

It's About Time: Parent-Child Turn-Taking in Early Stuttering

Allison Godsey

Honors Thesis

University of Maryland

February 14, 2023

Committee Members:

Dr. Nan Bernstein Ratner (Mentor)

Dr. Jared Novick

Carly Rosvold

Abstract

Many professional and self-help organizations (e.g., ASHA and SFA) present advice to lengthen the time between child and parent turns to assist the child who stutters (CWS). A small body of previous research provides support for some advice: Structured turn-taking during parent-CWS interactions seems to decrease the number of disfluencies produced by the child who stutters (e.g., Winslow & Guitar, 1994). However, the long-term effect of implementing this advice on recovery from stuttering has yet to be evaluated. Our study analyzes whether parental response-time latency plays a role in the long-term facilitation of child fluency in CWS by analyzing mother-child play interactions from the International Illinois Stuttering Research Project (IISRP) Corpus (Yairi & Ambrose, 2005). Findings do not provide strong support for alteration of turn-taking latencies to facilitate fluency in early childhood stuttering.

Introduction:

Though involved in nearly all of the approaches used in the management of stuttering, the effectiveness of parent-administered intervention in a child's stuttering is a long-debated issue among speech-language pathologists. Parents are frequently offered advice to alter their own speech behaviors in an effort to benefit the child's fluency, as seen in the Demands and Capacities Model (DCM; Starkweather, Gottwald, & Halfond, 1990), Palin Parent-Child Interaction (PCIT; Kelman & Nicholas, 2020) and RESTART-DCM (Franken & Laroës, 2021).

Although not grounded in a deep evidence base, involving parents in the management of early stuttering has remained a best practice, despite somewhat limited empirical support; typical advisement to parents spans temporal changes (reduced parental speech rate, lengthened turn-taking latencies), as well as other behaviors (see Bloodstein et al., 2021 for extensive discussion). Both professional and self-help organizations (e.g., the American Speech Language Hearing Association (ASHA) and the Stuttering Foundation (SFA) specifically present advice to lengthen the time between child and parent turns to assist the CWS.

In addition, nearly all textbooks on stuttering over the past 50 years contain a chapter providing advice for parents; see early advice from Van Riper (1992), Starkweather et al. (1990), Guitar & McCauley (2011), among others. Together with the other suggestions mentioned in these books is the advice that parents increase the time between speaking turns, also called response time latency (RTL).

Therapeutic Approaches Used in the Management of Early Stuttering

The role of parental interaction style in early stuttering has been examined through both etiological and therapeutic perspectives. While many SLPs no longer support the notion that parental interaction style may cause stuttering, many still speculate that it might facilitate better fluency among CWS. Stuttering is often looked at through the same scope as chronic conditions such as allergies. While parents may not cause it, they may be able to help manage it (Bernstein Ratner, 1993).

The Demands and Capacities Model (DCM) emphasizes the importance of indirect therapy when interacting with children who stutter (Starkweather, Gottwald, & Halfond, 1990). One of its many suggestions is to increase RTL. In the Demands and Capacities Model, parents are advised to change their own speech behaviors when interacting with children who stutter. Speech behaviors are changed to avoid family and surrounding family members may be speaking in a manner that is too hard to follow.

Similar to the Demands Capacities Model, the Palin Parent-Child Interaction (PCI) Model (Kelman & Nicholas, 2008) focuses on advisement to parents of children who stutter. The aim is to reduce the impact of stuttering on the child and parents. Interaction strategies listed by this approach include “giving the child time” as well as “pausing and rate of speech”.

The Restart-DCM Method (Franken & Laroës, 2021) is another popular therapeutic approach that advises that parents demonstrate desired speech models when interacting with their CWS. Restart-DCM primarily functions on the belief that children will begin to model the speech patterns presented to them by their parents. An entire section of advice to parents is dedicated to turn-taking behaviors. In this section it is advised that parents use a balanced number of turns, even length of turns, limit interruptions, and increase interaction time.

Reputable Internet Resources

Advice to parents to alter RTL is also readily available on the Internet. ASHAWire (Whelan, 2019) provided "5 Tips to Share with Parents of Preschoolers Who Stutter". The first of many suggestions is that parents "Increase the length of pauses between speaking turns." The reasoning behind this suggestion, as stated in the article, is that "children might feel pressure to get their words out before somebody else begins talking". The suggestion to adjust conversational timing is also first on ASHA's list of suggestions

(<https://leader.pubs.asha.org/doi/10.1044/5-tips-to-share-with-parents-of-preschoolers-who-stutter/full/>) to parents and fourth in the Stuttering Foundation's article "7 Tips for Talking with Your Child" (<https://www.stutteringhelp.org/7-tips-talking-your-child-0>).

Although the suggestion to increase the length of pauses between speaking turns is readily available and often prescribed, a relatively small body of research exists on the effectiveness of this indirect therapy approach. Additionally, no empirical evidence exists regarding whether RTL affects longitudinal recovery outcomes and persistence in stuttering.

Conversational Pressure and its Role in Stuttering in Structured Situations

Charles Van Riper, commonly referred to as the father of modern Speech-Language Pathology, originally theorized that stress placed on a CWS may have the ability to increase disfluencies (Van Riper, 1982). Today, that stress is commonly referred to as conversational pressure. Many therapy approaches used in the treatment of early stuttering aim to reduce the pressure placed on the child (e.g., The Demands Capacities Model, Palin PCI Model, and Restart DCM).

Although there is a limited body of clinical evidence, previous research does provide some support for portions of advice: Structured turn-taking during parent-CWS interactions may have the potential to decrease the number of disfluencies produced by the child at the time of use (Winslow & Guitar, 1994). In such cases, increased RTL between turns hypothetically facilitates fluency. Prolonged response time latency may decrease the child's conversational pressure to respond (Kelly & Conture, 1992).

Parents are often given indirect therapy approaches to use in the home with the aim of reducing presumed conversational pressure. In a test of this hypothesis, Yaruss (1997) analyzed the concept of conversational pressure, utilizing a subject pool of forty-five preschool-age children who stutter. Fluency was analyzed by looking at specific speaking situations. In the "play with pressure" situation, the clinician was instructed to interrupt the child and increase time pressure. The "play with pressure" situation elicited an increase in stuttering-like disfluency. The findings of this study suggest that increasing the time between speaking turns could reduce conversational pressure placed on the CWS.

Studies Conducted on RTL

While undeniably limited, some empirical evidence does support the notion that increasing RTL decreases the conversational pressure placed on the CWS. RTL's effect on conversational pressure may play a role in reducing disfluencies; this is a possible reason that it remains a common suggestion to manage early stuttering made to parents of CWS.

Newman and Smit (1989) analyzed the effects of variation in response time latency, speech rate, and interruptions on fluency in children's speech. The subjects were four 4-year-old children. In the study, the experimenter utilized a 1-second or a 3-second RTL when responding to the child. The study found that children demonstrated longer RTLs when the experimenter

employed the 3-second condition. Other dependent variables included speech rate, the frequency of disfluencies, and interruptions produced by the subject in each condition. The study concluded that children as young as four years old could modify their speech behavior, including RTL, to reflect that of their conversational partners. When the shorter, 1-second RTL condition was employed, three of the four children demonstrated increased "stutter-type" disfluencies (Newman & Smit, 1989). This study supported the recommendation that RTL may impact the number of disfluencies produced.

Using a different design, Meyers and Freeman (1985) evaluated parent-child conversations of 12 CWS and their mothers, as well as 12 CWNS and their mothers. The study found that mothers in both groups interrupted their child's disfluent speech more than their child's fluent speech. The study also found that both CWS and CWNS were more disfluent when in the act of interrupting their mother's speech. This study supports the idea that disfluencies and interruptions are related. Interruption, by its very nature reduces RTL and can be considered to be an indicator of a competitive speaking situation, increasing the pressure on the speaker. As mentioned previously, increasing conversational pressure is theorized to have the potential to elicit disfluencies. This study supports the claim that decreasing interruptions may facilitate better fluency in CWS.

Winslow and Guitar (1994) also analyzed the effectiveness of structured turn-taking when used with a single 5-year-old boy who stuttered. Structured turn-taking, as well as un-structured turn-taking, was employed during dinner conversations. This was done through designating speaking turns through holding an item that was passed around the table. All interactions were recorded via a tape recorder and analyzed for fluency. The researchers found that the fluency of the child improved when the condition of structured turn-taking was

employed. The recommendation made was to employ structured turn-taking in order to decrease interruptions as well as disfluencies. However, it is hard to generalize these findings from one participant.

Similarly, Kelly and Conture (1992) analyzed response time latency in parent-CWS interactions. They did so by analyzing a subject pool of 13 boys who stutter and 13 who did not. A positive correlation was found between scores on the *Stuttering Severity Instrument* and the durations of the overlapping portions of their mother's interruptions. This finding led them to speculate that increasing response time latency may decrease the conversational pressure placed on the child and, as a result, decrease the number of disfluencies produced. However, the study primarily focused on interrupting behaviors, rather than RTL per se in parent-CWS interactions.

Bernstein Ratner and Guitar (2006) discussed the impact of turn-taking and interrupting behaviors on fluency, citing many articles discussed above. They concluded that the advisement yielded promising results; however, the number of children whose fluency has been examined as a function of speech rate and turn-taking changes was, at the time, quite limited. Evidence-based recommendations to adjust parent-child interactions in stuttering require a more significant number of cases in which recommendations can be linked to even short-term changes in children's fluency profiles.

What the IISRP can contribute to our understanding of RTL and fluency in CWS

The Illinois International Stuttering Research Project (IISRP), conducted by Ehud Yairi and Nicki Ambrose, was one of the most significant longitudinal studies of early stuttering and produced valuable information regarding factors that appear to contribute to stuttering persistence and recovery. These data have been donated to the recently created, open-access FluencyBank project (fluency.talkbank.org). The entire database contains 440 samples from 88

children who stutter. The children were seen five times each, at six month intervals. The files collected from this study include parent-child interactions in toy play and have attached audio files. The study also tracked appropriately-matched children who do not stutter (CWNS). The longitudinal manner in which these files were collected, together with the inclusion of parent-child interactions, both before and following advisement that parents make speech rate and turn-taking changes, has the unique potential to strengthen or diminish the indirect therapy advisements made to parents of children who stutter. Thus, our aim was to analyze parent-child turn-taking in early stuttering using the large cohort collected by the Illinois International Stuttering Research Project.

Research Questions

What is the role of maternal response time latency in children's fluency in both CWS and CWNS?

Does increased length of pauses between speaking turns facilitate better child fluency within sessions?

How will the parents in each of these dyads compare to the parents of CWNS?

Does response time latency in early stuttering have the potential to predict long-term facilitation of fluency? Specifically, at the first baseline visit, and in subsequent visits,

Will parents of CWS-Recovered demonstrate longer pauses between speech turns than parents of CWS-Persistent?

Does parental speech predictability (as defined by variability in RTL) play a role in children's disfluency rates?

Hypothesis

For the first research question, it was hypothesized that increased response time latency in parent-CWS interactions would result in fewer disfluencies made by the child who stutters. Previous research supports this hypothesis (Winslow & Guitar, 1994; Kelly & Conture, 1992). However, no former studies have been conducted on cohorts of this size; essentially, most prior research has used small cohorts or case studies.

For the second research question, numerous possible hypotheses were formulated. Perhaps parental turn-taking plays a significant role in the long-term facilitation of fluency. In that case, minor differences might emerge between the parent-child turn-taking profiles of children who recovered from stuttering (CWS-R) and children who remained persistent (CWS-P). In addition, one might expect to see a difference between the turn-taking latencies of parents of children who stutter and children who do not. In contrast, if changes in parental turn-taking only facilitate short-term fluctuations in fluency, we would not expect to see any systematic differences between parental turn-taking with outcomes of CWS-R and CWS-P.

Method

Participants

As a first-phase project, we analyzed all mother-child play interactions collected during Sample 1 of the Illinois International Stuttering Research Project (Yairi & Ambrose, 2005; now publicly available at FluencyBank (www.fluency.talkbank.org)). Sample 1 of the IISRP data contains 80 files consisting of a mother-child play interaction with matched audio files. Thirty-nine were with children who recovered from stuttering (CWS-R), while fourteen of the files were interactions with children who remained persistent (CWS-P). Additionally, twenty-seven of the files were from children who did not stutter (CWNS). All files are in

TalkBank CHAT format, with audio linkage that enables PRAAT analysis to measure timing of selected acoustic segments. Although only children's speech was transcribed initially, University of Maryland researchers augmented files with transcription of the children's conversational partners.

Data Selection

For all Sample 1 files in which there was a mother-CWS play interaction, we examined 20 consecutive child utterances and 20 mother utterances. The utterances that were measured for RTL were the first 20 eligible utterances in the file. For the utterance to be considered eligible for analysis, the child needed to perform a meaningful speech act. Fillers such as uh and um and one word responses were not considered. In addition, if a child made the sound of a race car and the mother responded with something unrelated, that would not be counted. Additionally, to account for differences in paternal and maternal communication, we opted only to examine mother-child interactions (Berko Gleason, 1975).

Acoustical analysis

CLAN links segments of transcripts with portions of media using a procedure known as “bulleting”. Utilizing CLAN software, we re-bulleted the files to include the target mother and child utterances in a single bullet. Once the utterances existed on a single bullet, we utilized the "send to sound analyzer" feature on CLAN to transfer the bullet to PRAAT. PRAAT is a free, downloadable computer software program that allows for the reconstruction and analysis of acoustic signals (Lieshout, 2003). Using CLAN sonic mode with export to PRAAT, we segmented the speech waveform and identified the response-time latency between the end of the child's utterance and when the mothers began speaking. Response-time latency was measured in seconds; any parent overlap/interruption was coded as negative response-time latency.

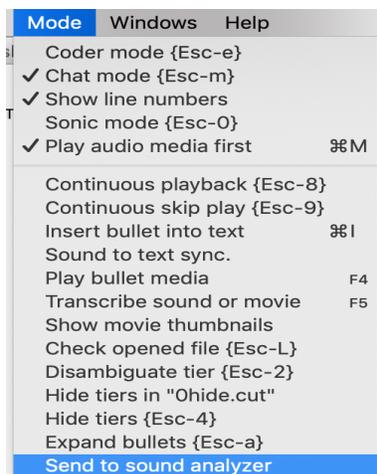


Figure 1. *Send to sound analyzer* feature on the CLAN application.

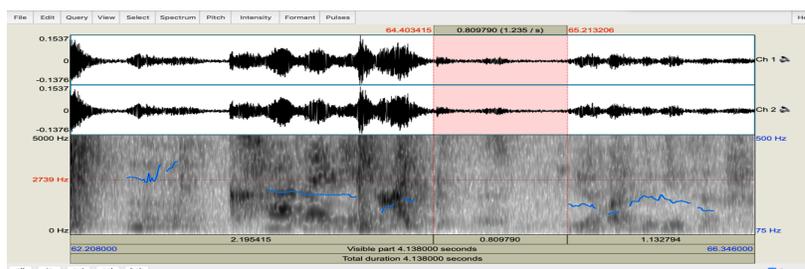


Figure 2. *PRAAT* analysis shows a dissection of the speech segment to determine RTL.

Fluency Analysis

. We then ran FluCalc, a function available through CLAN, which provided a list of fluent and disfluent words separated by type of disfluency. We analyzed all eligible mother-child dyads in Sample 1 for fluency measured utilizing a weighted SLD (stuttering-like disfluency) score for all utterances within that file (not just the 20 selected for RTL analysis). Based on

previous research, we expected to see a higher number of child disfluencies in a session when a shorter RTL was utilized.

We also hypothesized that parents who used longer RTLs consistently would foster fewer disfluencies in their child's speech because the child might better predict how much time was available for response. Thus, we took the mean and standard deviation of RTL for each individual parent-child interaction. This enabled us to look at the correlation between parental speech "predictability" and weighted SLD score.

Doing this enabled us to run a linear regression to determine whether RTL correlates with fluency. We expected decreased disfluencies in utterances where the RTL is longer. This would further assess the effectiveness of RTL in decreasing disfluencies at the time of implementation.

Statistical analysis

A statistical analysis was performed on each of the cohorts (CWS-R, CWS-P, and CWNS) to determine how the response-time latency of parents differed among the groups. This was done utilizing a repeated measures ANOVA. As noted above, relationships among maternal RTL and RTL variability were computed using regression analysis.

Results

To date, we have completed analysis of Sample 1 data. Our analysis consisted of 39 files from CWS-R and 14 files from interactions with CWS-P. In addition, 27 files from children who did not stutter were analyzed. From these 80 files, 1500 total data points were collected. Utilizing a repeated measures ANOVA, we analyzed these 1500 data points.

Findings show slight, but non-significant increase in parental response time latency for children who recovered, as compared to those who became persistent. In the 20 turn-taking

interactions analyzed for each mother-child dyad, it was found that parents of CWS-R used mean RTLs of .55 seconds, whereas parents of CWS-P used mean RTL times of .43 seconds.

Additionally, parents of CWNS used mean RTL times of .62 seconds (See Figure 1). These findings were non-statistically significant, suggesting no significant difference in RTL between dyads ($F = 2.35, df (2,59), p = .10, ns$). Although these findings were not statistically significant, the relationship between response time latency across individual parent-child interactions was highly statistically significant ($F = 2.58, df (2,59), p = .00005$). This suggests marked differences across parent-child dyads in conversational tempo that combine to yield only slight differences among groups.

s

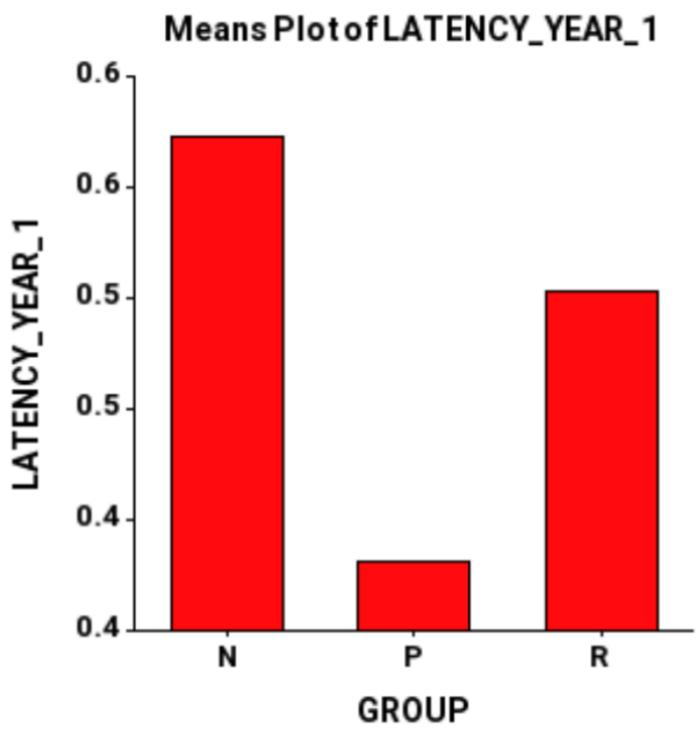


Figure 3. Mean parental RTL in seconds for each cohort.

A linear regression was used to determine whether the child's weighted SLD score was correlated with parent-child RTL in the completed files. The correlation between mean latency and weighted SLD was -0.0145 (See Figure 2). This correlation is both negative and non-significant ($r^2 = .0002$, $p = .677$, ns). This finding suggests that length of parents' time between speaking turns does not facilitate better fluency during the same session.

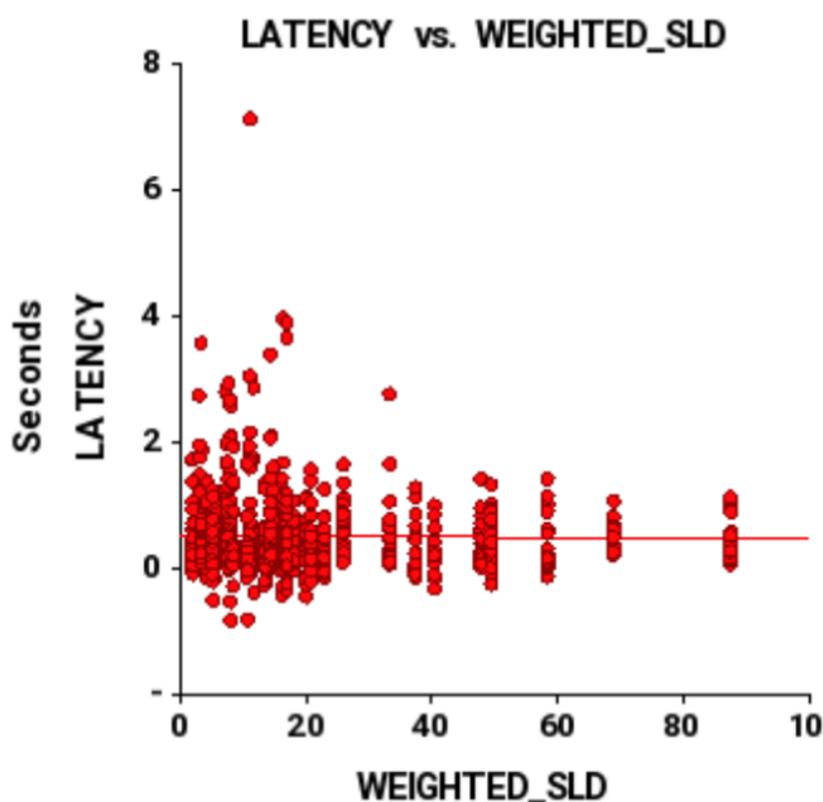


Figure 4. *Linear regression plot of mean latency times and SLDs of individual CWS.*

Finally, we used a linear regression to analyze the correlation between parental speech predictability (as defined by the standard deviation of RTL) and total stuttering-like disfluencies in the child's speech. Stuttering-like disfluencies vary from typical disfluency by inclusion of behaviors such as blocking or prolongation (Yairi & Ambrose, 2005). The correlation between

standard deviation of response time latency and child total SLD score was 0.2447. This correlation was non-significant ($r^2 = .006$, $p = .1630$, ns). This finding suggests that variability of RTLs, it does not have a noticeable effect on fluency during the same session.

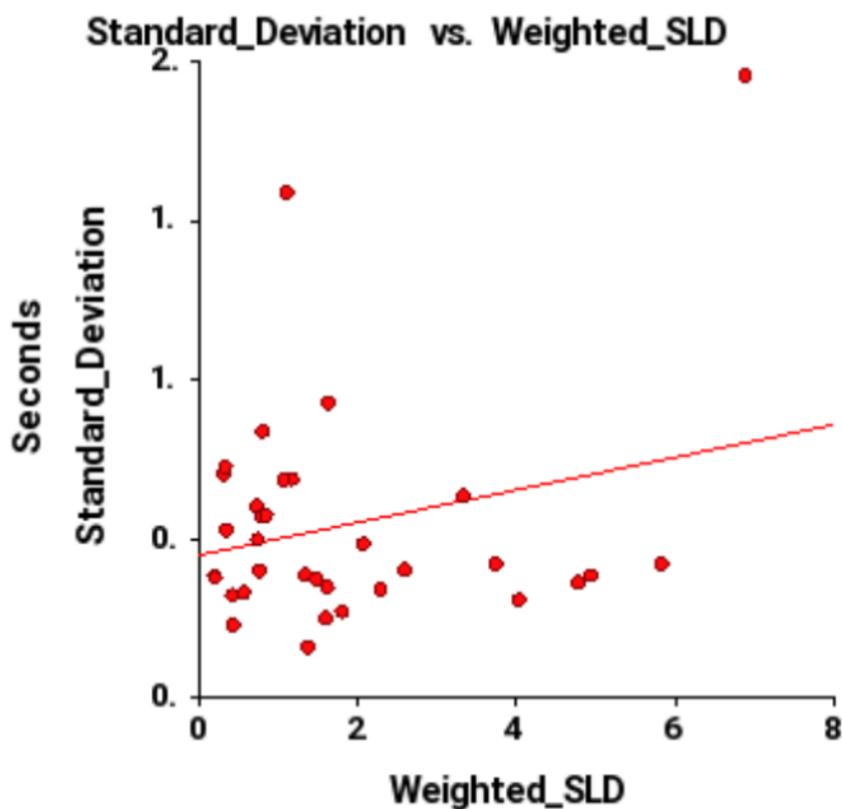


Figure 5. *Linear regression plot of standard deviation latency times and SLDs.*

Discussion

Parents are frequently advised to change the way that they interact verbally with their young CWS, and a recent survey (Panico, et al., 2021) reports that SLPs consider "educating parents to reduce communication demands" to be one of the most common situations they encounter in work with preschoolers who stutter. The list of strategies for reducing demand includes, among other approaches, lengthening response-time latencies (RTL). However, despite

common advisement to parents, a limited literature links parental RTL to fluency in CWS, both during individual interactions, as well as to long-term outcomes. Nevertheless, parents are encouraged to alter turn-taking strategies when interacting with CWS (e.g., "Seven Tips for Talking with Your Child," <https://www.stutteringhelp.org/7-tips-talking-your-child-0>). Analysis of the unique longitudinal IISRP dataset has the potential to either strengthen or diminish the evidence base for such this component of parent counseling.

In this sample, all parents and children provided baseline conversational play data before investigators instructed all parents of CWS to use a list of strategies that included taking longer time between conversational turns. Because this study was carried out before common consumer use of the Internet, we can be somewhat confident that parents did not have access to these strategies before entering the study.

Prior studies have analyzed the effect of RTL on fluency in highly structured environments (e.g., Newman & Smit, 1989; Winslow & Guitar, 1994; Meyers & Freeman, 1985). Our study used free-play naturalistic samples. We asked whether or not RTL played a role in fluency at stuttering onset before parent counseling.

Our results do not appear to support this advice; differences among groups in RTL were non-significant, as were correlations within sessions for variability in RTL and child fluency. Results from Year 1, prior to parent counseling, suggest that the most variability between RTL existed across individual parent-child interactions.

We found no evidence that, at stuttering onset, parent turn-taking latencies differ between groups of children who will recover and those who will not. In addition, our research does not appear to support the notion that, at stuttering onset, before advisement, parental RTL plays a

role in the short-term facilitation of fluency. There was no correlation between RTL or consistency of RTL and children's stuttering rate during the same sessions.

Limitations

As with any other study, this one did have limitations. First, we did not have the ability to collect these speech samples ourselves. This limited our control over how the samples were collected and whether they were representative of typical parent-child interaction within that specific family. We were also unable to gather information about the speech environment present in the home of the child. These samples were taken in a foreign environment with new people present, which may have resulted in higher anxiety or unnatural behavior among the children and parents. No outside information is available about the children other than what presents itself in the archived speech samples, which were used as a proxy of the parent-child interactions outside of the clinic.

The number of utterances we could analyze were limited due to the time-consuming manner in which these data must be analyzed (exporting utterances to waveform measurement utilities). We also analyzed only the first 20 mother-child interactions in each sample; this may not give us a large enough sample to see the impact of response-time latency entirely. We also measured fluency across the entire sample, not only those utterances for which we had computed acoustical information. We also limited our attention to mothers. Whether father-child interactions differ among groups could not be addressed in this study.

We also selected RTL as the sole measure to evaluate in this study. It is possible that RTL adjustment, when combined with other types of advice, such as slowed speech rate or simpler

utterances, is part of an effective treatment to reduce stuttering. In ongoing work, however, using the same data set, parental language complexity does not appear to differentiate between the CWS who recover and do not (Burns, 2022).

Future Directions

In the IISRP study, parents were advised to alter their speech behaviors to maximize their child's fluency; however, this advisement was not provided until after Sample 1. We plan to analyze Sample 3 for the same variables. This allows us to examine whether profiles of RTL changed over the course of the IISRP study, particularly in response to advice. In doing this, we could also analyze whether the child's fluency increased as the parents adjusted their RTL and presumably reduced any interrupting behaviors.

In addition, we are curious to see how consistency in parental response-time latency, plays a role in reducing disfluencies. Newman and Smit (1989) used controlled latencies of either one or three seconds. The consistency in limited types of RTL variations used by parents may have played a role in reducing conversational pressure.

Concluding Thoughts

In sum, one piece of common advice given to parents of CWS (increase RTL, or "count to 2 before responding to your child" <https://myhealth.alberta.ca/speech-language-hearing/stuttering/learn-more/when-a-child-stutters-what-you-can-do-to-help>) does not appear to play a facilitative role in children's fluency close to stuttering onset, or eventual stuttering persistence or recovery. If confirmed by further research, this could have wide-reaching ramifications for clinical practice with young children close to stuttering onset.

In asking parents to modify speech behaviors, clinicians may also unknowingly suggest a primary overarching goal of therapy is to reduce disfluency in CWS. This sends the message that stuttering is to be avoided and represents a failure of therapeutic intervention. In recent years, a new framework for stuttering therapy has emerged called Avoidance Reduction Therapy. The idea is that when individuals who stutter approach a situation, they often fear what people will think and this leads to avoidance on many levels. Avoidance reduction and the act of embracing stuttered moments have been shown to reduce the speaker's conversational "self-pressure". This approach to therapy redefines "good" and "bad" and teaches one to be comfortable with their stutter (Sisskin & Baer, 2016). Rather than encourage parents to work towards reducing or eradicating stuttering in the child's speech, it may be more useful to educate parents and children in acceptance of stuttering and ways to move past stuttering moments more easily and with fewer adverse secondary behaviors.

Our research might seem to support alternative therapy options, such as acceptance, as opposed to ones targeted at reducing disfluency and managing stuttering. Like any techniques or approaches, these take time to instruct and counsel, and could profit from time otherwise used to advise parents in techniques with poor evidence-base. We might advise that parents equip themselves with tools to build their child's confidence as a person who stutters. Regardless of whether a child persists or recovers, their sense of confidence will carry them through life as conversationalists (Sisskin & Goldstein, 2022).

References

- Ambrose, N. G. (2004). Theoretical Perspectives on the cause of stuttering. *Contemporary Issues in Communication Science and Disorders*, 31(Spring), 80–91.
https://doi.org/10.1044/cicsd_31_s_80
- Berko Gleason, J. (1975). Fathers' speech and other strangers: men's speech to young children. In D. P. Dato (Ed.), *Developmental psycholinguistics: theory and applications* (pp. 289–297). Washington, D.C.: Georgetown University School of Languages and Linguistics.
- Bernstein Ratner, N. & Guitar, B. (2006). Treatment of very early stuttering and parent-administered therapy: the state of the art. In Bernstein Ratner & Tetnowski (Eds.) *Current issues in stuttering research and practice*. Mahwah, NJ: Erlbaum. (pp. 99-124).
- Bernstein Ratner, N. (1993). Parents, children, and stuttering. *Seminars in Speech and Language*, 14(03), 238–250. <https://doi.org/10.1055/s-2008-1064174>
- Bloodstein, O., Bernstein Ratner, N. & Brundage, S. B. (2021). *A Handbook on Stuttering* (7th ed.). San Diego: Plural.
- Burns, M. & Bernstein Ratner, N. (2022). Role of language complexity in reducing disfluencies in CWS. In Wagovich, S. (Ed.) *Joint World Congress on Stuttering and Cluttering Proceedings*.
- Franken, M.C. & Laroes, E. (2021). *RESTART-DCM Method*. Revised edition 2021.

<https://www.restartdcm.nl>

Guitar, B., & McCauley, R. J. (2011). *Treatment of stuttering: Established and emerging interventions*.

Baltimore, MD: LWW.

Kelly, E. M., & Conture, E. G. (1992). Speaking rates, response time latencies, and

interrupting behaviors of young stutterers, nonstutterers, and their mothers. *Journal of*

Speech and Hearing Research, 35(6), 1256–1267. <https://doi.org/10.1044/jshr.3506.1256>

Kelman, E., & Nicholas, A. (2020). *Palin parent-child interaction therapy for early childhood*

stammering. Routledge & CRC Press. Retrieved February 14, 2023, from

[https://www.routledge.com/Palin-Parent-Child-Interaction-Therapy-for-Early-Childhood-Stamm](https://www.routledge.com/Palin-Parent-Child-Interaction-Therapy-for-Early-Childhood-Stammering/Kelman-Nicholas/p/book/9780815358329)

[ering/Kelman-Nicholas/p/book/9780815358329](https://www.routledge.com/Palin-Parent-Child-Interaction-Therapy-for-Early-Childhood-Stammering/Kelman-Nicholas/p/book/9780815358329)

MacWhinney, B. (2000). *The CHILDES project: tools for analyzing talk*. 3rd Edition. Mahwah,

NJ: Lawrence Erlbaum Associates

Meyers, S. C., & Freeman, F. J. (1985). Interruptions as a variable in stuttering and disfluency. *Journal*

of Speech, Language, and Hearing Research, 28(3), 428–435.

<https://doi.org/10.1044/jshr.2803.435>

Millard, S. K., & Cook, A. N. F. M. (2008). Is parent–child interaction therapy effective in

reducing stuttering? *Journal of Speech and Hearing Research*, 51(3), 636–650.

[https://doi.org/10.1044/1092-4388\(2008/046\)](https://doi.org/10.1044/1092-4388(2008/046))

Newman, L. & Smit, A. (1989). Some effects of variations in response time latency on speech

rate, interruptions, and fluency in children’s speech. *Journal of Speech and Hearing*

Research, 2, 635-44.

- Packman, A., Onslow, M., & Attanasio, J. (2004). The demands and capacities model: implications for evidence-based practice in the treatment of early stuttering. In *Evidence-based treatment of stuttering empirical bases and clinical applications* (pp. 65–71).
- Panico, J., Daniels, D. E., Yarzebinski, C., & Hughes, C. D. (2021). Clinical experiences of school-based clinicians with stuttering: A mixed methods survey. *Perspectives of the ASHA Special Interest Groups*, 6(2), 356–367. https://doi.org/10.1044/2020_persp-20-00193
- Seven tips for talking with your child*. Stuttering Foundation: A Nonprofit Organization Helping Those Who Stutter. (n.d.). <https://www.stutteringhelp.org/7-tips-talking-your-child>
0?gclid=CjwKCAjwpKCDBhBPEiwAFgBzjwahrMWFzICJFreiiN76yHNpZDkuSl8YOc
WZwY6yIAdY1DHMjq6_eBoCdIgQAvD_BwE.
- Sisskin, V. & Baer, M. (2016, March-April). Treb: éliminer la lutte contre le bégaiement. *Ortho Magazine* (Elsevier). Vol. 22(123), 14-17.
- Sisskin, V., & Goldstein, B. (2022, June 13). *Avoidance reduction therapy for school-age children who stutter*. *Seminars in Speech and Language*.
<https://www.thieme-connect.com/products/ejournals/abstract/10.1055/s-0042-1742695>
- Starkweather, C.W. & Givens-Ackerman J. (1997). *Stuttering*. Austin, TX: Pro-ed.
- Starkweather, C. W., Ridener Gottwald, S., & Halfond, M. M. (1990). *Stuttering prevention: A clinical method*. Prentice Hall.
- Van Riper, C. (1992). *The nature of stuttering* (Second edition). Waveland Press.
- Van Lieshout, P., (2003, October 7). *PRAAT Short Tutorial: A Basic Introduction*. Stanford.edu.
https://web.stanford.edu/dept/linguistics/corpora/material/PRAAT_workshop_manual_v4
21.pdf.

Whelan, A. (2019, May 15). *5 tips to share with parents of preschoolers who stutter*. ASHAWire.

Retrieved April 8, 2022, from

<https://leader.pubs.asha.org/doi/10.1044/5-tips-to-share-with-parents-of-preschoolers-who-stutter/full/>

Winslow, M., & Guitar, B. (1994). The effects of structured turn-taking on disfluencies.

Language, Speech, and Hearing Services in Schools, 25(4), 251–257.

<https://doi.org/10.1044/0161-1461.2504.251>

Yaruss, J. S. (1997). Clinical implications of situational variability in preschool children who stutter.

Journal of Fluency Disorders, 22(3), 187–203. [https://doi.org/10.1016/s0094-730x\(97\)00009-0](https://doi.org/10.1016/s0094-730x(97)00009-0)

Yairi, E., & Ambrose, N. G. (2005). *Early childhood stuttering*. Austin, TX: PRO-ED.