Choral Practice
- the Neurophysiological Opportunist's Way

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Introduction:
If you say "choral practice" to an experienced language teacher, you will get a mixture of a frown and an embarrassed laughter in return. "We left that decades ago", some will say. However, several neurophysiological and neuropsychological processes in the central auditory mechanism indicate that in fact choral practice should be very effective. Extensive classroom experience underpins this view. Therefore, this paper will put forth ten good arguments for choral practice based on a synthesis of neuroscientific research, speech acquisition research, and 30+ years of teaching experience. It will also proffer a detailed, well-tried methodology for the second-language classroom, viz. the present author's personal approach. This approach, in a nutshell, involves listening and speaking exercises with a great multitude of chorus repetitions of whole phrases with a constant focus on prosody and with immediate, uncritically praising but constructive feedback by the teacher after each repetition. It is hoped that more colleagues will try choral practice, and that some of you will have the time and other resources to perform scientific classroom research. If, as the present author believes, this centuries-old method can be proven effective also with "hard" data, it should no longer be withheld from the millions of second language learners worldwide. Also see companion article "Five Cornerstones for Second-Language Acquisition" in this issue.

Argument #1: Choral practice takes advantage of the neurophysiological effects of hearing on the speech organs.
Hearing is the sine qua non of spoken language acquisition. There are direct neural connections from the auditory centres in the temporal lobes to motor areas in the frontal lobes. See companion article in this issue. So-called mirror neurons, or "imitation neurons", in the frontal motor areas responsible for oral and facial movements are active both in ordinary speech and during listening to speech. This auditorily invoked motor activity is identical to the activity that would have been required in order to actually produce the same speech sounds. This auditory influence on the speech organs is very strong. On hearing a hoarse speaker, you even will want to clear your own throat. In the chorus, everyone is like "forced" to speak like the teacher by the pressure of the chorus.

This audio-motor activity is coupled to neural networks in secondary association areas and other areas involved in memory and attention. The net function seems to be a kind of pattern recognition mechanism, by which the incoming speech is compared to and understood in relation to previous speech experience. The audio-motor link is crucial also for a useful feedback loop controlling one's own spoken output. The audio-motor links required for the second language are effectively trained by choral practice.

Argument #2: Choral practice trains prosody particularly effectively.
Prosody means the rhythm and melody of speech. Prosody is pivotal, both for a fluent spoken communication and for the very acquisition of a spoken language, and should thus be given top priority in the language classroom, particularly at the early stages.

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Rhythm and melody? If you sing a song in a choir you will probably find it quite difficult to sing in another tune than the rest of the choir, and almost impossible to sing in another tempo. If you want to learn a new song, you will probably prefer first to sing along a couple of times together with someone who knows the song already. The alternative, listen first and sing then, will surely be much more difficult and presumably not preferred. The same thing, of course, applies to speech in chorus.

**Argument #3: Choral practice multiplies student-speaking time.**

An eternal problem in language pedagogy is the heavily biased relation between teacher speaking time (TT) and student speaking time (ST). In several investigations it has been found that the TT is about 70-90 percent of the lesson time. The rest of the lesson time has to be shared among the students...

One the one hand, it is essential that the teacher speak as much as possible to provide abundant input of the target language. On the other hand, it is essential that the students get a chance to use the target language as much as possible. This paradox may be solved by choral practice. The teacher utters the target phrase 7 times before the students to enable them to grab the whole phrase into their working memory. Then the teacher and the chorus speak in unison for 15-25 times, and so they keep alternating as long as the teacher deems necessary. Also, exercises with individual students should be frequently alternated with whole-group choral practice.

So, for instance, imagine you have a class of 15 students practicing in chorus for 20 minutes. Simple arithmetic yields 15 times 20 equals 300 minutes. Three hundred minutes equals five hours, five hours of intensive and effective student speaking time in half a lesson. And actually increased teacher speaking time, too. Very time effective.

**Argument #4: Choral practice provides immediate feedback for the whole class simultaneously.**

Immediate feedback with ample praise is essential to build up motivation and keep it high. To achieve maximum effect, it is best to deliver the feedback within seconds, i.e., within the normal time span of working memory. Note that this time span is naturally prolonged with experience. Vice versa, this means that the average beginning learner has much shorter a working memory than the average teacher ever can imagine.

**Argument #5: Choral practice gives "shelter" to shy students.**

Psychological inhibition often is grounded in feelings of insecurity and inadequacy. After a good round of chorus practice, everybody will feel more secure and accomplished. The shy students will get that feeling stronger than the others, because this may well be the first time they ever do feel that way!

**Argument #6: Choral practice provides the foundation of pronunciation within weeks.**

Suppose, for the sake of argument, that you are a phonetic-fanatic teacher, and somehow you have managed to get your group of learners to agree to your idea: to only practice prosody and pronunciation for three weeks, three hours daily, mainly in chorus with you, using only one single page-worth of practice phrases. This will happen: Within the first week, most of them will inevitably know most of the phrases by heart - with grammar and all. Nice! During the second week many of you may feel sick ... But a contract is a contract. After the third week, do you think it is possible that a majority of those students would not speak those phrases exactly or almost exactly as you do yourself? And what would stop them from applying the same good pronunciation habits for the rest of their language course - and their lives? In that perspective, what is a couple of weeks of tedious, deliberate practice, even if, at first sight, it might seem as a bore or even waste of time?
Argument #7: The basic phrases are representative of all other phrases.

The pronunciation is but a small part of a language, a surprisingly small part. There are, typically, a couple of dozen speech sounds, and less than ten prosody rules. An arbitrary collection of phrases or short dialogues, corresponding to no more than a page of written text, will typically provide examples of all there is to learn about prosody and pronunciation in that particular language. What collection of phrases you happen to choose makes no difference - all and any page will make equally good examples of, for instance, English prosody and pronunciation. Look up any word in your English dictionary, and it will be pronounced with English vowels, English consonants, and English prosody. Surprised?

Actually, this often comes as a surprise to both teachers and students alike. But there is little point in moving on to the next and next and next lesson in your textbook, until the previous one is mastered. And that mastery, to any level of perfection desired by the learners themselves, is quickly and easily achieved through choral practice. "Level of perfection desired by the learners"? Yes, let them decide! At least the teacher should not lower the aim in the false belief that "perfect" is impossible. It is possible, indeed.

Argument #8: "Practice makes perfect" is neurophysiologically true.

Neural networks corresponding to memories and all their connected associations arise in response to the stimuli that arrive to the brain. The robustness of long-term memories is directly related to the number of repetitions. An illustrative analogy is walking on a lawn: Tracks will arise where you walk sufficiently many times. Nowhere else. And faint tracks may easily become grassed again, unless rewalked on at times.

Well-automatized motor skills are stored as procedural memories. Procedural memories will never disappear: You can't unlearn how to swim, ride a bicycle, or speak your first language. It only takes up to 15 minutes of careful practice for the central nervous system to automatize a new skill. But it will require many daily repetitions to be consolidated into procedural memory. Do you dare practice the same phrase for 15 minutes a day in three weeks? Children in the process of acquiring their first language actually practice much more than that, though less conspicuously and for many years rather than weeks and months. Everybody knows the result: "Perfect." Also see the companion article in this issue, and the further details below.

Argument #9: Choral practice provides a statistical mass effect.

"Statistics" in the sense of a large number of repetitions has been shown to be an important factor in first language acquisition. With the great multitude of repetitions as suggested here, with immediate feedback, the second-language learners, too, will get a statistical feel for what is correct and not, and for when they transgress the boundaries between categories. Also, representative words, word order, and morphology will slip into the learner's mind and remain. The "track-in-the-lawn" effect.

Argument #10: Extensive choral practice may work as an emulation of first-language acquisition

There is no shortcut to a new language; you will always have to start with its very tool - prosody, pronunciation, and basic word-order rules. This is how first-language acquisition has evolved through millions of years. Prosody for one year; pronunciation and basic grammar for 4-5 years; advanced grammar, discourse, pragmatics, writing, and reading for 10 years - and the rest of our lives. Mother Nature usually is wise, and obviously there is something smart with her natural ways, because every normal first-language acquisition ends up with a "perfect" result, by definition. Let us emulate that for second-language acquisition. Here is one way to do it.
Somebody wants "hard facts" first, before venturing on a radically new way? There are none, as yet. But rest assured, there are no hard facts whatsoever to support any of the currently used pronunciation methods either. In the extensive meta-analysis by Norris and Ortega, they did not even find enough studies of sufficient quality to include pronunciation techniques in the meta-analysis (Norris & Ortega, 2000). Rather, decades of disappointing experience with the average results as judged from the wide-spread varieties of "foreign accent", sometimes even socially and professionally stigmatizing, shows that something radical has to be done. A detailed account of the proffered methodology and its scientific rationales and support, with more than 200 annotated references, is given in a book, unfortunately only in Swedish (Kjellin, 2002); see a review in English (Cruz-Ferreira, 2003).

**Minute-by-minute protocol**

Many teachers fear that the learners will find the repeated pronunciation drills boring. In my experience, however, it is usually only the teachers who find them repetitive and boring. But for the learners, each repetition is a new version of their pronunciation, and they feel very clearly how they improve more and more each time they repeat. This is an important feeling, because the feeling of one's own success is strongly addictive, like a drug, and they will want to feel more and more of it. Thus the process itself will enhance motivation for prolonging the process. So it is imperative that you, the teacher, give praise and encouragement with an ever-happier smile for each repetition, and that you give the learners the chance to keep repeating until they are satisfied/saturated. It is not important that everything be "perfect" for you to exclaim "PERFECT!" or "ALMOST PERFECT!", only that you are satisfied with the particular little detail that you happen to be paying attention to. Eradicate the word "no". When something does have to be changed, I will say, "Yes, 95% perfect! Now also do like this..." <demonstrating the pertinent detail with some dramatic trick>. Ultimately, you will be required to pay attention to "every" detail, one at a time, and keep practicing it up to sufficient - i.e. learner-requested - perfection or mastery.

This all will mean, in effect, that the practice session as such will begin only after that level of "perfection" is attained, i.e., after some 10-20-30 initial repetitions with your enthusiastic feedback after each one, depending on the learner's level and the difficulty of the phrase. Because only then will the automatization and saturation process start. The 10-30 initial repetitions are only the search for mastery. The rest will be the consolidation of it. So don't ever, ever stop practicing after just 20-30 repetitions; that's a terrible waste of time and effort, because the effect will soon be lost. Instead, you should usually keep repeating the phrase in chorus and with individuals for at least 100 times, often much more. During individual exercises, cycle frequently between all-group-chorus and the individual solo and yourself solo. The rest of the group will listen attentively and learn just as much as the particular individual does. Quickly shift back to all-group-chorus after 2-3 repetitions, habitually, regardless of learner's attainment, in order not to embarrass anybody, and also in order to meet the eagerness of the rest of the class to repeat again.

If your students will only get a chance to repeat in chorus and individually some 10-20 times per phrase and then go on to the next stuff, then they are sure to be bored by it. Because they feel that they don't master it yet. In that scenario, even 10 repetitions will be too many. The trick is the incredibly satisfying feeling of success the learners get when they feel the effect of automatization after, say, 50-100 repetitions, as above.

On introducing a new phrase I will say, "Just listen to me 7 times, then we will say it all in unison." By the 3rd-4th time most mouths will begin to mimic me silently. And by the 8th time everybody will be prepared and ready to speak it out, and thanks to the chorus they will manage it, particularly the rhythm and melody, which will be rather irresistible, due to those direct neuronal connections between the auditory centres in the temporal lobes and the mirror (imitation) neurons in and around the oro-facial motor areas in the frontal lobes. After another 10-15 repetitions I'll ask them to silently listen again. Because by then they are ready to discover new details. And then "get back into chorus when you feel ready for it". Etc. etc.

They very quickly learn to say the target phrase "perfectly", to their own great surprise! Sometimes, after some 100 repetitions I will ask them, "was this exercise boring?" Nobody ever yet said yes!

A couple of weeks into the language course I will shock the students by requesting the individual just being grilled, to come forth and play the teacher's part in choral practice. I dare do so, because their pronunciation per practice phrase will, by then, be identical or nearly identical to my own pronunciation. After the first shock and horror, they will be very proud to play teacher and lead their peers in an additional great number of repetitions.
Eventually, all of the students will play teacher several times. In this process, they will lift themselves by their hair and perform even better. And their peers will listen ever so attentively, trying to detect any faults. In this way, it will be easy to keep practicing the same sample phrase for even more than the stipulated 15 minutes. They don't notice that, because the situation itself is new. The reader may be surprised, and so am I, indeed, but it often happens not only that the students keep practicing during the breaks, but also that they even happily forget about the breaks altogether! I attribute that phenomenon to the upward-spiralling motivation induced by the addictive feeling of success.

Good luck!

References

