

# Investigations into pronunciation teaching.

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**This article reports on the main findings of my recently completed PhD (Couper 2009) and discusses the implications for the classroom. The findings are based on a series of three cumulative studies. With the insights gained and the focus provided by a Cognitive Phonology framework, Critical Listening (CL) and Socially Constructed Meta-language (SCM) emerged as two key variables which play a role in effective pronunciation teaching.**

The investigations in this thesis were prompted by a very practical classroom problem of what the teacher should or can do about poor achievement in pronunciation. In addition to establishing that pronunciation teaching can be effective, the aim was to develop general principles which would provide teachers with a clear rationale for classroom actions and activities relating to pronunciation. This required investigations into what it is that makes it work.

While there has been little focus on this in traditional SLA theory, Cognitive Phonology provided a framework which helped in teasing out which variables might be important in making teaching effective. The view taken here is that pronunciation both can and should be taught. It is an inseparable part of communication and as such should have a significant role in Communicative Language Teaching. Pronunciation is seen as much more than a motor-skill, it is seen as a cognitive skill which can be learned by everyone given the right circumstances.

## Theory and Practice

As a teacher, it was very important to find a theoretical perspective compatible with my own observations of what seemed to work in classroom practice. A very brief overview of the theoretical perspective and its relevance to practice is outlined below.

Drawing on traditional SLA theory to provide explanations of observed teaching and learning behaviour leaves many unanswered questions: In particular, the role of explicit instruction is unclear given the various views on the relationship between implicit and explicit knowledge.

Fortunately there are many related disciplines, and indeed views of SLA, which do provide useful theoretical perspectives. I drew on insights from: phonology, language teaching pedagogy, SLA theory, educational psychology, social and cultural theories and speech perception. Cognitive Phonology provides a coherent framework which can bring all these insights together.

Cognitive Phonology (CP) is a branch of Cognitive Grammar (CG), within Cognitive Linguistics, a usage-based approach to language stemming largely from the work of Langacker (1987) and more recently Taylor (2002). It is based on the premise that the cognitive abilities required for language are similar to those used on other cognitive tasks. Instead of beginning with a theory of language acquisition, it begins with what is known about cognition and uses that to build theories of language acquisition (Taylor 2002). Thus it is diametrically opposed to Chomsky's Generative Theory which sees language as in the mind and autonomous, and uses cognitive in a different sense.

Pronunciation depends on the ability to categorise and is therefore a cognitive phenomenon which is 'grounded in the human ability to produce, perceive and above all, to categorise sounds, and to form mental representations of sounds' (Taylor 2002:79-80). Fraser (2006) has explored the implications of this for pronunciation teaching, concluding that learning the concepts of the L2 phonology (phonemes, syllables, stress etc) is a prerequisite to successfully categorising the sounds of the language. For teachers, this implies the need to draw on their pedagogical knowledge to find ways to effectively communicate the nature and boundaries of phonological concepts and categories. They also need to provide effective practice and feedback as it takes time for learners to fully form new concepts.

## The Research

The thesis is based on three studies which represented the cumulative exploration, development and refinement of ideas as to what makes pronunciation teaching effective.

An earlier action research project (Couper 2003) had already explored a number of ideas related to pronunciation teaching and found tentative evidence for the effectiveness of systematic explicit pronunciation instruction and its validity in the eyes of learners.

The diagnostic test developed in this project was used in the first study to decide which aspect of pronunciation to focus on. The syllable coda was selected, more specifically epenthesis (addition of an extra vowel sound after a consonant e.g. 'fish' sounds like 'fishy') and absence (the inappropriate omission of consonants e.g. 'wants' sounds like 'want'). The term absence is preferred

over deletion to make the distinction between consonants which are acceptably omitted in connected speech and those which may cause confusion through their omission.

This was chosen because it was a widespread problem and it can have a negative impact on communication. It is also more easily quantified than broader suprasegmental difficulties which would arguably be of greater interest.

The learning and teaching context was similar across all three studies. The participants were all adult, higher-intermediate level ESOL learners attending full-time class at a tertiary institute in New Zealand. The programme was competency based and designed to meet the language needs of new settlers in NZ. It lent itself to a communicative approach to teaching and dealt with topics related to living, working and studying in NZ.

## One: Explicit Pronunciation Teaching

This study, some aspects of which were reported in Couper 2006, aimed to provide empirical evidence that explicit pronunciation teaching can work and that gains can be maintained over time. As one of the difficulties of classroom-based research is how to control for all the potential variables, it attempted to more tightly define and investigate some of the potential features of effective pronunciation teaching.

### Method

Drawing on a combination of quantitative and qualitative methods, the study employed both a treatment group (N=21) and a baseline group (N=50). The treatment group, a single class of students, received explicit pronunciation instruction as a regular part of the curriculum. Their L1s were: Mandarin and Cantonese 14, Korean 1, Arabic 2, Farsi 2, Somali 1, and Samoan 1. The teaching involved a series of short input and practice sessions over a period of two weeks. The approach to teaching and learning was an eclectic one, accessing what was already available in the pedagogical literature, and from the teacher's experience and intuition, rather than being based on one particular theory. Qualitative data was collected from surveys and interviews, while quantitative data was collected from pre-tests and immediate and delayed post-tests.

The baseline group completed tests at both the beginning and end of the semester. Their L1s were similar to the treatment group. While these students did get feedback from the tests they took at the beginning of the semester, teachers reported that no explicit teaching of the pronunciation of syllable codas took place in any of the classes. The data for the baseline group was also analysed for the effect of individual differences and the phonological context on error rates.

## Findings

Results for the baseline group found L1 had some influence on error rates, but the wide individual variation in mastery of syllable codas regardless of L1 and other factors suggests that the over-riding factor is that each individual is different. It seems to be the case that some individuals quickly notice the important features of the L2 pronunciation and are able to produce them, while others never seem to notice them, i.e. it may be a question of aptitude. It is for those who don't notice the important features that explicit instruction may be of greatest assistance.

The data on the effect of phonological context was used in developing pronunciation materials for the follow-up study reported on below.

The results showed the treatment group had improved significantly after the instruction and the retention of those gains 12 weeks later was also found to be significant. The baseline group was found to have remained unchanged. The finding that this aspect of pronunciation did not change at all over a one semester period suggests that those learners who have not mastered this feature by the time they reach a high-intermediate level are likely to make little progress without the help from explicit instruction.

An analysis of the qualitative data suggested a number of aspects of teaching may have assisted in learning: awareness raising, critical listening, the right kind of metalanguage, helping learners to find rules and patterns, giving feedback and providing opportunities for further practice.

One interesting example of an aspect of teaching which was clearly ineffective was the explanation of the syllable. Traditional metalanguage was used in explaining the syllable in terms of consonant-vowel patterns. It was found that learners had not understood this explanation and this led to a breakdown in communication. This can be traced back to the differences between L1 and L2 phonological concepts: What the learner thinks of as a final consonant is interpreted by the English listener as consonant + vowel (i.e. a syllable).

These findings became the focus of the next study.

## Two: Concept Formation Processes

The focus of this study was more ethnographic as it explored learners' perceptions of L2 speech and learning and teaching processes. It analysed classroom interactions and interviews to understand how learners interpreted what was being taught, and if and how this was translated into the formation of phonological concepts. This

allowed a number of relevant themes to emerge. In particular, two variables were isolated and defined: Socially Constructed Metalanguage (SCM) and Critical Listening (CL). This section will restrict itself to describing just these two factors.

## Method

The syllable coda was again the focus of the study and four volunteers with difficulties in this area were drawn from a population similar to the one in the previous study. One was Korean and three were Mandarin speakers. As a group, epenthesis was a far more significant problem than absence. They attended free extra pronunciation classes (in addition to their regular full-time course), 90 minutes, once a week for six weeks.

They were given a series of perception and production tests and tasks pre-, during, and immediate and delayed post-instruction. There were semi-structured pre-, post- and delayed interviews.

The teaching was integrated into a meaningful context and, based on the conclusions of the previous study, covered these three areas: codas followed by a consonant in the onset of the following syllable (focus on connected speech, lessons 1 & 2); marked codas followed by a pause (focus on more difficult complex codas, lessons 3 & 4); effect of mistakes on meaning and grammar (e.g. comparatives, plurals, lessons 5 & 6).

## Findings

The learners were found to have made progress immediately after instruction, and retained or advanced this progress 8 months- (in one case 18 months-) later. They had also become much more aware of what the problem was although they did not understand all the details. They all felt their pronunciation had improved and were able to discern differences between their production and the target production.

One aspect of the teaching which was observed to be effective was the use of what Fraser (2000) terms Critical Listening (CL). This involved recording learners' speech and working with them to compare it with a native speaker model. By listening to the two versions together, learners can be helped to hear the difference between what they think they have said and what an English speaker would think they have said. The idea is that by hearing many examples they will develop their speech perception, and learn where the boundaries are between the different phonological categories.

An important factor in the success of CL is good metalinguistic communication (Fraser 2006). This observation led to the emergence of the second theme, namely how pronunciation was talked about. This typically

involved: encouraging learners to describe their perceptions of the target pronunciation, teacher use of visual representation on the board to focus attention on salient aspects of pronunciation, and teacher explanation. The input provided by learners in discussing how they heard the target sounds was very fruitful in providing a means of communicating about pronunciation. Instead of the teacher saying things like, 'Don't say an extra syllable' he would frame it in terms of 'to me it sounds like "drunker snail", not "drunk snail".' and write the difference on the board so they understand precisely where the problem is (it was observed that without this, learners would not focus on the salient issue).

In trying to explain the native speaker perception of codas, the teacher would work with the learners' descriptions. For example, in talking about the pronunciation of 'looked' they used expressions such as '/k/ leave place but no sound', '/k/ is quiet, little', '/t/ is stronger than /k/'. Weak forms were described as 'soft', the coda of 'just' in 'just think' was described as 'short' and accompanied with a hand gesture showing the sound stopped. There were many examples, but it became clear that approaching any explanation from the learners' perceptions, or the concepts they already had, was an effective way of achieving successful cross-cultural communication.

After reflecting on what had occurred during these classes, and on comments in interviews, it seemed that what was happening here could be described as the social construction of metalanguage: the construction of meaning through a joint effort of all participants guided by the teacher. Thus learners need to first be aware that there is a problem, then understand exactly where the problem is before learning the precise nature of the problem and how to rectify it.

In conclusion, this study led to a further narrowing of the focus and the development of ideas around what sort of variables could be tested. These two variables, SCM and CL, were now ready for quasi-experimental testing.

## Three: Testing SCM and CL

The first two studies demonstrated that explicit pronunciation teaching can work. They also provided qualitative data around the effectiveness of different aspects of teaching and explored how these can assist in the process of forming phonological concepts. This study attempted to set up an experimental situation which was as tightly controlled as possible to test the conclusion from the previous study that SCM and CL may be important in determining the success of pronunciation teaching.

## Method

To maximise control over the many variables which can impact on pronunciation learning, the study was limited to the immediate effect of a single 45-50 minute period of instruction. The aim was to test the validity of a concept formation approach as operationalised through SCM and CL which are hypothesised as playing a role in this process. The focus was again on the syllable coda, but this time it was further restricted to epenthesis. The hypotheses were:

1. The right kind of metalanguage (SCM) will help learners to form new concepts.
2. The use of contrast through CL will help to establish category boundaries.

The design (2 x 2 factorial) involved four groups of six students with the following combinations of SCM and CL: SCM+/CL+, SCM+/CL-, SCM-/CL+, and SCM-/CL-. The variables were defined as follows:

SCM+. As already noted, this is an attempt to explicitly teach pronunciation using the perceptions of the learners as a starting point.

SCM-: In the absence of SCM, the metalanguage used by teachers is traditionally taken from textbooks. These books typically describe the target language using target language concepts. For example, they may ask learners to count syllables but neglect to check that they have the same concept of what a syllable is.

CL+. As already noted this involves the learner in listening for the contrast between two productions: one which is acceptable and one which is not. As with SCM, it involves helping learners to understand how the sounds are perceived by the native speaker, resulting in formation of L2 concepts.

CL-: The absence of CL is represented here by not allowing for any contrast between the target items. There is a focus on the same utterances as with CL+, which are repeated but not directly contrasted with potentially confusable utterances.

The lessons were carefully scripted in advance, to ensure the variables were faithfully reflected in practice, leading to four distinctly different lessons.

## Findings

The results showed significant immediate effects for SCM on speech production and for CL on speech perception. SCM+/CL+ made significant gains in both production and perception. SCM+/CL- also made significant gains in production but gains in perception did not reach significance. SCM-/CL+ on the other hand showed significant gains in perception but minimal, non-significant

gains in production. SCM-/CL- made the least progress in both perception and production. The SCM+/CL+ lesson was replicated for four members of the SCM-/CL- group, who then made similar gains to those achieved by the first group to receive SCM+/CL+ instruction.

In conclusion, it was seen that CL helped with speech perception, SCM helped with production, and the two together helped with both. However, the relationship between perception and production remains unclear.

## Discussion and Implications

The three studies in this thesis employed a wide range of research techniques and attempted to illuminate the issues from different perspectives. Evidence was found to support the position that pronunciation can be taught and that gains can be retained over time. Perhaps more importantly, evidence was found to support claims that certain types of instruction are more effective than others. Based on a concept formation approach, it defined and operationalised two factors relevant to effective teaching.

However, before we can make use of techniques such as SCM and CL, we must remember the distinction between the conceptual, abstract nature of the phonological system and the actual physical sounds which are produced. This is not at all easy because we have grown up using a particular phonological system and don't normally attend to the detail of the sounds. Instead we automatically impose learnt patterns of categories upon incoming acoustic data in order to be able to make sense of it. In doing this, large amounts of data are ignored as they are not phonologically salient. However, in different languages different aspects of this incoming acoustic data will be phonologically salient. Therefore, one has to learn what is salient in the target language in order to form the concepts required for the L2's phonological categories. As teachers, it is important to understand this if we are going to be effective in helping learners to form new concepts. Fraser (2010) discusses this in greater detail.

From this perspective, comparing and contrasting what is and what is not a member of a particular phonological category (through Critical Listening) is useful in the formation of these new concepts. The aim is to get learners to use their ears to escape from the 'shackles' of their L1s. This is the first step. The second step is to learn the 'shackles' of the L2. They are shackles in the sense that they constrain our imaginations to a particular way of interpreting sounds and creating meaning. Of course they are also necessary if we are going to have intelligible language.

Therefore, to rehabilitate 'prisoners' from the shackles of their L1s so that they can voluntarily pick up those of an L2 is more a cognitive process than a physical one. In talking about the L2 system, teachers need to keep in mind that

what may seem obvious to them, such as talking about the number of syllables or talking about stress, may not be at all obvious to learners, or even worse, it may be obvious to learners but because they have a different notion of say, syllables or stress, they will misinterpret the intent of any explanation or guidance provided by the teacher.

There is little space here to provide practical examples, although an information gap card game was particularly popular, and further articles are planned to describe this and other activities. However, the general principles are:

- Raise awareness of the nature of the problem; communicate explicitly and meaningfully about it (i.e. through SCM).
- Help form category boundaries by presenting contrasts between what the native speaker does and does not perceive as belonging to the category (i.e. through Critical Listening).
- Actively involve learners in the meaning making process (a broadly communicative approach).
- Practice: focus on forming concepts (i.e. compare and contrast, allow for feedback).
- Provide the right kind of corrective feedback (use SCM).
- Define instruction in terms of what helps learners to form and practice new concepts (e.g. SCM and CL).

## Conclusion

This thesis took just the one aspect of pronunciation in one particular context so there is clearly a lot more work to be done to demonstrate the extent to which the claims made here can be generalised to other features of pronunciation and other learning contexts. However, it has applied a theoretical perspective in analysing the relationship between instruction and learning which has made it possible to demonstrate that a specific type of instruction does lead to improved pronunciation.

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