

Other aspects of using a chart and a pointer for teaching pronunciation

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New teachers soon become aware that simply asking students to copy models of L2 rarely leads to good pronunciation. Pronunciation doesn't take care of itself, and has to be both taught and learnt. Getting students to be able to produce sounds and words well requires tools and in our view the one indispensable tool is a good phonemic chart, designed to be hung on the classroom wall so that both teacher and students can use it often and easily. In this article we describe the advantages of such an approach and some of the techniques for animating a chart with a pointer.

With languages like English and French whose writing systems do not reliably reveal the pronunciation of words, it is necessary for textbooks and the teacher to supplement the information that the standard written form provides. In class, the teacher needs to be able to ask students to pronounce a sound, a word or a phrase correctly and to identify individual sounds so that they can be worked on.

MORE TECHNIQUE

Pointing and 'reading' sequences

When you are pointing a sequence, you know what you have in mind. For your students, 'reading' a sequence is more challenging than the normal activity of reading text:

- Their eyes can never flick forward to anticipate what is to come.
- Their eyes cannot flick back to remind themselves of what has already been pointed. They have to keep the sequence in their minds as it unfolds.
- There is no opportunity to read in chunks, in the way that letters on a page are chunked when reading.

When first pointing for a class, you need to be sensitive to your students' ability to read sequences: aware of the challenge but aware, too, that their ability will rapidly improve.

Following the pointing of a sequence of sounds requires presence and generates a certain healthy tension. However, if the students become anxious about being able to retrieve what has already been pointed, they will be unable to stay with what is being pointed now. This is a sign that the sequence was pointed too fast or was too long for their current capacity to read and retain.

How fast should I point?

Experienced teachers tend to point at around one sound per second. If a student takes too long to point a string of rectangles or a sentence, he should be asked to point the whole sequence again until it is smooth.

Don't be too quick to point again ...

Once you have pointed a sequence of sounds or have put a rectangle with its sound into circulation, you should expect that students will be able to find it again on a chart. If they ask you to point it again, ask if anyone in the class can do so. Wait several moments. Someone usually has the sequence, or at least part of it, but may need time to be sure enough to come out and point it.

... but sequences can be both too difficult and too easy

If a string is too long and/or pointed too quickly then some students won't be able to follow the sequence and you will sense consternation in the class. There are then various ways to retrieve the situation, among which:

- Get a student who did follow it to come out and point the sequence. They will probably point it more slowly than you.
- Get someone to come out who you suspect will have it almost right. If they make a mistake, you can indicate this and, if then necessary, choose how to correct it.
- If the sequence is a phrase, ask if anyone can point just some of it. Reconstruct the rest of the sequence around the meaning of what has been pointed.
- Get two (or more) people to come out and collaborate in reconstructing the sequence.
- Come clean! Say something like, "Sorry, that was my mistake. I pointed it badly," and do it again in a way that will be easier for them (building it more progressively, pointing more slowly, pointing in two parts, etc).

If a string is too short and/or pointed too slowly then students lose interest and the activity loses momentum. It is better to err on the side of speed and then to have to slow down than to point too slowly and lose the students' presence to the task through the lack of a challenge. Teachers who are new to pointing are often surprised at how much students can handle and how this capacity grows quickly as they become more familiar with the materials and the task.

Using a chart to correct

Normally, touching a rectangle with the pointer indicates the sound required. However, sometimes you might tell a student that you are hearing something different from what he is trying to say, and you can point to the rectangle for the sound you are hearing. For example, he is trying to say *cat*, pronounces it like *cut*, and you point to the /ʌ/ rectangle to show him the problem and say, "When you say this," pointing to /æ/, "I hear this," pointing to /ʌ/.

If a student produces a sound that is ambiguous, you can point between two rectangles on the chart to show that you cannot tell which one the student is trying to say.

REASONS FOR INTRODUCING SOUNDS GRADUALLY

As Roslyn said in one of the companion articles to this one (Young 2017), it would be a mistake to teach all the sounds on a chart before starting to create sequences of sounds. To do so would be to 'teach the chart' rather than teaching the language.

It is best to work with sequences as early as possible, even when only a few sounds are in circulation, for at least three reasons.

Reasons for introducing sounds gradually: (1) the motor learning task

Pronunciation is a motor skill, and like all motor skills the articulation of new sounds in all the contexts in which they can appear will take time to develop. Even sounds which appear to have direct counterparts in L1 may in fact need to be produced differently in L2 either because L2 has a different articulatory setting from L1, or because there are other, subtle differences between the sounds (plosives being aspirated or unaspirated, stronger or weaker coarticulation with neighbouring sounds, etc).

Experiencing the production of each new sound in different contexts from the start teaches the students two things. Firstly, it informs them about the actual demands that learning the pronunciation of L2 will make on them: that of adapting every vocal

gesture they learn to every context it may appear in. Secondly, it gives the students both time to begin this work and experience in how to do it efficiently.

Working within a set of sounds that the teacher has kept limited, a student can have good pronunciation within five minutes and know it, but the full skill can take months or years to develop. This process will continue after the end of any course. This means that a teacher's most valuable contribution to her students' learning is to ensure that they know how to continue to make progress by themselves: they know what to do and they have criteria to evaluate their performance.

When teaching sequences of sounds as vocal gestures, there are various things to keep in mind:

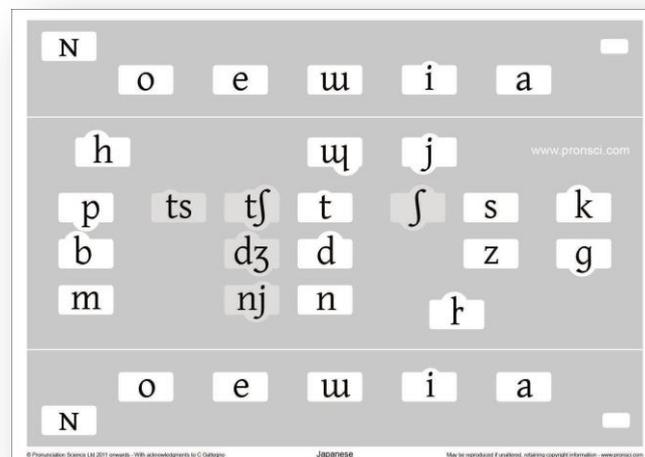
- The task has to remain manageable for the students: they must not be confronted with too many difficulties at once.¹
- Motor skill practice must be kept intrinsically interesting. Working on different arrangements of a set of sounds—having the changes rung—presents a challenge which students feel they should be able to rise to, and hence maintains their interest.
- Each new arrangement should be chosen as a function of how the students are managing. You will start with an idea of the sounds that you wish to introduce and work on, but you should be flexible in how you do this: how fast, with how much practice, in what order, etc.
- Practice should not be allowed to become repetition. Practice is an activity which requires presence and awareness. If students drop into mere repetition, you must change the task.

A lack of recognition of this final point is what has made 'drilling' controversial. Drilling as practice—when each new utterance is felt by the students to be a challenge which the teacher has chosen or crafted for them in the moment—is beneficial. Drilling as repetition—when the changes in the utterance can be responded to mechanically—is a waste of time. The 'inner climate' of the students in each case is visible to the teacher: as interest or boredom respectively.

¹ As learners, we are frustrated when a coach or teacher insists that we work on a new challenge when we are still preoccupied with the previous ones. This forces us to fall back into using pre-existing automatisms rather than the new movements we are trying to develop. In language learning, this means that the learners fall back into L1 articulations if they are moved on too quickly.

Reasons for introducing sounds gradually: (2) keeping pronunciation integrated

The pronunciation phenomena which distinguish L2 from L1 can include the articulatory setting, the strength of coarticulatory effects, the use of speech breathing activity to create prominence (as in English), tones (as in Chinese), pitch levels (as in Japanese), and so on. Such specificities should not be taught as an afterthought, or an add-on to the sounds; in young native speakers they are the system through which the sounds are produced, and are learnt in parallel with them. These phenomena can only be worked on using sequences of sounds, which are then produced through the system that the specificities create, meaning that sounds and system are learnt together.



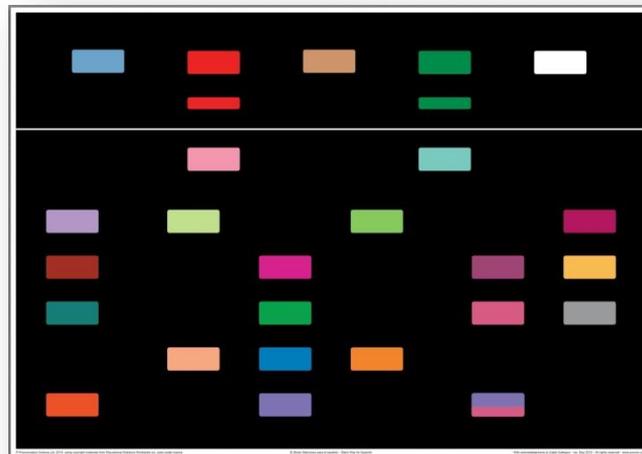
PronSci Japanese IPA phonemic chart

The teacher should therefore introduce the specificities of L2 pronunciation as early as possible. To integrate these into their L2 pronunciation, students will need to change their concepts of what is natural in the pronunciation of a language. At the start, these concepts will only reflect L1. Now, to expand their concepts, proponents of the Articulatory Approach argue that students need to learn the motor patterns of L2 that implement these systems—those which go beyond the particular articulations of any given sound.

Early work with long sequences means that the students can engage with the pronunciation systems of L2 from the start. This is the time when students are most receptive to concept changes and when these have the most impact. The students see that L2 is a genuinely foreign language and are happy to embrace its differences from L1.

Introduced later, these systemic differences are experienced as a burden; as additions rather than being intrinsic to the pronunciation of the language. Introduced from the start, they are experienced as a novelty and a source of delight.

In the three examples of sequences growing in length that we saw above (*tea*, *team*, *steam*, etc), the English sequence sets up work on stress and reduction. The French sequence sets up work on coarticulation for French: maintaining the exact quality of vowels during a sequence and adapting the consonants to the vowel contexts (before and after) that they find themselves in. The Spanish sequence sets up work on the equal weighting of Spanish vowels and the resyllabification of consonants between words /'e.sa.'si/.



PronSci Spanish colour phonemic chart

Reasons for introducing sounds gradually: (3) avoiding memorisation

A phonemic chart for a given language will have between 20 and 50 sound-to-symbol or sound-to-colour associations. Memorising these would be a daunting and oppressive task.

Since people can only hold a handful of items in their minds before they feel the need to start memorising or otherwise noting them, activities that promote learning by acquaintance need to start when just a handful of sounds have been introduced.

As a by-product of the work on sequences of sounds, the students' repeated contacts with the sound-to-rectangle associations leads to them knowing these associations through acquaintance, without any attempt at memorisation. Such learning by acquaintance—just 'getting to know'—is also how we learn the layout of

a supermarket: where to find groceries rather than cleaning products, for example. No one does this by memorisation.

However, every student does not have to feel secure about every association before you introduce a new rectangle. This would become dull. Your aim, rather, is to keep students in a state of healthy tension, neither bored nor insecure, and certainly not panicking because of memory overload.

Even when you are working skillfully, you should be alert to the possibility that some students will try to memorise the associations. School habits die hard! These students complain about not being able to 'remember the chart'. You should immediately discourage them from trying to memorise it. You can tell them that this is a sound game and not a memory game, that they will learn the association of sounds with rectangles naturally by following the activities you propose, but that if they don't, that this is not a problem. Their task is just to explore the pronunciation of L2. Somebody else will always be able to help with identifying a rectangle.

You should feel at ease with the fact that some students may never associate all the rectangles with their sounds, provided they are working on how to produce them all.

POINTING LONGER SEQUENCES: PHRASES AND SENTENCES

When working with sentences, you need a way of working with the words and how they are ordered and grouped. Writing the sentence on the board can reduce the exercise to nothing more than reading. It would be far too cumbersome to repoint a long phrase repeatedly but two other techniques work well instead.

Finger correction

Firstly, you can 'place' words on your outstretched fingers. The words can then be grouped by closing some fingers together and leaving gaps between others.



"Last week, I went to London."

Up to 10 words can easily be displayed this way and individual words referred to. 15 or even 20 words can be worked with if you move your first hand to the left of your

second (so that the students see this appearing on the right) and similarly with your second hand, which becomes the ‘fourth’ hand. The students know that you are using your hands a second time and are not perturbed by this at all. If you want to start a sentence again, a gesture which ‘shakes’ all the words off your fingers, like water being shaken away, indicates that the sequence is being restarted. In addition, after holding your hands up again you might wiggle the first finger and say the first word of the sentence yourself.



Offering fingers for a student to point on

Lines for words

Secondly, you can use ‘lines for words’ on the board, each line (of 5–10 cm in length) corresponding to a word in the sentence. So the sentences,

It’s seven o’clock. The alarm clock’s ringing. Mr. and Mrs. Green are waking up.

would appear as below:

_____ • _____ • _____ •

Note that the punctuation should be visible since it guides the students as they read.

You can add a few cues if necessary.

— 7 — • — — — — — • — — — G — — — •

With your pointer, you get the class to read the sentence, pointing by breath groups as they go along. Put the pointer at the beginning of the group of words to be read, and then loop it across in a single smooth movement under the words you want the students to keep together, hold it there until the class reaches the end of the group, then loop it on through the next group of words. You can regulate the speed at which

the students read by changing the speed of your pointing. The whole sequence can be repeated several times until it sounds English.

Build each part of the sentence carefully, so that the students are quite sure what each line represents. Working on longer phrases with this technique helps students to become more fluent in their speaking.

DESIGN PRINCIPLES FOR A SUCCESSFUL CHART

There are different designs of phonemic charts available for many languages. With help from other teachers, we have designed charts for Pronunciation Science Ltd (PronSci) for British English, American English, French, Spanish, Italian and Japanese, and have had preliminary thoughts and discussions about designs for several more languages. The finished charts have gone through many iterations of design ideas that have been tested in the classroom, leading to further modifications being considered, and so on.

As a result, we can list some design principles that contribute to a chart being as efficient a tool for teaching pronunciation as possible.

Pedagogical inventory

If a chart is to be used to tackle all the pronunciation difficulties of L2, it needs, at a minimum, to contain a full inventory of the sounds that make up the language. The starting point for this inventory will be the set of phonemes that phoneticians will have identified, but the concept of a phoneme has a linguistic definition that does not always serve the needs of language teaching. An optimal pedagogical inventory may not be strictly phonemic.

Conceptual change

A chart is a tool for teaching pronunciation, not for teaching phonetics. So the arrangement of phonemes should contribute to as many as possible of the conceptual changes that are needed by learners to enter into the new language. For example, here is how the PronSci charts deal with various sound systems.

- In Japanese, there are two pitch levels for syllables, so the Japanese chart repeats the vowels both above and below the consonants. When creating a 'high' syllable, the pointer is moved up, when creating a 'low' one, it is moved down.
- In English, the reduced 'vowels' (the schwa family of sounds) are qualitatively different from other vowels, and syllables containing them are never stressed.

They are placed at the bottom of the chart, underneath the consonants, while the full vowels appear at the top.²

- In Spanish, the ‘rising’ diphthongs are created using rectangles that are positioned so that the pointer moves upwards in creating them; for the ‘falling’ diphthongs, the addition of half-height rectangles to the chart means that the pointer can move downwards. The downward movement signals the reduction of the energy required for the second part of the falling diphthong.

In other words, if the learners will need to make conceptual changes, you can (and should) design these into the chart if possible, even if the result departs from a simple phonemic analysis.

Systems and relationships

Within the sound inventories of all languages there are relationships between the elements that can help learners to master the system. The ‘geography’ of a chart can reveal these, inspiring confidence in the logical nature of the pronunciation system and shortening the learning process. For example, in French there is a set of nasalised vowels that can be easily derived from non-nasalised vowels by practice in consciously moving the soft palate to permit or prevent the flow of air through the nose. It makes sense, therefore, for this relationship to be clear on a phonemic chart. In the PronSci French chart, the nasal vowels are arranged on their own row, directly under the vowels from which they are derived.

Arrangements like this help to make what would otherwise seem to be arbitrary sound changes coherent and easy to master. For example, the pronunciation of a final <s> in English (which can be /s/ /z/ or /ɪz/) can be seen as a function of the voicing or otherwise of what precedes it because of the grouping of these sounds. Similarly, the anticipatory coarticulation of consonants before /i/ in Japanese, which makes a preceding /t/ sound rather like /tʃ/ and an /s/ rather like /ʃ/ to speakers of many other languages, can be seen to be systemic from the layout of these sounds on the chart.

These three design principles are, to some extent, cognitive. They give learners confidence and help them to understand the systems underlying the sounds of L2. At a practical level, there are two further principles which help to create a successful design.

² Further distinctions can then be drawn using the dashed circle and rectangles that also appear in the bottom section of the chart.

Clarity of pointing

It is legitimate for a teacher or a student to point anywhere within a 'rectangle' (an area of the chart which contains a sound). If this rectangle directly abuts another, then touching the chart near a border can lead to confusion about which rectangle is being pointed to.

The solution is to make the 'landing area' for the pointer for each sound completely distinct, with space between it and the rectangles for other sounds. The pointing will then be clear and unambiguous.

Asymmetry and blank space

To lay out the 'systems and relationships' of a language as fully as possible, it is necessary to depart from grid-like or 'pigeonhole' designs for phonemic charts, as these limit the relationships that can be portrayed. As can be seen from the figures in this document, a freer approach allows relationships to be based not only on row and column position, but also on relative proximity. The result is a richer and more coherent representation of the reality of the language.

This has a happy practical benefit, too. Students find it much easier to navigate around a chart which has some asymmetry to it. For example, when a teacher is using a PronSci chart with phonetic symbols, students quickly discover that they do not need to look at (or memorise) the symbols within the rectangles. Instead, they come to use the position of the rectangle on the chart rather than the symbol within it to trigger and to identify its sound.³

POINTING ON OTHER TYPES OF CHARTS

Pointing is a process that unfolds in time, the results of which are ephemeral. As we said in the Introduction, compared with presenting material in a written form, these two characteristics might at first sight appear to be disadvantages. In fact, they make pointing the more effective pedagogical procedure for work on pronunciation.

The various advantages that we have described for pointing for pronunciation extend to work on spelling and also word choice and word order (grammar), all of which can be worked on using charts.

³ This may seem surprising, but it is easy to check. After a short period in which you acquaint your class with an asymmetric chart, either colour or phonemic, you can turn its face to the wall and continue pointing as if the rectangles were visible. You will find that your students will do a remarkably good job!

As part of his Silent Way approach, Gattegno developed a Spelling chart⁴ and Word charts for many languages. The updated PronSci versions of these charts make them suitable for use by intermediate and advanced students (Gattegno was concerned with how to teach beginners).

e	ee	ea	er	ir	or	ur	ue	ou	oo	or	oor	aw	al	a	ar	a	al		
ie			ear				u	ew	o	ore	our	ar	au	ough					
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ie	o	u	ie	oe	u	ieu	ah	al		or			ow	eau	oh	e			

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p	pe	f	fe	th	t	te	ed	ch	tch	t	s	se	c	ce	sh	t	x	k	ke	c	ck
pp	ppe	ff	ffe	h	tt	tte	d	che	tsch	c	ss	sse	sc	sce	s	ss	xe	kk	qu	cc	ch
ph	pt	ph	ft		th	bt	ct				sw	st	cc	tz	ch	sc	cc	kh	que	cu	che
gh	bp	gh	ve		't	pt	cht				's	sth	ps	z	c	che	sch	xc		cqu	cch
b	be	v	ve	th	d	de	ed	j	dge	g	s	se	z	ze	s				g	gg	qu
bb		vv	've	the	dd			dj	dg	ge	ss	ts	cz	zz	ge	t	x		gu	gh	cqu
bu	pb	f			'd	ld	dh	ch	d	gg	's	's	's	x	z	j	xh		gue	ckgu	cu
m	me				n	ne	kn	l	le										ng	n	
mm					nn	gn	ll	ll	oll	h									ngue	nd	
mn	mb				nd	pn	'll	lle	oll	wh							x				
'm	gm	m			n	dne	gne	mn	'll	le	t					zz	x				

a	e	ee	ey	i	y	a	ar	e	er	i	io	o	or	ou	our	re	u	ure	eu	u			
ae	ay	ei	ia	is	ois	ae	ai	au	eau	eo	ere	ha	hi	ie	iou	o'	oi	ough	ro	y	u	hou	ou
ai	ea	hi	ie	oe	u	ah	are	ea	ei	eou	eur	he	ia	ier	ir	oar	oo	r	ur	yr	uu	o	uo

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British English - Spelling chart

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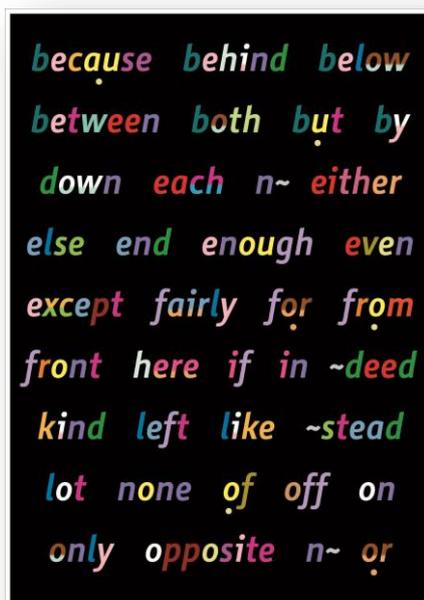
PronSci British English Spelling chart (at a smaller scale than the other charts)

A Spelling chart portrays all the possible sound-to-spelling correspondences for a language, grouped by sound, with groups positioned in the same layout as the Rectangle chart.

This means that once the correct pronunciation of a word has been established on the phonemic chart, the orthography can be worked on very naturally on the Spelling chart, as part of a systemic presentation rather than as a word-by-word learning process.

⁴ Which he called a 'Fidel', the Amharic word for its syllabary. Gattegno developed his first charts in colour while on a UNESCO mission in Ethiopia.

Gattegno's Word charts present the 'function' words of a language. In the case of English, for example, he spread about 500 words over 12 A2-size posters printed in colour on a black background. Gattegno excluded straightforward vocabulary items. Instead, the inventory is of those words that are unlikely to be direct translations of L1 words, because of differences in either their meaning or usage, or both. They are the words from which the 'spirit of the language' is constructed.



One of the PronSci American English colour Word charts

Because of the move up in 'chunk' size from the single sounds of a phonemic chart to full words, the Word charts allow sentences to be created and worked on. The PronSci revisions to Gattegno's charts present the function words of the language in sets, for example the set of verb auxiliaries and the set of time words. As with Gattegno's charts, 'luxury' vocabulary—*lawn, tree, car*—can be introduced using a phonemic chart, Spelling chart or in other ways.

Use of both Spelling and Word charts brings the advantages of pointing described in the various sections above to the other aspects of learning a language. They also give students another of the overarching benefits that we noted in the Introduction: a sense of what has been accomplished within a system and of how much remains to be done (analysis within a synthesis).

Students find working with these charts enjoyable, too: they enjoy following the teacher pointing, they enjoy pointing themselves, and they enjoy pointing vicariously when a fellow student is at the charts.

Finally, colour comes into its own with these charts, because the Spelling and Word charts have their pronunciations encoded within standard orthography using the colour code introduced on the phonemic chart. Pronunciation is thus further embedded within all the other activities of the language classroom.

CONCLUSION

In this article, we have tried to answer two main questions: why one should use a chart and a pointer when teaching pronunciation, and how one can go about doing so.

For serious work on pronunciation, sounds must be separated from spelling. To do this, the alternatives to pointing on a chart all involve writing. Pointing has two intrinsic pedagogical benefits over these: its qualities of ephemerality and of creating a process which unfolds in time. Compared to writing, it is also a more elegant and efficient way of dealing with pronunciation issues during the other activities that take place in a class. Some of the benefits of pointing that we have described are subtle, but they are very real.

To begin working this way, the first steps are to choose a chart and to buy some pointers. Many phonemic charts are available as free downloads which you can print or get printed at an appropriate size for your classes. For a download of the PronSci charts for British and American English, and for more information about their use and layout, visit www.pronsci.com/links.

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