

# PSYCHOLINGUISTIC INSIGHTS INTO DIALOGUE

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*The following is an abridged version of Chapter 28 of my book “The Perfect Stutter” (Brocklehurst 2021) in which I describe some of the research into dialogue and dysfluencies that I encountered while studying Psycholinguistics at the University of Edinburgh. Although this research investigated dialogue and dysfluencies in normally fluent speakers, it nevertheless reveals some important principles that are directly relevant to people who stutter.*

The Psycholinguistics MSc involved five months attending lectures and writing essays, followed by five months of research – culminating in a dissertation. The course material covered three main topics: Language comprehension, Language production, and the Study of Dialogue. It was extremely hard work but turned out to be well worth it. Although my primary interest was in language and speech production, in many ways the most interesting parts of the course for me, as a person who stutters, were the lectures on dialogue and on how speech-comprehension and speech-production interact with one another.

## **Alignment of speaker’s and listener’s language during dialogue**

One of the first principles of dialogue that we were taught was that it is a co-operative process whereby the two dialogue partners become ‘aligned’ to one another and start to adopt the same vocabulary and grammatical constructions. This alignment is an energy-saving process because it takes much less energy to produce a word that you have just heard or to use a grammatical construction that has just been used. Interestingly, conversation partners also tend to converge in their usage of phonology and may start to pronounce words in a similar way, even though they may both normally have different accents. Research demonstrates that the more that conversation partners’ speech and language production become aligned in these ways, the faster and more efficiently they are able to speak and respond to each other and the better they are able to understand each other. Of course, this principle is also apparent in dialogues with people who stutter, who find it much easier to use the same words that their conversation partner has just used than to introduce different words. Interestingly dialogues between women tend to show more convergence than dialogues between men.<sup>1</sup>

## **Predicting what the speaker is about to say**

In addition to being taught about the co-operative nature of dialogue, we were also introduced to an integrated theory of speech comprehension and production that had been developed by Martin Pickering (the head of the Psychology Department at Edinburgh) together with Simon Garrod (from the University of Glasgow). The main thrust of Pickering and Garrod’s (2013) theory was that, during conversational speech, humans constantly use their own speech-production systems to predict what their conversation partners are trying to say before they actually say it. Of course, some of the predictions turn out to be wrong. But nevertheless, on the basis of a comprehensive review of psycholinguistic studies of dialogue and the factors that influence its effectiveness, Pickering and Garrod argued that the net result of using one’s powers of prediction in this way is faster, more efficient and more effective communication. Because this predictive approach to communication is advantageous it would almost certainly be selected for by natural selection. So, not surprisingly, Pickering and Garrod’s theory suggests that humans are hard-wired to predict one another’s speech, and that everybody uses such prediction when listening to other people speak. It happens completely automatically, and we can’t stop ourselves from doing it.

One of the reasons this dialogue research was interesting to me was because many stutters and most speech therapists consider listeners’ tendencies to predict in advance what stutters are trying to say to be unhelpful. Consequently, they try to discourage listeners from doing it, and organisations like the British Stammering Association go to great lengths to make it known to the general public that the tendency to try to ‘help stutters out’ by anticipating their words in advance and supplying them for them is unhelpful. Similarly, speech therapists routinely advise parents of children who stutter not to do this, and often encourage stutters to ask their listeners not to finish their sentences for them.

This negative perception of listeners’ attempts to help stutters with their words had always surprised me. Back in the days when I stuttered severely, I was glad to have such help, as it enabled me to move forward more quickly with what I wanted to say and saved me a lot of effort and jaw-ache. It also gave me useful feedback, inasmuch as it clarified to me

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<sup>1</sup> The energy-saving effect of convergence would seem to be essentially the same as the phenomenon described in Traditional Chinese Medicine, whereby we become energised when our Chi becomes attuned to that of the people around us, and we resonate in sympathy with them.

whether or not listeners were really listening to me and whether or not they were understanding what I was trying to say. Of course, sometimes listeners anticipated wrongly what I was trying to say, but more often than not they anticipated correctly and supplied the correct words. If they supplied the wrong word, I just kept on trying to say the word I was trying to say, so it did not set me back in any way.

The way listeners try to help stutterers out by supplying words for them is essentially similar to what most listeners would do to help out an elderly person with word-finding difficulties,<sup>2</sup> and yet, for some reason, people with word-finding difficulties are almost always grateful for such help, whereas people who stutter are frequently annoyed by it.

It seemed to me likely that stutterers' dislike of such help may sometimes reflect the fact that their sense of self-esteem has become partially dependent on their ability to speak without stuttering. So, for example, they may want to demonstrate to themselves (and to their listeners) that they *can* say the words they want to say and that they don't need any help. Whatever the case, in light of Garrod and Pickering's research and the wider body of research into the mechanics of dialogue, it was clear that this rejection of listener's help essentially ignores one of the key principles of successful communication. Moreover, because stutterers stutter more when they are unsure whether or not their listeners are understanding them, discouraging listeners from supplying such feedback leaves them less aware of what their listeners have understood and renders them more likely to stutter. I couldn't help but think that if speech therapists were aware of these aspects of dialogue, they would be more cautious about encouraging their clients to reject such help from listeners.

### **The effects of dysfluent speech on listeners**

Before starting the MSc, I was already well aware of the various psycholinguistic theories that tried to explain why dysfluencies (both normal dysfluencies and stuttered dysfluencies) arise in people's speech.<sup>3</sup> However, I was completely unaware of the fact that there was also a large amount of research, stretching back more than half a century, which had been carried out into *the effects of dysfluencies on listeners*.

From the perspective of a person who stutters, perhaps one of the most important findings of this research is that a small amount of dysfluency actually increases the ease with which listeners are able to understand what the speaker is trying to communicate. So, for example, researchers have found that if they prepare two versions of a set of instructions for listeners to follow: one with the speaker's normal dysfluencies included in the recording, and the other edited so that his dysfluencies were removed; listeners who listened to the version with the dysfluencies included were better able to follow the instructions than listeners who listened to the recording with the dysfluencies edited out (Brennan & Schober, 2001). Other similar research has confirmed that this finding is consistent and reliable.

Exactly why mildly dysfluent speech is better understood than completely fluent speech is not clear. However, research has shown that speakers most commonly tend to hesitate and/or become dysfluent just before saying something important or something complicated or controversial, and it is likely that listeners predict, on the basis of their own past experience, that if the person who is speaking to them suddenly becomes dysfluent, he is probably about to say something important, complicated, or controversial – so they start to pay more attention and listen more carefully (Corley & Stewart, 2008). Other research has also demonstrated that because dysfluencies slow down the rate at which the speaker is able to convey information, dysfluencies that occur when the speaker is trying to explain something complicated naturally allow the listener more time to assimilate and comprehend what is being said (Jaeger, 2010).

As I was becoming acquainted with this research, I was reminded of two occasions, ten years earlier, when adult-education students had commented to me, following particularly dysfluent talks I had given, that my dysfluencies had made it easier for them to understand what I was saying. At the time I thought they were just trying to be nice to me, and I didn't believe them. But the findings of these studies of the impact of dysfluencies on listener comprehension suggested that they may well have been telling the truth – and that my dysfluencies had actually made it easier for them to assimilate what I was saying.

I imagined that most people (both stutterers and non-stutterers alike) would probably think that the more fluently one speaks the better. But this research clearly demonstrates that this is not the case. If one's criterion for assessing speech quality is how easy it is for listeners to pay attention to it and how easy it is to understand, then the best speech is mildly dysfluent speech; completely fluent speech is not so good; and highly dysfluent speech is the worst. The practice on television and radio programs of editing out people's dysfluencies actually makes it harder for the audience to pay attention to and to understand what is said.

Another discovery I made while doing the Psycholinguistics MSc at Edinburgh was that there has been a large amount of research conducted into the use of filled pauses. Some of the findings of this research are directly relevant to stuttering inasmuch as they offer a potential explanation for why stutterers often repeat sounds and words and why they often use large numbers of fillers like 'um' and 'uh' and interjections, such as 'like' and 'actually'. Psycholinguistic research clearly demonstrates that these repetitions and interjections are commonly used by (non-stuttering) speakers when they are having

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<sup>2</sup> It is also similar to the way parents provide 'scaffolding' to help enable their children to produce more complex language. See Chapter 26.

<sup>3</sup> Including slow language-formulation; articulatory impairment; and covert (and overt) error-repair.

some difficulty formulating what they want to say. All of these options fill the silence, and in so doing, they play the important role of indicating to listeners that the speaker has not yet finished speaking and that he still has more to say. As a result, listeners are less likely to butt in, and it is easier for the speaker to hold the floor (e.g., Maclay & Osgood, 1959; Schegloff, 1982).

Such experimental findings also suggest that whether a speaker pauses silently or inserts fillers into his pauses most probably depends on the extent to which that speaker anticipates that people will interrupt him. Thus, a speaker is more likely to use filled pauses if, in his experience, there is a high likelihood of losing the floor. Thus the lower one's social status, the more fillers one is likely to use, especially when speaking to people of higher status. This tendency of low-status people to use more fillers reflects the reality that people of low social status are more likely to be interrupted and talked over, whereas people of high status are less likely to be interrupted if they pause. So, for example, historically at least, very few people would have interrupted a king or queen, whereas people of low status (including young children) experience being interrupted and talked over all the time.

It occurred to me that this research that has compared the impact of filled and unfilled pauses is directly relevant to people who stutter – who naturally tend to use high numbers of fillers of all types. Indeed, as the EXPLAN hypothesis highlights, stutterers' repetitions and prolongations can essentially also fulfil the role of fillers, signalling to their listeners that they are still trying to speak, thus helping them to hold the floor (Maclay & Osgood, 1959; Mahl, 1987; Rochester, 1973). Surely, the role of fillers in helping speakers to hold the floor is something that stutterers would benefit from knowing about. All too often, therapists encourage stutterers to stop using fillers and yet don't give a thought as to the reason why those fillers were being used. I was never taught anything about this on my speech therapy degree, and very few of the qualified speech therapists that I have met since studying speech therapy have been aware of it. Similarly, my experience of the stuttering self-help community and self-help groups has been that their members generally lack this awareness and almost invariably actively encouraged one another to stop using fillers, without giving any thought to the consequences of so doing. The bottom line is that, for most people, especially those with a low social status and especially for children – who naturally have a low status, fillers are indispensable in conversational situations. So, any therapist providing therapy for people who stutter should carefully consider whether and how their clients are going to continue to be able hold the floor if they reduce their use of them.

Learning about these positive aspects of dysfluency had a profound impact on me, not least because it reinforced the conclusion that I had come to some time ago, that many of the beliefs that people hold regarding what constitutes optimal speech are naively idealistic and sometimes plain wrong. I imagined that very few non-stutterers would equate optimal speech with slightly dysfluent speech and even fewer would consider completely fluent speech to be sub-optimal. Ironically, the findings of dialogue research suggest that having a slow or mildly impaired language or speech production mechanism may sometimes work to one's advantage, and in this regard, mild stutterers may actually often be better communicators than fluent non-stutterers. Conversely, people whose language and speech production systems work extremely well may be at a disadvantage, as there may be many situations where listeners, especially older listeners, simply can't keep up with them.

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It was now six years since I had first come across the Covert Repair Hypothesis and had first decided to allow myself to make all kinds of speech errors. From that time onwards my speech had remained remarkably fluent and remarkably resilient, even during moments of quite extreme stress. Consequently, over those six years I came to realise that even if my speech or language production abilities were somewhat on the slow side or slightly impaired, they were nevertheless fast enough and reliable enough to enable me to cope with practically all the stresses that everyday life threw at me. Having succeeded in reducing my previously unrealistically high expectations of how perfect my speech performance should be, the only really unwelcome side-effect that I was conscious of was a tendency to make more appropriateness errors – and to spontaneously say things that had a potential to get me into trouble. It was as though the price I paid for fluency was a reduction in my ability to be so politically correct.

### **Perfectionism in people who stutter**

When it came to deciding on the topic for my MSc dissertation, I wanted to do some research which would have the potential to provide some further insight into the question that had been in the back of my mind ever since I was a child – Do people who stutter really have some form of physical impairment that prevents them speaking as well as they aspire to speak? Or are they just excessively perfectionistic and overly critical of their speech?

Before arriving at Edinburgh, I had ordered a book: *People in Quandaries*, by Wendell Johnson (1946) – the researcher who had formulated the Diagnosogenic Theory of stuttering. In it, Johnson had written a chapter devoted to the relationship between perfectionism and stuttering. On the basis of his own observations, he had concluded that stutterers do not usually have any significant underlying impairments and that they start to stutter because they are subjected to unreasonably high expectations. He considered the current tendency of western society, to place great emphasis on the early acquisition of linguistic skills to be an important factor in increasing the risk of stuttering in children. In addition to

this, Johnson noted that the parents of children who stutter often seemed to be perfectionistic in a more general sense and had high expectations of their children across many domains – not just speech and language. Johnson suggested that these children eventually internalise these high expectations and develop their own perfectionistic traits, which then persist independently of any parental or societal input.

It occurred to me that, bearing in mind the time-limitations of the MSc dissertation, a doable project would be to test whether stutters are generally more perfectionistic than non-stutterers – Not just with regard to speech and language, but also with regard to their approach to life in general.

The term used for such perfectionism is *domain-general perfectionism* and I was aware that there were a number of well-established standardized psychometric tests of such perfectionism. I finally decided to use one of these to conduct a survey comparing levels of domain-general perfectionism in a group of stutters and a matched group of non-stuttering controls.

The test I chose was the “*Frost Multi-dimensional Perfection Scale*” – or FMPS for short by Frost, Marten, Lahart, and Rosenblate (1990). It consisted of thirty-six statements, each of which had been found to reliably reflect a particular dimension of perfectionistic attitudes and beliefs. In the test, respondents have to read the thirty-six statements and rate how closely each statement reflects their own attitudes or beliefs. The statements are generally considered to reflect three “positive” and three “negative” dimensions of perfectionism.

The three positive dimensions are all associated with some-or-other form of *positive striving*, whereas the three negative dimensions, are all associated in some way with *fear of failure* or *fear of not doing well enough*.

My working hypothesis was that, compared to non-stutterers, people who stutter would score more highly on all six of these dimensions of perfectionism.

I invited a group of adult stutters and a group of carefully matched non-stuttering controls to complete the questionnaires. When I compared the two groups’ responses, the results were clear: The stutters scored significantly more highly than the non-stutterers on the dimension: *concern over mistakes*. After controlling for that difference, the only other significant difference between the two groups, rather surprisingly, was that the stutters had marginally *lower* personal-standards self-ratings!

These results suggested that, compared to non-stutterers, people who stutter do not generally have the higher levels of “positive strivings” that I had originally hypothesised. In other words, their self-expectations are, in general, no higher than those of people who do not stutter. Thus, the results of the study did not suggest that most people who stutter are abnormally perfectionistic. But it did suggest that they are much more afraid of making mistakes than people who do not stutter.<sup>4</sup>

These results were fully in-line with the hypothesis that people who stutter are error-prone. But, because the FMPS is a domain-general questionnaire and did not ask specific questions about speech or communication, there remained some doubt about whether their fear of making errors was a general fear that applied to many domains of their everyday lives, or whether it was more specific, and reflected specifically their fear of making speech errors.

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<sup>4</sup> This research was eventually published under the title: Perfectionism and stuttering: Findings of an online survey (Brocklehurst, Drake, & Corley, 2015)