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Stammering Research

A Journal Published by the British Stammering Association

Editor
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SUMMARY OF STEP BY STEP PROCEDURE FOR AUTHORING AN ARTICLE TO STAMMERING RESEARCH

1. Contact the editor with a brief outline of the proposed article. The editor and other board members make initial decisions only as to the suitability of the general area proposed. The primary function in this step is to ensure the topic is of sufficiently broad interest for, and within the remit of, the readership of Stammering Research. The intent behind this initial contact is to ensure authors do not spend time preparing articles on unsuitable topics. Review, empirical and theoretical work are all appropriate. Authors will be informed whether the judgemen4(e i)8e topiT

Formatting Accepted Publications in Stammering Research

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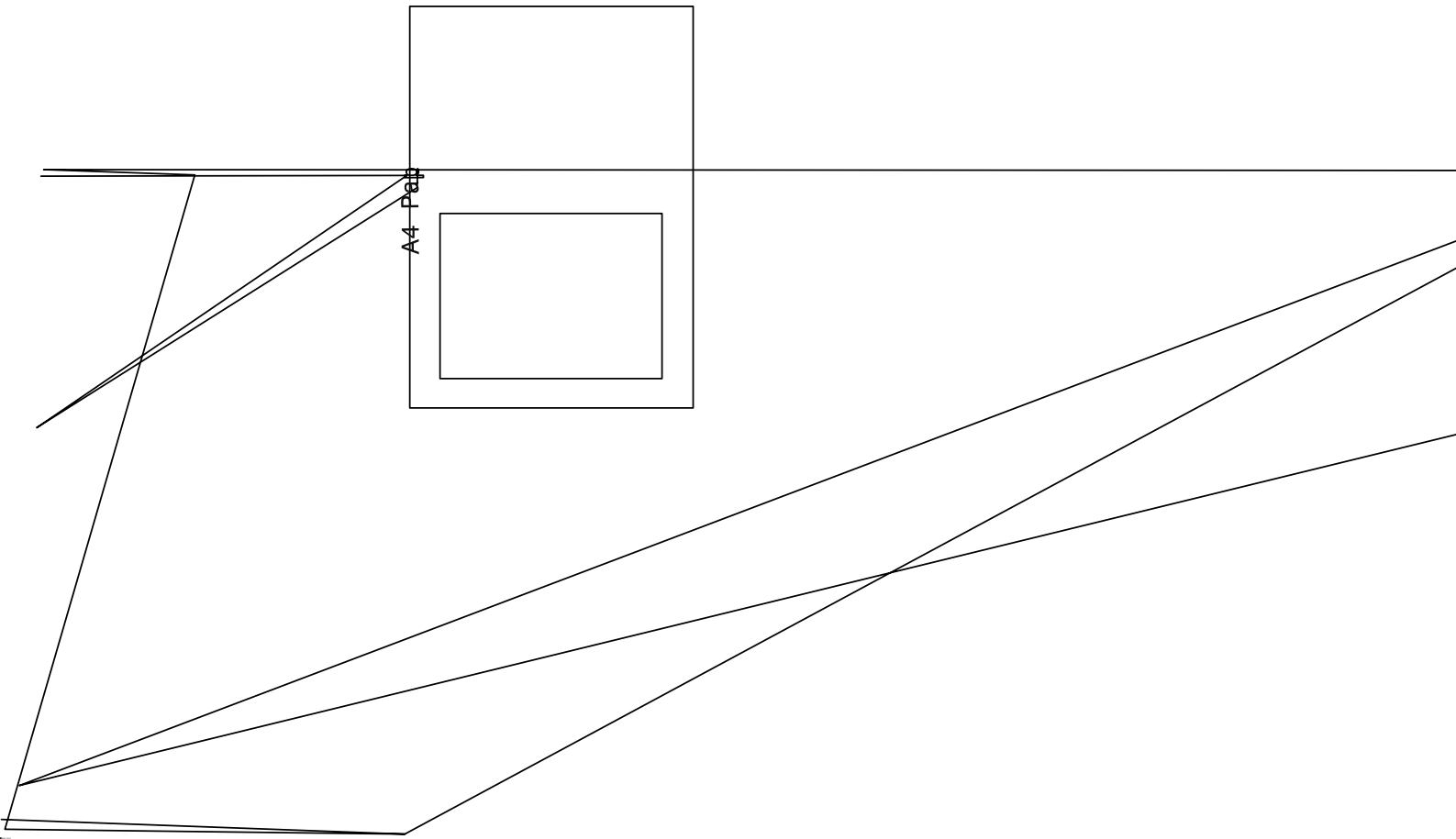
Abstract. A short abstract summarizing the significant content and contribution of the paper should be included here. This page illustrates and describes the format for paper submissions. Authors are requested to adhere as closely as possible to this format once an article is accepted. The abstract should be in Times New Roman 9-point font, justified with left and right margins indented 1 cm in from the margins of the main text.

1. Introduction

Articles and commentaries should initially be submitted in APA format. After an article or commentary is accepted, it needs to be prepared according to the journal format as indicated next. Articles and commentaries must be in Word format. An article will typically be up to **15,000 words**. A commentary should preferably be up to **1,000 words**. Authors may submit longer articles or commentaries for consideration but these may be reduced in length by the editor. Articles with fewer than 15,000 words and commentaries with fewer than 1,000 words are acceptable if the author can demonstrate sufficient content and contribution. Typically commentaries will have an abstract, usually only a single section in the text headed so as to identify the target article, and will not use diagrams or photographs. However, if an author needs to use more than one section heading and diagrams or figures, then they should follow the same instructions as for preparation of a target article. Each page of an article should consist of single column, of single-spaced text in a 16cm x 24cm column using **A4** or **US Letter** settings on your word processor as illustrated in Figures 1 and 2. Figures should be numbered consecutively and appear close to the text where they are mentioned.



All references should be cited using APA referencing styles. For example a publication which is referred to as support for a statement would be cited in the text this way (Howell & Sackin, 2002) whatever the number of authors. When an article is referred to directly in the text as in "… in the work of Howell and Sackin (2002) the …" only the year is placed in brackets. If there is more than one reference from the same authors in the same year then they are distinguished by using different letter designations after the year as in 1996a, 1996b etc. In the references below, examples are given of how a conference paper, a journal paper and a book would be listed. All references should be listed at the end of the paper using 9 point Times New Roman font.

All figures, and diagrams must be good quality black and white images suitable for readers to display and print. Colour illustrations or text can be used, but bear in mind readers who want to print articles may not have access to a colour printer. When an article is accepted, figures and pictures must be inserted in the word file in the exact position they will appear in the publication. Any format for figures, pictures and diagrams may be used provided they allow good quality reproduction for readers who wish to print off a copy.

References

Stammering Research

A Journal Published by the British Stammering Association

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COMMENTARIES

Editorial for Stammering Research

The journal Stammering Research is an international journal dedicated to dissemination of a wide spectrum of opinion on topics in this field of research. Target articles on specific topics are published along with open peer commentaries and responses by the original authors. All submissions (target articles, peer commentaries and authors' responses) are reviewed for both style and content.

The motivation for establishing this journal is that research into stammering/stuttering has reached a point where there are hotly debated positions on many topics. The goal is to provide a forum for informed exchange of opinion on these topics. Currently no other journal in the field offers the possibility of airing these matters in an open manner regulated according to normal standards of scientific exchange.

Where there has been discussion, this has got bogged down in polemical positions where nothing gets resolved, as was the case in the school-based approaches in psychology in the 1950s and 1960s. Other journals encourage submitted comments about particular articles that have appeared, and are usually addressed at empirical topics. These notes have their usefulness in terms of methodological problems they highlight but they rarely resolve substantive arguments between protagonists. Indeed, as soon as an article appears, one can often predict whether it will elicit a reply and, more often than not, who the author of that reply will be and what will be said. This situation can hardly be regarded as advancing the discipline. These head-to-heads are usually limited to authorities in the area and are rarely open to others who may wish to shed new light on a particular topic.

There is also relatively little opportunity in extant journals for reviewing past research or introducing new topics that have relevance for the area of stammering. New technology has raised issues about research in the area, and there is expertise in other fields of which researchers in stammering should be aware. These include brain imaging, neural plasticity and language genetics. There are also professional issues to do with definition of the disorder, assessment (developmentally and as a result of treatment) and updates are needed from time to time about developments in techniques currently used in the field (e.g. operant conditioning). The area has also started to rre67(a6(ewi)ll h fo6001(-6(e)67(a6(g sucer, a6 20)-b a6

TARGET ARTICLE

Partnerships between Clinicians, Researchers, and People Who Stutter in the Evaluation of Stuttering Treatment Outcomes

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Abstract. Numerous authors have commented the need for better treatment outcomes research in stuttering, particularly for treatments for adults who stutter, that address factors beyond fluency. This paper seeks to use the unique format of this journal to encourage a dialogue between clinicians, researchers, and people who stutter. Ten questions about treatment outcomes are raised, and answers are discussed from several perspectives. Questions address the identification of people who stutter, the goals of treatment, and how outcomes should be measured. The paper ends by issuing a challenge encouraging greater partnership between those with differing viewpoints to work together when studying stuttering treatment outcomes.
Key Words: Treatment Outcomes, Stuttering, Speech Therapy

1. Introduction

One of the most controversial topics in the field of fluency disorders has been the definition, measurement, and evaluation of treatment outcomes. Numerous authors, including those approaching the disorder from conflicting theoretical or philosophical perspectives, have emphasized the need for a better understanding of the results of stuttering treatment (e.g., Bothe, 2003; Blood, 1993; Blood & Conture, 1998; Conture, 1996; Conture & Guitar, 1993; Cordes, 1998; Ingham, 2003; Ingham & Riley, 1998; Onslow, 2003; St. Louis & Westbrook, 1987; Thomas & Howell, 2001; Yaruss, 1998a, 20

rigorously quantified and evaluated in the existing literature[3], so these are the approaches that are most often the focus of discussions about evidence-based approaches to treatment (again, see Bothe, 2003; Finn, 2003; Ingham, 2003; Langevin & Kully, 2003; Onslow, 2003).

Of course, it is difficult to argue with the evidence-based point of view. What rational clinician or researcher would state aloud that they use a treatment approach that has not been subjected to the rigors of empirical evaluation, replication, and peer-review? Still, there seem to be those who do exactly that—who choose to employ treatment approaches other than (or, more accurately, *in addition to*) those approaches that have been described in the existing treatment outcomes literature for improving speech fluency (Quesal, Yaruss, & Molt, in press; Yaruss & Quesal, 2002). Indeed, our field seems to be populated by individuals who, for decades, have argued that valid treatment strategies may be drawn from among a larger pool of techniques that are designed to go beyond changes to fluency alone (Bloom & Cooperman, 1999; Conture, 2001; Cooper & Cooper, 1991; 2003; Dell, 1993; Guitar, 1998; Gregory, 2003; Healey & Scott, 1995; Manning, 1999, 2001; Ramig & Bennett, 1995, 1997; Rustin & Cook, 1995; R Ramig, 19

sounds, syllables, and words of one syllable. These disruptions (c) usually occur frequently or are marked in character and (d) are not readily controllable.

II. Sometimes the disruptions are (e) accompanied by accessory activities involving the speech apparatus, related or unrelated body structures, ors t

stuttering can also vary widely, it seems reasonable to say that the person experiencing the stuttering should play a major role in identifying him- or herself as a person

1967). Just as clinicians collect fluency data, they should also collect data that reflect changes in the speaker's entire experience of stuttering. We will comment more on this below in our d

s, e.g., C
has certain advantages, for it is somewhat easier to measure and count moments of stuttering (or intervals of speech that may contain stuttering) than it is to capture changes in the intrinsic as

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RESEARCH COMMENTARIES

Commentary on Partnerships between Clinicians, Researchers, and People Who Stutter in the Evaluation of Stuttering Treatment Outcomes by J. Scott Yaruss and Robert W. Quesal

Grammatical encoding	Subconscious	Planned consciously to some degree
Phonation	Subconscious and relaxed	Tense and distorted
Articulation	Subconscious	Conscious, controlled and effortful

Broadening the stuttering research

Simmons-Mackie, N.N. & Damico, J.S. (1997). Reformulating the definition of compensat

Indications by parents of 'environmental' factors that differ between children who stutter and controls

Samantha Gooding and Stephen Davis

Studies have shown fairly convincingly that persons with a stutter often try to conceal their disorder (Bloodstein, 1995; Guitar, 1998; Shapiro, 1999; Van Riper, 1982). Such concealment can be identified in a child by observing whether they modify their speech by substituting simple words for more difficult ones. Obviously this can have an adverse effect on the child's speech and language development. Due to such substitutions, intended meanings can be hidden and can result in the child being misperceived as having low intelligence. If a child conceals a problem, this can then hinder the child's development even further (Newman, 1987).

Though these results suggest that the disorder will be manifest in 'environmental factors' (to use Yaruss and Quesal's term), the small amount of literatu

CLINICAL NOTES AND COMMENTS

Commentary on Partnerships between Clinicians, Researchers and People who Stutter in the Evaluation of Stuttering Treatment Outcomes

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Abstract. The role of the person who stammers in evaluating treatment outcomes is key, as highlighted in Yaruss and Quesal's article. This commentary describes the role of the person who stammers in further depth whilst also elaborating on issues related to choice of treatment approaches, the long-term goals of therapy, outcome measure tools and the ultimate vision for the provision of adult stammering therapy services.
Keywords: Person who stammers, stamm

The point ‘it is necessary to consider why treatments work

Comments on the implications of Yaruss and Quesal (2004) on seeking, and measuring outcomes of therapy from the perspective of an adult covert stammerer

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Abstract. Yaruss and Quesal (2004) wish to engage in dialogue with persons who stammer in order to incorporate their views into the 'stammering experience'. I would describe myself as a recovering covert stammerer, not currently in therapy. Given this qualification, I take up Yaruss and Quesal's invitation and examine their views in the light of my own past experience.
Keywords: Covert stammering, treatments for stammering.

1. Stammering Credentials

These comments are from the perspective of someone who has been a lifelong and mostly covert stammerer. However I have also spent a great deal of my working life organising and analysing data related to health and social issues and so will be commenting from

Finally, having taken more risks and gradually become more satisfied with the outcomes, there is the heightened sense o

Dahm's attempts to understand stuttering in terms of a broader model of speech/ language planning and production. Still, we would hope that empirical study, rather than conjecture, would guide further discussions of what i

s.

TARGET ARTICLE

Effects of delayed auditory feedback and frequency-shifted feedback on speech control and some potentials for future development of prosthetic aids for stammering

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Abstract. It has been known for at least a hundred years that the speech of a person who stammers becomes more fluent when alterations are made to the speaking environment. Alterations that lead to an improvement in fluency include a) noises that prevent a speaker hearing his or her own voice, and b) manipulations to the sound of a speaker's voice before it is heard. Examples of manipulations that have been made are introducing a delay, and shifting the voice up or down in frequency. The influences all these alterations have on fluent speakers and speakers who stammer, that have been established over the last century, are reviewed. In addition, the ways in which these phenomena have been explained for both fluent speaker and speakers who stammer are outlined. Several previous findings have potential significance for ways in which the fluency-enhancing effects of these alterations in speakers who stammer could be employed in clinical settings. These are highlighted and discussed, mainly in connection with the SpeechEasy™

they proposed that this source of feedback also led to the problem in speakers who stammer. They then designed a therapy that involved playing noise to speakers who stammer that was intended to mask out the problematic bone-conducted component of vocal ‘feedback’. They reported that fluency improved when the voice was masked in this way.

In another particularly imaginative study, Sutton and Chase (1961) manipulated when noise was on or off using a voice-activated relay while subjects read aloud. They compared the fluency-enhancing effects of noise that was on continuously, noise that was presented only while the speaker was speaking and noise presented only during the silent periods between speech. They found all these conditions were equally effective. It appears from this that the operative effect is not simply masking as there is no sound to mask when noise is presented during silent periods. However, Webster and Lubker (1968a) pointed out that voice-activated relays take time to operate and so some noise would have been present at the onset of words. Therefore a masking effect cannot be-act

auditory feedback monitoring in fluent speakers. There have been several reactions: 1) Some have argued for an auditory feedback processing mechanism that operates at the prosodic level (Donath, Natke & Kalveram, 2002; Kalveram, 2001; Kalveram & Jaencke, 1989). Prosodic processes operate over long time periods. Thus, the problem of obtaining auditory feedback early enough would not be such a problem if prosodic units are used for feedback control as it is for the view that syllables are the unit that is used. 2) Borden (1979) argued that auditory feedback is used in circumscribed situations. These include when language is being acquired (either developmentally or as a second language in adul

Ryan, 1974, 2001) the side effects of DAF would not matter. However, other authors such as Novak (1978) have reported that the after-effects of DAF (vowel lengthening) persist into post treatment speech, so would affect speech communication adversely. One other objection about DAF is that it presents no sound at word onset, which is mostly the place where people who stammer have problems (Wingate, 2002). Lack of an altered sound at onset of syllables may explain why DAF has more effect on the medial vowels than initial consonants.

In the UK, development of two portable devices that included sensible design ideas was taking place. These were, 1) t6 Tm(0.0851 Tw 10.02 0 0 10.02 90 680.3005 Tm2x)Tj10.02 0 0 1710.02 0 0 10.02 241.6916 7

(pure sensory) deficit at stage two. The two specific proposals made were that people who stammer have problems in dealing with bone-conducted sound (Cherry & Sayers, 1956) or that problems arise because the middle ear structures of speakers who stammer cannot transmit sound in the same way that those of fluent speakers do (Webster & Lubker, 1968b).

Cherry and Sayers' argument for problems in the bone-conducted route was based on the assumed similarity of stammered speech to DAF-speech in fluent speakers. Empirical studies that show that this is not so were reviewed above. Therefore, there is no basis to conclude that because sound delayed and transmitted through bone is more disruptive to fluent speakers than sound delayed and transmitted through air, speakers who stammer have problems dealing with sound transmitted through bone. Also, Howell and Powell (1984) compared Cherry and Sayers (1956) bone-conducted sound with actual bone-conducted sound and found marked differences. Cherry and Sayers' experimental manipulation created a sound that, though successful at disrupting fluent speech control, was nothing like bone-conducted sound. Once again this result shows that there are no grounds for concluding that speakers who stammer have problems in dealing with sound transmitted through bone.

The proposal that speakers who stammer have problems in transmitting sound through the middle ear system also failed empirical tests. Shearer's (1966) original work included very limited amounts of data. In an extensive study, Howell, Marchbanks and El-Yaniv (1986) were unable to find differences in middle ear operation between people who stammer and fluent controls (both during listening tests and during vocalization). Abnormal middle ear muscle operation seems, then, an unlikely basis for expl

used in the long term. First, devices that use FFT methods to produce the frequency shift will introduce a timing delay, and this delay may have deleterious effects on speech control, as mentioned above (Novak, 1978). In a technical description of the SpeechEasy™ device (Stuart, Xia, Jiang, Jiang, Kalinowski, & Rastatter, 2003), no details of the temporal delay associated with FSF were given though, based on Howell and Sackin's (2002) observations, these delays may not be negligible. If there are significant delays in the device that carry over into speech when the device is not used, it ought to be redesigned to minimize delay using a speed changing met

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the peripheral level). An implication of this position is that there is no single factor that explains both how ARAI and motor processes affect fluency (underlined by their dismissal of Costello-Ingham's, 1993, proposal that rate underlies ARAI and prolonged speech procedures). Consistent with the Kalinowski group's view, there do seem to be grounds for considering that the time courses of ARAI and operant procedures differ (e.g. the Lidcombe

synchrony), by changing operation of the timekeeper. See Howell and Sackin (2002) for evidence that supports the view that DAF affects a timekeeping process in the cerebellum.

3) ARAI is not effective because it affects a central process that links speech perception and production. Many ARAI manipulations that affect fluency of people who stammer are not speech sounds. Examples include Howell and Archer's (1984) noise s

treatment speech (Novak, 1978). There may be long-term effects of FSF (Houde & Jordan, 1998) not evident in the current short-term studies that impact on long-term fluency. Any procedure that restricts exposure to ARAI while at the same time maintaining high rates of fluency may be advantageous (see the above discussion of the Hector aid and Howell et al., 1987, experiment 4).

Targeting disfluencies for a dose of ARAI also opens up possibilities that allow effects (known in

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Zimmerman, S.,

RESEARCH COMMENTARIES

Are alerts sufficient to smooth speech?

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Abstract. Howell (2004) raises the question whether alterations of recurrent auditory information (ARAI) operate at a high or a low central nervous system level to achieve fluency enhancing effects in persons who stutter. Recent neuroimaging findings on stuttering treatment effects

activation profile in both speech motor and auditory cortical regions, together with an improved fluency after therapy, could be associated with an improved communication between Broca's area and the speech motor cortex, and should therefore correct the chronological order in the steps leading to speech production. Further electrophysiological experiments are desirable to confirm this hypothesis.

The view of the Kalinowsi group of a central working me

Can altered auditory information affect planning? Evidence from music performance

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Abstract. In the EXPLAN architecture (target article), altered recurrent auditory information (ARAI) is presumed to influence the execution but not planning of speech. This conclusion stems from evidence that the influence of ARAI is limited to timing relationships between perception and action. However, recent evidence documents disruption of musical keyboard perf

contents implemented by Pfordresher (2003) and Finney (1997). Obviously, a

Howell, P. (2004b). Assessment of some contemporary theories of stuttering that apply to spontaneous speech. *Contemporary Issues in Communicative Sciences and Disorders, 39*, 122-139.

Howell, P., & Archer, A. (198niArch2 2h5it136 760.8206 Tm(to Tj104625 76e6Tm(2 246436 7-0.02 125.450 732.8406 Tm(

What sort of cerebellar processing problem do people who stutter have?

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Abstract. Howell (2004) promotes his EXPLAN theory as an account of why alterations to the listening environment lead to improvements in speech control in speakers who stam

contingency judgment experiments when the outcome following a response is not a biological reinforcer, as is the case with ARAI (see

extinction. *Behavior Therapy*, *4*, 386-391.
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Reed, P., & Howell, P. (2000). Presentation of

The response of patients with Parkinson's Disease to DAF and FSF

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Abstract. Increased speech rate is a common symptom of Parkinson's Disease (PD) and can hav

the more widely researched developmental type of stammer. However, an interesting finding was that neither of the speaker groups showed any stammering events in the FSF condition.

4. Conclusions

In conclusion the current results concerning intelligibility were unexpected, as most of the patients showed deterioration rather than the previously reported dramatic improvements in intelligibility. In addition, the overall lack of difference between HPD and LPD group contradicts the trends identified by Rousseau et al (2002). As intelligibility is not a measurement parameter that has been examined in relation to severity of stammering, no comparison can be made in this case.

Similar to persons who stammer, FSF evoked a performance closer to the no feedback state, i.e. the higher naturalness score compared to DAF and FSF resulted in the greatest benefits for PD speakers when both intelligibility and naturalness were considered together.

The

Ryan, B. (1974). *Programmed stuttering therapy for children and adults*. Springfield: C. C. Thomas.
Ryan, B. (2001). *Programmed stuttering therapy for children and adults*. (2nd

on selective occasions is that this helps to prevent auditory insult, and may promote transfer potential, given that conversational exchanges are likely to occur while the device is off.

An issue not discussed by Howell (2004) is the changing role of the pathologist when prosthetic treatment devices are used. In intensive therapy, or therapy given during regular clinical appointments, the therapist does not walk out the door with the person who stutters, whereas the device does. I have witnessed setbacks with users of SpeechEasy™ because there is no speech-language pathologist available for immediate help. There needs to be better understanding about what users need to learn about how the device can best be used outside the clinic. Co

Clinical Research into use of the SpeechEasy™ device

Sarah Bartles,

Effects of using an Edinburgh masker for a period of 25 years

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Abstract. One of the concerns that is commonly voiced about ARAI is that there is no information about the effects on speech control of being subjected to altered sound. I have used an Edinburgh masker for 25 years. I offer my impressions about the continuing effectiveness of the masker.
Keyword: Edinburgh masker.

1. Comments on Howell (2004)

Howell's (2004) article raised the question about how effective ARAI devices will prove with long term use. I offer these observations about my experience with the Edinburgh masker that I have been using continuously for about 25 years. My stammer began in 1969, at the age of 36. I found my previous fast, but fluent, speech was interrupted by a need to pause or hesitate. Within a few weeks, the hesitation had become a stammer. This was confirmed by a speech therapist (physical causes were exclude by an Ear, Nose and Throat specialist). I received several forms of treatment over a period of 10 years. None of these treatments were successful.

In 1979, I discovered the Edinburgh Masker. I fairly quickly obtained one with the help of my General Practitioner, a Speech Therapist and an Ear, Nose and Throat consultant. As Howell (2004) describes is the case with DAF and FSF, the Edinburgh masker was an immediate success. Twenty five years later it is still effectiv

AUTHOR'S RESPONSE TO COMMENTARIES

Response to commentaries on 'Effects of delayed auditory feedback and frequency-shifted feedback on speech control and some potentials for future development of prosthetic aids for stammering'

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Abstract. Each of the nine commentaries is responded to. There was a consensus across the commentaries that attention ought to be given to squaring behavioral and imaging findings with respect to a) what CNS structures ARAI affects, b) what CNS structures operate differently in speakers who stammer when they are fluent and when they are disfluent. A better understanding of how ARAI devices control the fluency of speakers who stammer was also deemed necessary. Specific issues to address in this connection are what parameters a) facilitate transfer, b) are optimal for speech rate control, and c) are most acceptable to clients. All these issues require evidence-based practice drawn f

A second point Neumannn and Euled E Ne

there is consensus that cerebellar activity changes when fluency is induced in speakers who stammer. One note of cautio

the plan ready in time for execution. If the structures that are responsible for organizing output are damaged (according to EXPLAN, the cerebellum), this does not mean that the affected individuals will then stammer but rather that these lesions would have catastrophic effects on speech output because the structures responsible for coordinating speech plans with executed forms are absent. Consistent with this, there is a wealth of literature that various types of dy

It would be easy to stop at this juncture and conclude that the leading competitor to my EXPLAN model as an account of ARAI, Kalinowski's mirror neuron model, lacks support from behavioural, neurophysiological (Neumann & Euler, 2004) and clinical outcome (Ryan, 2004) data. The question ought to be raised, however,

hypothesis which suggests they affect different mechanisms in the brain and would, therefore, be expected to operate in independent and different ways.

The next two points

when planning music (and, by implication, speech), there is also a recognition in his commentary concerning the importance of timing. The only other commentary that may be taken to imply that processes other than those involved in speech-timing may be important in leading to stammering is Neumann and Euler's. These authors noted abnormalities in cerebral pa

(Reed, 2004) and whether the ideal that some researchers set (speech without an aid) is regarded by sufferers as a necessary goal (Miller, 2004) as Reed and I assume.

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