What Brain Neurology and NLP tell us about correction

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When I first came into teaching 35 years back correction was not an area of worry or concern. The student make a mistake and you said : " Reinaldo, don't say PORTuguese- the correct stress is PortuGUESE "

Wasn't good down-to-earth correction the teacher's job?

The next step, for me, was to observe students as I corrected them and to wonder what they were really doing with the correction. I began to notice that the Reinaldo's went on saying "Portuguese" with the stress wrong, despite my best correction effort. I noticed that oceans of time-consuming red ink did not much improve my students' writing.

After many years of strenuous and maybe partly futile correcting of my students' errors I came to realise that the acceptability of correction, like the acceptability of any advice, depends on who is giving it, when and where. By looking at the way behaviour correction happens in the family I began to see what a huge difference there is between sibling correction and parental correction. Peer correction in the classroom parallels sibling correction while teacher interventions mirror parental ones.

This brought greater clarity in to my thinking and since then I have devised a variety of parental correction techniques and sibling ones.

When I began writing letters to students I realised that I DID NOT WANT to correct the letters they sent me. It seemed to run against the grain of the communication to give them their letters back with marks all over them. As I corresponded more with students I realised how right my instinctive refusal to correct had been. By not focusing on the negative I helped students to open their wings and fly across the page, to take risks and try to say things they really could not yet say.

I then added principled zero correction to parental correction and sibling correction. All this thinking about correction up to this point had been teacherish and psychological. I had only dealt with correction from the outside, social correction. But what about selfcorrection? How come second language speakers will correct oral mistakes they make a second after making them? How do they do this?

## What the NLP has to tell us about self correction

Using some of the tools offered by NLP, I set out to find out how people correct their own language mistakes. I discovered that people are very different in the way they self-correct, at least according to the accounts they themselves are able to give of the process.

Here is a Swiss French speaker describing his self correction process when speaking German:

" My self-correction monitor is mostly interested in getting words right. The monitor will suddenly come on while I am speaking German and I see the words I am saying like a news reader would see the words she is reading moving out there in front. Somehow the wrongly used words jump out of the text towards me, kind of flashing. I then correct what I got wrong and the words go back into place. This process is accompanied by an increase in skin temperature.. like I blush a bit...." This process of Philippe's seems to be a mainly visual one with a bit of physical sensation. It is emphatically not an auditory process, even though he is speaking.

Not every body is like Philippe. Here is an English speaker describing what happens when she is speaking Spanish:

" If I am in mid sentence and I make a mistake I am aware of, I hear one of two voices in my head. One is on the left side and it comes up from below, curls round the left side of my head and then goes out in front of me. This voice is kind, soft and low and it very easy to accept correction from it. The other moves in a directionally similar way but on my right side. It is harsh, loud and accusatory and I hate accepting correction from it. I fear it. "

Accurate, self-reported information about students' inner process of self-correction is of immediate practical use to the teacher. If I were teaching Spanish to the English girl above I could cause a major negative effect by offering her correction in a voice that evoked her own hard inner voice.

What the neurologists say about self correction.

Self-correction also fascinates the neurologists. They want to know what exactly happens in the

the brain when some one self corrects. They have used brain scanning to discover that during error correction there is intense activity in a curve of gray matter just under the frontal lobes, an area known as the anterior cingulate cortex, or ACC. Carter and Cohen from Pittsburg University report in SCIENCE Vol 280, p.747 that the ACC, when monitored with magnetic resonance imaging, seems to activate whenever its owner gets a simple task wrong. In their experiment the subjects were asked to distinguish between different letter sequences. As a language teacher I am amazed to learn that a discrete set of cells are activating Speaker 1's flashing, jumping-out words or setting off one or other of speaker 2's correctional voices. The anterior cingulate cortex is perhaps the place in the brain where the internal process that students have described to me in conscious words happens. WOW!

As a citizen and a person I am amazed to read these scientists' hypotheses about the wider functions of the ACC. Some are suggesting that hyper active signals from the ACC contribute to obsessive compulsive disorder (OCD) in which a person anxiously repeats menial tasks, like washing their hands or locking the door. Last year a scientist called Gehring found that OCD sufferers display excessive ACC impulses when they make mistakes in experiments on reaction time. John Allen of the University of Arizona has preliminary results that suggest that people with unusually weak ACC signals may be more likely to steal because they don't physiologically sense the wrongness of their actions.

Maybe those of our students who happily ignore their language inaccuracies in English are blessed with weak ACC signals!

If only I had the background knowledge to read and evaluate what the neurologists are producing, week by week, month by month. Knowledge of what the brain does when we self-correct, when we are corrected by a teacher, when we don't notice our mistakes is central to how we EFL folk should go about teaching.

In my view brain neurology already is and will increasingly offer us language teachers answers to questions we have not yet had the wit to ask but which, unknowingly, we need answers to.