Van Riper's Block Modification Techniques:
Might they sometimes do more harm than good?

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November 2023

stammeringresearch.org

If you have ever had any speech therapy for stuttering, there is a good chance that you will have been introduced to Block Modification Therapy and to at least one of the three block modification techniques that Van Riper developed, namely "Cancellations" "Pull Outs" and "Preparatory Sets".

When I was a teenager (back in the 1970s), these were the techniques that my speech therapist encouraged me to adopt, and when I finally undertook a degree in speech therapy (in the 2000s), Block Modification was the speech therapy approach that our stuttering-module lecturer portrayed as the gold standard.

In fact, in the UK and USA, for several decades, Van Riper's Block Modification Therapy has indeed been the predominant speech therapy approach offered by speech therapists to older children and adults who stutter. However, a recently published research study (De Nardo et al., 2023) has found that listeners evaluate block-modified speech more negatively than stuttered speech, and they are less likely to want to interact with people who use such speech. The findings of this, and other similar studies, raise questions regarding the possibility that in some speaking situations Van Riper's Block Modification techniques may potentially do more harm than good.

To investigate this possibility, in this article I shall first of all discuss the theoretical rationale behind Van Riper's Block Modification therapy and outline what it entails. I shall then describe research that has investigated its effectiveness, and I will discuss, in the light of this evidence, which aspects of the therapy are likely to be helpful and which may potentially do more harm than good. Finally, I will discuss the key differences between Van Riper's block modification techniques (Cancellations, Pull Outs, and Preparatory Sets) and a new block modification technique known as "the Jump" and explain why the Jump should be easier to employ, less likely to elicit negative (and potentially traumatising) reactions from listeners, and more likely to result in a lasting reduction of both the overt and covert symptoms of stuttering.

The Rationale behind Van Riper's Block Modification Therapy

As a teenager, following a chance encounter with an elderly recovered stutterer, Van Riper became aware that most of his stuttering-related communication problems stemmed not so much from his stuttering per se, but rather from his attempts to avoid it or to push through it. With this awareness came the idea that if he allowed himself to stutter mildly and avoided the temptation to try to avoid stuttering or to use force or tricks to push through it, his stuttering symptoms might become less severe and may potentially no longer pose such an obstacle to communication.

On experiencing how his own stuttering did indeed become substantially less severe when he adopted this new approach, he then devoted several decades to researching how this approach

could best be taught to other people who stutter. As a result, he developed an entirely new approach to stuttering therapy which ultimately became known as "Block Modification" and which is often referred to as the "stutter more easily" or "stutter more fluently" approach. Before Van Riper developed this new approach, most forms of stuttering therapy focussed on the prevention or avoidance of stuttering blocks. In contrast, Van Riper's Block Modification taught stutterers to accept their blocks and to find ways to work around them without resorting to the use of excessive force and without relying on tricks or distractions that in the long-term tend to do more harm than good.

Over a period of several decades, Van Riper accumulated a wealth of experience as he explored different ways of applying this new approach to a wide variety of people who stutter (Van Riper 1958). An important outcome of these years of experimentation was his realisation that, in order to gain a satisfactory and lasting degree of control over their stuttering, most of his clients who stuttered needed first of all to develop a much clearer awareness of what they actually did when they stuttered, and they also needed to become much less emotionally sensitive to it. And only then were they likely to be able to learn how to successfully employ the Cancellations, Pull-outs, and Preparatory Sets) that formed the core of his block modification approach to stuttering.

Having arrived at this realisation, Van Riper eventually formulated a comprehensive Block Modification programme, which is described in Chapters 9 to 13 of his (1973) book *The Treatment of Stuttering*, that included the following four stages:

1. **Identification** (helping clients to identify what exactly they do when they stutter)
2. **Desensitization** (reducing their negative emotions and feelings of shame associated with stuttering)
3. **Modification** (Modifying the way they respond to blocks and anticipated blocks)
4. **Stabilization** (preparing them for challenges that may arise in the future)

The first two of these therapy stages consisted largely of various forms of mindfulness and psychotherapy (although Van Riper never used these terms to describe them) and it was only after having successfully completed these first two stages that he considered most of his stuttering clients to be ready to start the third stage of therapy: Block Modification. Finally, once clients had successfully learned how to employ the various Block Modification techniques, they were then expected to undergo a fourth stage of therapy designed to provide them with sufficient understanding and knowledge of their condition to enable them to successfully confront the various challenges that are likely to arise once a stutterer's symptoms have gone into remission.

Van Riper's research suggested that his Block Modification techniques (Cancellations, Pull-outs, and Preparatory Sets) were only likely to result in a lasting remission of a client's stuttering problem if that client underwent all four of these therapy stages. In contrast, if the Block Modification techniques were provided in isolation and not accompanied by these other therapy stages, it would be less likely to result in a satisfactorily durable remission. It is important to bear this in mind, because although in recent years Block Modification Therapy has become one of the main types of therapy offered to people who stutter, the majority of therapists and institutions who offer this therapy do not offer the full therapy package that Van Riper offered to his clients. The main reason for this is that the time-commitment and the associated costs that the full package requires are simply too great.

Similarly, recent research that purports to have investigated the effectiveness of Van Riper's Block Modification Therapy has actually investigated the effectiveness of substantially truncated versions of it. Thus, it is important to bear in mind that the long-term outcomes of such truncated versions of

Van Riper's therapy may be less satisfactory than those of the original full therapy program – as described in Chapters 9 to 13 of Van Riper's (1973) book "The Treatment of Stuttering".

What does Van Riper's Block Modification Therapy involve?

Having successfully completed the Identification and Desensitization stages of therapy, the stuttering client should have become able to distinguish between their moments of "hard stuttering" (that involve struggle, use of excessive force, and other unhelpful secondary symptoms) and their moments of "easy stuttering"– which involve simple repetitions, prolongations, and/or blocks, and are essentially devoid of struggle. Moreover, they should have also developed the clear awareness that moments of easy stuttering do not constitute a significant obstacle to successful communication and are essentially benign, whereas moments of hard stuttering are a hinderance to successful communication and tend to elicit negative listener responses. Thus, instead of trying to teach clients to avoid stuttering altogether and to say their words perfectly fluently, Van Riper's Block Modification approach involves teaching clients simply to replace the moments of hard stuttering with moments of easy stuttering. Van Riper taught clients three ways of achieving this...

First, clients were taught "Cancellations" whereby, whenever they found themselves producing a "hard stutter" on a word, they should…

1. carry on hard-stuttering to the end of the word,
2. stop and let go,
3. repeat the word silently, this time voluntarily mouthing the same hard-stuttering movements, while paying full attention to the feelings in their mouths (i.e., paying full attention to the proprioceptive feedback), rather than to the sounds produced.
4. repeat the word silently a second time, this time voluntarily mouthing it gently, in slow motion using easy-stuttering (still paying attention to the proprioceptive feedback).
5. speak the word aloud in slow motion using easy-stuttering, keeping the focus of attention on the proprioceptive feedback.
6. Carry on to the remaining words.

The idea behind this sequence of repetitions is to only allow oneself to carry on to the next word after one has successfully said the problem word using easy stuttering. Van Riper reasoned that, in so doing, clients are reinforcing the habit of easy-stuttering on problem words (and therefore no longer reinforcing the habit of hard-stuttering on problem words). Consequently, the tendency to produce hard-stuttering in the future should reduce. Furthermore, shifting one's focus of attention away from auditory feedback and instead towards proprioceptive feedback reduces the tendency to make the inappropriate mouth movements that are one of the hallmarks of hard-stuttering.

Having successfully learned how to do Cancellations, Van Riper then taught clients how to do "Pull-outs" whereby, as soon as they find themselves producing a "hard stutter", they should…

1. Stop trying to complete the word, and instead voluntarily prolong the hard-stuttering posture they currently find themselves in.
2. Gradually change the hard-stuttering posture into an appropriate easy-stuttering posture
3. Using the easy-stuttering posture as a starting base, start to move forward again, gently, in slow motion, using easy-stuttering.
4. Continue-on to the remaining words.

Having successfully learned how to do Pull-outs, Van Riper then taught clients how to do "Preparatory Sets" whereby, whenever they find themselves anticipating a "hard stutter" on an upcoming word, they should…

1. Begin the feared word by adopting the articulatory posture (i.e., the preparatory set) that is appropriate for easy-stuttering on that word.
2. Say the word slowly and gently (with soft-contacts etc.).
3. Then continue on to the remaining words.

Van Riper pointed out that, after having been taught how to do cancellations, many of his clients spontaneously found themselves doing pull-outs and adopting preparatory sets for easy-stuttering even without any formal teaching. He suggested that this automatic progression quite likely tends to occur because easy-stuttering is strongly reinforced through the practice of cancellations, and so as soon as a client has learned how to stutter easily (i.e., how to do easy-stuttering), there is a natural tendency for easy-stuttering to replace the hard-stuttering. So, although he also actively taught clients how to do Pull-outs and Preparatory Sets, to a large extent the switch from hard-stuttering to easy-stuttering took on a momentum of its own.

Van Riper's Results

In *Experiments in Stuttering Therapy* (1958), Van Riper published detailed records of how his therapy gradually evolved over a period of 20 years. In each of these 20 years, his speech clinic (which also hosted a therapy training program for student therapists) took on an average of 9 new adult clients. Van Riper made a point of selecting clients with severe overt stuttering and poor prognoses. [1]

With the help of the student speech therapists, he provided these clients with intensive therapy, including both individual meetings and group therapy sessions, often on a twice-daily basis for a minimum of 1 semester and more often for an entire year. He then followed up each year's intake for a further 5 years to assess the durability of each individual's progress. Each year the approach he took changed somewhat to take into account the apparent successes and failures of previous years. He assessed the results in a purely qualitative way and provided detailed descriptions of the progress made by each year's intake of clients at his speech clinic. Detailed descriptions of these 20 years of research, together with outcome and follow-up data were subsequently published in the book chapter entitled *Experiments in Stuttering Therapy* (Van Riper 1958). I have worked through the first 13 years of this data[2] and calculated the proportion of clients who he classified as "successes"[3] and as exhibiting a marked improvement compared to when they initially enrolled on the therapy course. Although the results varied quite considerably from year to year, overall, at the end of therapy 31% of his clients he described as "successes" and 41% as markedly improved. At the 5-year follow-up 34% of the clients he had been able to re-contact he described as "successes" and 30% as markedly improved. These results, if his data are accurate, are impressive to say the least.

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[1] Van Riper (1958 pp298-299) clarified that "No fees were ever charged for any diagnostic or clinical services, and any stutterer was always free to leave without obligation".

[2] Van Riper (1958) only supplied 5-year follow-up data for the first 13 out of the 20 years of therapy described in the book chapter.

[3] In *The Treatment of Stuttering* (1973 p390) Van Riper provided the following description of the criteria he adopted for "success"...

"First of all, the stutterer must be speaking better than this author in all situations. This criterion is used for lack of any other effective means of comparison, and I have spoken to groups of my colleagues both formally and informally so frequently and in so many places for so many years that it seemed to me as good an objective measure as any I could invent. We might perhaps define this as 0.5 on the Iowa scale of severity. Secondly the stutterer must not be avoiding words or speaking situations. Thirdly, his stuttering must not be interfering with his social or vocational adjustment. Fourthly, his situation and word fears must be pretty close to zero. Finally, his stuttering must present no concern to himself or others. For severe adult stutterers these criteria are stringent, and perhaps I have set them too high. The large majority of our cases who did not reach these criteria are markedly improved over clinic entrance and should not be considered to have failed."

It is noteworthy that in his (1958) book-chapter, Van Riper also provided some details about his own stuttering history and recovery. In particular, he noted that he was a severe stutterer from its onset at 22 months right through to 28 years of age. During this time, he was repeatedly enrolled onto courses of speech therapy and psychotherapy, none of which resulted in any lasting improvement to his speech. With regard to his own recovery, he noted…

> *The author believes that his present speech adequacy derives from his own efforts to modify his stuttering symptoms so that he could stutter fluently, without gross abnormality or interruption, and from a security derived from a good marriage and professional status. Selah!* (Van Riper 1958 p276)

The adoption of Van Riper's Block Modification approach by Speech Therapists

The uniquely detailed descriptions of Block Modification Therapy that Van Riper has published in *The Treatment of Stuttering* (1973) and *Experiments in Stuttering Therapy* (1958) have almost certainly played a key role in the subsequent enthusiastic uptake of Block Modification Therapy by speech pathologists and therapists around the world. However, as I mentioned previously, for practical reasons, the Block Modification Therapy provided by therapists since Van Riper has invariably been significantly shorter in duration and substantially less comprehensive in content.

Unfortunately, there have been very few studies of the effectiveness of the more recently offered Block Modification Therapy programmes, and as far as I can ascertain, no studies of Block Modification Therapy outcomes have ever published follow-up data beyond a 12-month period after cessation of therapy.

The three most comprehensive studies of Block Modification Therapy outcomes that have been published in recent years (Blomgren et al., 2005; Irani et al., 2012; Everard & Howard 2018) all found that the majority of participants who took part experienced significant benefits in terms of reduced fear of stuttering, a reduction in the tendency to avoid speaking, and a reduction in anxiety. In two of these studies, participants also self-reported a sustained reduction in the severity of their physical secondary symptoms. Furthermore, the majority of participants self-reported that they were still experiencing these benefits when interviewed at a six-month post-therapy follow-up.

An unanswered question with regard to all of these Block Modification programmes is "What specific aspects of these programmes contributed most to the ongoing benefits that clients experienced? For example, did they benefit most …

- from the psychotherapy component of such programmes?
- from the increased understanding of stuttering that such programmes promoted?
- from their increased awareness of what they do when they stutter (i.e., from the "identification" component of the programme?
- from developing the belief that "It's OK to stutter mildly"?
- from the 3 Block Modification techniques: Cancellations, Pull-outs, and Preparatory Sets?

The available data does not enable us to answer these questions. However, research evidence from two recent studies, which have focussed specifically on Van Riper's three Block Modification techniques, raises important doubts about the therapeutic value of these three techniques …

1. a study by Manning et al. (1999) – found that listeners reacted more negatively to speech that contained Cancellations and Pull-outs than to speech that contained uncontrolled stuttering.

2. A study by De Nardo et al. (2023) – found that listeners reacted more negatively to speech that contained Pull-outs and Preparatory Sets than to speech that contained uncontrolled stuttering. (this study did not investigate Cancellations).

Thus, for example, in the Manning et al. study, participants who listened to recordings of a speaker stuttering in an uncontrolled way provided significantly more positive personality ratings for him compared to the participants who listened to recordings of the (same) speaker producing pull-outs. Similarly, in the De Nardo et al. study, listeners' responses indicated that they would be significantly less willing to have repeated conversations with a speaker who used preparatory-sets or to introduce him to their friends compared to a speaker who produced unmodified stuttered speech. Thus Manning et al. suggested that stutterers who use these Block Modification techniques may face significantly greater social penalty than stutterers who do not modify their stuttering. De Nardo et al. suggested that a possible explanation for these findings was that listeners may have mistaken speakers' use of these Block Modification techniques for symptoms of psychological illness.

Interestingly, the findings of these two research papers directly contradict Van Riper's own findings (Van Riper 1973, Ch.12 pp301-347), that listeners consistently responded *more positively* to all three Block Modification techniques than they did to uncontrolled stuttering.

If De Nardo's and Manning's findings are accurate, they suggest that, contrary to what Van Riper believed, all three Block Modification techniques may reinforce stutterers' fears of listener rejection and communication failure and thus may also reinforce their tendencies to continue to stutter.[4] These findings raise the question as to whether or not Block Modification Therapy programmes could perhaps be rendered more effective if the Block Modification techniques were further refined with a focus on making block-modified speech more palatable to listeners, or even to remove the Block Modification techniques altogether and just focus instead on the other parts of the Block Modification programmes – such as psychotherapy, Identification, and desensitization.

A closer look at the De Nardo et al. and Manning et al. findings

It is possible that the differences between Van Riper's findings and those of Manning et al. and De Nardo et al. can potentially be explained by the fact that Van Riper selected severe stutterers for his therapy programme whereas Manning et al. investigated mild stuttering, and De Nardo et al. investigated moderate stuttering. Thus, it is possible that listeners found block modification techniques less unpleasant to listen to than severe stuttering, but more difficult to listen to than mild or moderate stuttering. It is also likely that, of the three block modification techniques, listeners tend to dislike Cancellations the most, Pull-outs somewhat less and Preparatory Sets least. This would reflect how long each of these techniques takes to enact and also the fact that with cancellations, often the listener successfully recognises the word the speaker has stuttered on, yet the speaker continues to repeat that word regardless of the fact that it no longer serves any communicative function. Thus, when a speaker engages in Cancellations, his listeners are likely to perceive that he is no longer really trying to communicate a message but rather he is practicing his speech or trying to prove to himself that he can say the word he is stuck on.

Making Block Modification techniques more palatable – Personal experiences

The findings of De Nardo et al. and Manning et al. reflect my own personal experiences of trying to employ Van Riper's Block Modification techniques in real everyday-life speaking situations.

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[4] For a discussion of the relationship between fear of communication failure and stuttering see Brocklehurst's 2016 Article "Stammering and Post-traumatic Stress: Some food for thought https://stamma.org/about-stammering/research/about-stammering/stammering-and-post-traumatic-stress-some-food-thought

Specifically, when I tried to do Cancellations, my perception that the Cancellations were annoying my listeners was too strong to ignore, and I found that it generated an intolerable amount of anxiety in me. So, although I experienced little or no difficulty doing Cancellations with my speech therapist in the clinic, I never managed to incorporate the technique into my everyday speech. Apart from my concern about my listeners' responses, I also found that cancellations were too cognitively demanding. So, for example, when attempting all but the simplest utterances, if I started to focus on my proprioceptive feedback and to follow the protocol for Cancellations, I frequently found myself either forgetting what I was trying to say or failing to formulate my message into coherent sentences. Thus, quite irrespective of whether or not I managed to successfully complete a cancellation, as often as not I would fail to get my message across. Consequently, my attempts to employ Cancellations never led to any reduction of my fear of communication failure or fear that my speech would elicit negative listener responses and listener rejection.

In a similar way to what Van Riper described in his book (Van Riper 1973, p328), after a short while attempting to do Cancellations, I found myself spontaneously attempting to do Pull-outs (or at least something very similar to them). This shift from Cancellations to Pull-outs probably resulted from my overwhelming desire to move forward more quickly than Cancellations would allow. Consequently, as soon as I found myself blocking, I found myself spontaneously trying to move my articulators towards a posture that was more appropriate for the sound I was stuck on and then trying to start gently moving forward again.

Pull-outs felt much more tolerable than Cancellations, but as often than not, I found that, even if I consciously adhered to all of the Pull-out routine as prescribed by Van Riper, I was still unable to produce the problem sound – no matter how slowly and gently I tried to re-start.

I experienced similar problems with Preparatory Sets inasmuch as changing my "Set" to one appropriate for easy stuttering on an upcoming feared word generally didn't make it any easier to get the feared sound or word out.

Admittedly, my failure to successfully employ these techniques may have been, at least in part, due to the failure of my speech therapist to work through the initial "Identification" and "Desensitization" phases of therapy. Instead, she spent quite some time teaching me relaxation techniques – which, as it happens, completely failed to produce the desired relaxation response in any of my real-life feared speaking situations.[5]

After therapy with my speech therapist finally came to an end, I continued to try for several years to employ Pull-outs and Preparatory Sets. (I abandoned my attempts to do Cancellations). I also subsequently took up meditation and successfully completely stopped myself producing "hard stuttering". Instead, where necessary, I tried to use easy-stuttering combined with Pull-outs and Preparatory Sets and I also continued to try to focus my attention on my proprioceptive feedback (instead of auditory feedback) - just as Van Riper had recommended.

About 18 months after taking up meditation, and after much experimentation with applying my meditation/mindfulness training to speaking, my fear of stuttering subsided and my stuttering went into (temporary) remission.

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[5] Interestingly, although I was unaware of this at the time, Van Riper had discussed the inability of relaxation techniques to produce relaxation in real-life feared speaking situations in his book (Van Riper 1973, pp. 282-283).

After approximately 18 months of remission, a speaking situation arose in which I experienced difficulty making myself understood and, for the first time since the remission started, I experienced some fears that the stuttering may be returning. Shortly afterwards, sure enough, some blocks did return but I managed to avoid the temptation to react to them with force or "hard stuttering". Once again, I started trying to employ Pull-outs and Preparatory Sets while being mindful of where my attention was going, but this time I did not find that these techniques enabled me to say the sounds I was stuck on or feared. Consequently, even though I successfully avoided hard-stuttering, I sometimes found myself having to wait for an inordinately long time for a block to resolve. Although my stuttering symptoms remained mild and relatively tolerable compared to how they had been earlier in my life, the fear of stuttering (and the fear that it might further increase in severity) was ever-present, and I was conscious that these fears were preventing me from making the progress in my life and career that I felt I was potentially capable of.

Discovery of "the Jump"

After struggling on like this for nearly 20 years, I found myself finally ready and able to accept that if I found myself blocking on a sound, although I was fully able to resist the temptation to use force and thus fall into the trap of hard-stuttering on that sound, adopting Van Riper's easy-stuttering approach was nevertheless only a partial solution to the problem. It now seemed clear to me that, although infinitely better than hard-stuttering, easy-stuttering was probably never going to enable me to say the problem sounds quickly enough for me and my listeners to feel comfortable.

One day, the thought occurred to me that perhaps I don't need to say the sound I'm stuck on, and perhaps it would be OK to simply abandon the sound I'm stuck on and move on regardless and complete the remaining words in the sentence – despite having failed to say the sound I was stuck on. I imagined that, as often as not, listeners would simply guess the sound that I had omitted and so such omissions would probably not significantly impair their ability to understand what I was trying to say. So, emboldened by this thought, I decided to start experimenting with a modified version of Van Riper's Pull-outs… which I eventually called "the Jump" (Brocklehurst 2015; 2021).

The key difference between Van Riper's Pull-outs and the Jump was in how I went about trying to get restarted moving forward after getting stuck on a sound…

With the Van Riper version of Pull-outs, whenever I got stuck, I would voluntarily prolong the articulatory posture I was stuck on and then try to voluntarily move my articulators towards a posture that was more appropriate for that sound and then try to start slowly and gently moving forward again *from the sound I had been stuck on*.

In contrast, with my new version of Pull-outs (i.e., with the Jump) whenever I got stuck, I would let go of the articulatory posture I was stuck on, completely abandon my attempt to say that sound and instead try to start gently moving forward again *from the sound <u>after</u> the sound I had been stuck on*. In many ways this technique represented for me the pragmatic acceptance of my experience over the course of many years, that if I find that I can't say a sound, there is no point in continuing to try to do so. It is better simply to give up and move on (to the next sound).

One of the great benefits of this new approach was that, unlike Van Riper's Pull-outs, the Jump hardly slowed down my speech rate at all. Thus, the speed with which I was able to get my messages across was similar to the speed with which I would get non-stuttered messages across. And, thanks to this increase in communication speed, compared to Van Riper's Pull-outs, the Jump elicited far fewer negative listener responses.   Almost immediately, after deciding to employ the Jump in my

everyday speech, my fear of stuttering, of communication failure, and of provoking negative listener responses reduced substantially to near zero, and to this day, it has not returned.

Abandoning Van Riper's Preparatory Sets

As I continued to experience success applying the Jump whenever I found myself getting stuck on a sound, not only did my fear of blocking decrease, but so did my tendency to anticipate that I would block on upcoming sounds or words. Moreover, I started to realise that if I did anticipate that I might block on an upcoming sound, it was better to ignore that anticipation and just keep on going regardless.

Although it was true that often, following such anticipations, I would indeed block, these anticipations no longer posed a problem – because I was now able to use the Jump to quickly and easily get restarted. Moreover, sometimes, after anticipating that I might block on an upcoming sound, I found that if I ignored that anticipation and just kept going regardless, sometimes the anticipated block never materialised. And I found that each time an anticipated block failed to materialise, my future tendency to anticipate that I might block on an upcoming sound reduced somewhat. Consequently, I concluded that it was better to stop trying to employ Van Riper's Preparatory Sets, because it now seemed to me that reacting to the mere anticipation that one *might* block on an upcoming sound or word, probably constitutes an unhelpful act of avoidance in so far as it precludes the possibility of experiencing how anticipations of blocking do not necessarily result in actual stuttering.[6]

Since I first started employing the Jump (in 2001), although I have continued to block occasionally, my blocks almost immediately became so short that they completely ceased to impair my communication or to pose a problem. Now, more than 20 years later, this remission has continued unabated.

Conclusions

Three recent studies investigating the effectiveness of contemporary Block Modification programmes suggest that this approach to therapy can significantly ameliorate both the overt and covert symptoms of stuttering. However, despite the overall benefits of Block Modification programmes, studies that have investigated listeners' perceptions have found that listeners react more negatively to block-modified speech than to uncontrolled (mild and moderate) stuttering. These findings suggest that Block Modification therapy programmes could perhaps be rendered more effective if they were to refine the Block Modification techniques that they teach to make the resultant speech more palatable to listeners. One potential such refinement may be to substitute a new Block Modification technique known as "the Jump" in place of Cancellations and Pull-outs. Research investigating the role of safety behaviours in reinforcing anticipatory fears points to the possibility that the use of Preparatory Sets may actually lead to an increase in the frequency with which stuttering blocks occur in the future. Thus it is possible that stutterers may benefit more from simply ignoring their anticipations of stuttering and carrying on regardless.

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[6] Research into factors that can increase social anxiety has found that "safety behaviours" (i.e., behaviours that one enacts in order to avoid anticipated undesirable responses) actually increase the tendency for those undesirable responses to occur in the future. From a social anxiety perspective, the use of Anticipatory Sets in response to the anticipation of stuttering could classify as a "safety behaviour"and may well increase the likelihood of anticipating stuttering in the future (Clark 2001).

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