outcomes of adult treatments, and Ingham and Costello (1984b) detailed their use for the same purpose with children. Additionally, Onslow and Ingham (1987) observed that, with many speech treatments, %SS measures are an inherent part of their programmed instruction. For example, Australian speech restructuring treatments historically have required that clients attain zero %SS during a programmed series of speech rate increases (Craig, Feyer, & Andrews, 1987).

In summary, then, %SS measures can be used for (1) assessment, (2) benchmarking, (3) for conducting the treatment process itself, and (4) administering treatment performance criteria. Yet this prompts a theoretical challenge to whether they are a justifiable inclusion within the Lidcombe Program. In the first instance, %SS indeed is useful for assessment, but that occurs before Lidcombe Program treatment begins. Second, the Lidcombe Program benchmarking datum is time to attain Stage 2, not %SS (Jones, et al., 2000; Kingston, et al., 2003; Rousseau, et al., 2007). Hence that measure is not needed for clinicians to determine whether they are treating with acceptable standards. Third, the Lidcombe Program does not involve programmed instruction (Onslow, Packman, & Harrison, 2003) so there appears no need for %SS measures to conduct the treatment process itself. Indeed, there is a precedent where %SS was removed from a treatment process because it did not make such a contribution. This occurred with the development of the Camperdown Program because its speech restructuring process did not involve programmed instruction (O'Brian, Onslow, Cream, & Packman, 2003). In fact, the only clearly defensible use for a %SS measure within the Lidcombe Program is to determine whether a child has attained the criterion of below 1.0 %SS during a clinic visit. Such a criterion apparently can be yoked to normal preschool speech (Onslow et al., 1997).

### ***Lidcombe Program Stutter Count Measures: The Empirical Challenge***

In addition to the theoretical challenges described above, there has been an empirical challenge to the use of %SS during the Lidcombe Program treatment process. That challenge has emerged from a current study comparing group and individual delivery of the Lidcombe Program recently

completed by Simone Lees as part of her PhD.<sup>2</sup> The design of the study was a randomised controlled trial. Participants were allocated to the control arm of individual treatment or to the experimental arm of group treatment (Lees, Onslow, Packman, Menzies, & Block, 2010). Both groups received the Lidcombe Program as detailed in the treatment manual at the time (Packman, et al., 2008). However, speech sample measures with %SS were not feasible for each child in the group arm because that would have required more than half of each session. Instead, Simone engaged the children in a brief group discussion at the start of each session and assigned a severity rating (SR) to each of them.

Preliminary findings were reported at the 2010 Speech Pathology Australia Conference. The group participants met Rousseau et al.'s (2007) benchmark criteria for mean number of sessions to entry into Stage 2. While final results are yet to be reported, it appears that while investigating the relative merits of group and standard Lidcombe Program service delivery options, Lees et al. (2010) produced an ancillary finding. The data obtained for the experimental arm indicate that during weekly treatment sessions children can reach program speech criterion without weekly %SS measures in the clinic. There is a caveat to the interpretation of these data; there were two variables that changed with the experimental arm. These were the introduction of group format and removal of %SS. Hence it is an assumption that the treatment benchmarks would not change if %SS measures were withdrawn from the standard treatment format. Regardless, that assumption is reasonably credible in our view.

Further evidence that supports this empirical challenge comes from literature dealing with inter-observer reliability of %SS scores. Bothe (2008) investigated inter-observer reliability between experienced observers using child stuttering samples. Observers were required to classify 5-second speech intervals according to whether they contained stuttering or no stuttering. Results showed intra-observer reliability was just below a 90% agreement criterion. This means that 90% of the observers made the same stuttering or non-stuttering judgments two months later. This criterion is a high level of intra-observer and inter-observer reliability.

However, Bothe presented these results with a caveat. Although the observers demonstrated acceptable intra-observer reliability, their inter-observer reliability was less acceptable. When comparing observers with each other, 25% of the classifications made by any one observer would not have been accepted by 80% of the other observers. So although overall intra-observer reliability was acceptable, inter-observer reliability was questionable. In other words, experienced observers are likely to disagree with each other about the presence of a stutter. This is a substantive challenge to the viability of %SS measures, which are based on such observations.

The reliability of measures based on stutter counts has also been questioned when investigating inter-clinic agreement. In a landmark study, (Ingham & Cordes, 1992; Kully & Boberg, 1988) invited 26 international clinical sites to nominate experienced observers. Each observer was required to count stuttered and non-stuttered syllables and provide an SR. There were ten 1-

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<sup>2</sup> That is Simone on Page 4 of the revised manual.

minute speech samples. The measure of stuttered syllables spoken varied greatly among the eight clinic representatives who counted stuttered syllables. The agreement for syllables stuttered ranged from exact to a 15-syllable difference. Severity ratings were also given for each sample using a 7-point scale. The eight clinics showed variance in this measure also. Severity ratings ranged from exact agreement to a 4-point difference. This difference would result in the same sample being described as mild in one clinic and severe in another. Severity ratings were, however, the most accurate measure for the normal speakers.

An intraclass correlation (ICC) was calculated for the %SS and SR data in the Kully and Boberg study.<sup>3</sup> In cases where observers measure a number of samples, the ICC uses ANOVA to determine how much of the variance of the measures can be attributed to the samples, and how much can be attributed to the observers. The latter is error variance. ICC (2,1) was calculated for the Kully and Boberg data. For this calculation, '2' denotes a two-way ANOVA and '1' denotes that the judges themselves are random effects (Shrout & Fleiss, 1979). Data from two clinics were excluded from the %SS ICC because their measures were based on disfluency rather than stuttering counts. For the eight clinics that measured %SS the ICC (2,1) was 0.82. An ICC of 0.86 for SR was calculated for the eight clinics that provided those data. This value did not change with removal from the analysis of the two clinics where disfluencies were counted. Thus, there was no substantial difference between reliability of %SS and SR measures in the Kully and Boberg data.

Pairwise comparisons were also calculated for SRs assigned to each sample. Of the 280 pairwise comparisons, 230 (82.2 %) SRs were identical or differed by only one scale value. Interestingly, the mean SR for all clinics was within 1 scale value (1.3-2.1) except for one clinic with a mean of 2.5. The pairwise comparison calculations were repeated removing the SRs from that clinic, with a resulting higher score of 84.3%. A final pairwise comparison was completed for the clinics where stutters and not disfluencies were counted. This pairwise comparison was 81.8%.

The above analyses of Kully and Boberg's data allows some scope to compare and contrast SR and %SS as measurement tools for (presumably) adult or adolescent participants. The ICCs indicate similar, favourable reliability with the two measures. Pairwise comparison of SR scores also shows quite favourable reliability. On balance, these analyses suggest that for the Kully and Boberg data the two measures are of equivalent value.

### ***Lidcombe Program Stutter Count Measures: The Logical Challenge***

Having considered the theoretical and empirical challenges to the use of %SS during the Lidcombe Program, there are some logical challenges to be considered. The first is that %SS measures during the Lidcombe Program are within-clinic speech samples. Given the importance of speech samples during the decision making process, they need to be representative of the child's everyday speech. This process can be compromised because a single

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<sup>3</sup> Those who don't care for statistics, feel free to let your eyes glass over during the following bits.

speaking task may not reflect a preschool child's overall stuttering (Yaruss, 1997).

The variability of preschool children's stuttering has been consistently documented (Bloodstein, 1970; Onslow, 1993, 2004; Onslow, O'Brian, & Harrison, 1997; Onslow & Packman, 2007; Yairi & Ambrose, 1999; Yairi & Ambrose, 2005). Yaruss (1997) assessed frequencies of disfluencies for 45 preschool children across five different speaking tasks. Yaruss found great variability across tasks, with those that involved a parent-child interaction eliciting fewer disfluencies than high pressure play tasks. Thus, assuming that Yaruss' disfluencies were to some extent stutters, in-clinic speech samples, especially when confined to a single task with a parent, are likely to under-represent a child's true stuttering severity. This then supports the importance of beyond clinic measures during a treatment process. Measurement beyond the clinic captures stuttering variability across different times of the day, environments and speaking situations. Using within-clinic %SS during the Lidcombe Program, and indeed potentially during any program, cannot capture this variability.

Severity ratings make three contributions to the Lidcombe Program treatment process. First, they allow the parent to record beyond-clinic measures daily, which captures stuttering variability. Second, SRs allow the parent and clinician to calibrate their measures of a child's stuttering to inform their program adjustments. Third, they enable stuttering severity to be measured taking into account different types of stuttering that might affect severity—repeated movements, fixed postures and extraneous behaviours—that %SS does not take account of.

Given that SRs capture stuttering variability beyond the clinic, they appear to contribute significantly to the treatment process. They appear to have roughly equivalent reliability to %SS. Thus, SRs are a robust measure that can be used by parents and clinicians within and beyond the clinic. Further, SRs require little training (Lincoln & Packman, 2002) and can be easily calibrated with clinician-led discussion (Packman, et al., 2008). The measure reflects stuttering severity and can be used to measure treatment progress and potentially, to reliably predict treatment time.

### ***Conclusion***

The foregoing literature review is compelling. Percent syllables stuttered can no longer be recommended as a routine component of the Lidcombe Program treatment process. In our view, severity ratings should be the empirical, theoretical and logical measure of choice throughout the Lidcombe Program treatment process, and that measure should be the sole driver of that treatment process.

These conclusions are not without caution. To rely on a single measure throughout the treatment process would be incautious. Removal of %SS entirely would make the criteria for entry into Stage 2 much more liberal, and could have the effect of children prematurely entering Stage 2. Indeed, there is evidence to support his contention. Onslow et al. (2002) showed that there are occasions when parent SRs will be below Lidcombe Program criterion but the clinician %SS score will be above criterion. It is therefore recommended that %SS be introduced into the treatment process as a safeguard once a

child presents with criterion SRs for Stage 2. The use of both measures can be a safeguard that children who enter Stage 2 are demonstrating near-zero stuttering.

Consequently we changed the manual and the new version was uploaded to the ASRC website in July 2010.

### References

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