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## Sound Foundations. What's General in Applied Phonetics?

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### Abstract

Focusing on general phonetics and its role in the world today, this paper explores what the term really means. Against a historical background, it outlines the development of general phonetics from its Victorian inception to the present day. It looks at the theoretical and practical sides of the subject (including ear-training and production training), and summarizes the IPA Certificate examination syllabus [1, 2]. The paper considers the impact of reduced training opportunities and asks what this means for availability of expertise in terms of the widening demand for qualified practitioners. Arguing the importance of general phonetics in the modern world, the paper further seeks to encourage and promote the subjects' future security. It asks whether general phonetics is the same today as a century ago and whether we need it. Additionally, the paper seeks to clarify the confusion which seems to exist for some people today between the 'pure' and 'applied' forms of the subject [3].

**Keywords:** General phonetics, applied phonetics, practical phonetics, International Phonetic Association, IPA Certificate.

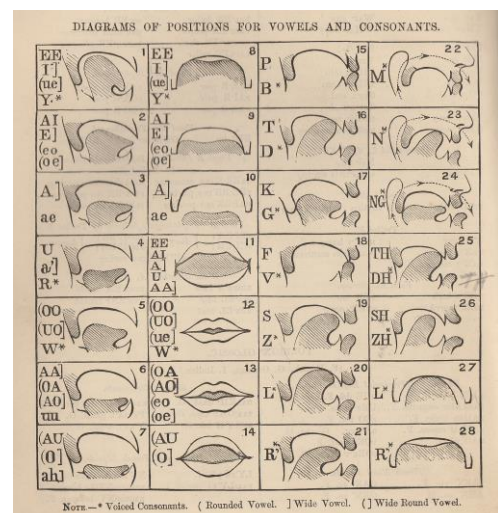
### 1. Introduction and background

General phonetics today underpins and/or inputs to an ever widening range of applications – applications in language teaching (perhaps the oldest, most accessible and fully documented application), the arts (singing, acting, etc.), media (especially broadcasting), commerce (live and automated call centres, both types reliant on phonetic input), interpreting, flying aircraft, law (forensic phonetics, speaker identification), medicine (including speech and language therapy, and even – especially in the US – helping to minimize the impact of dental prostheses), industry, technology, and so forth. The list is ever-growing. Strangely, however, it seems we are increasingly in danger of losing sight of the part general phonetics actually plays in all this!

Each of these applications requires general phonetic input. But just like any other applied

discipline, you cannot engage in its application unless you have specialist knowledge and skills. It's not enough for the practitioner-teacher simply to know aspiration as 'a puff of air', or t-glottaling as a 'gap' or 'pause' in the continuum. There is much more to general phonetics than this and language teachers should know better than to rely on the myths which are rife in many language courses! Puffs of air and gaps or pauses might help in getting the point across to phonetically untutored language learners, but before you can refer to phonetic phenomena in this way, you really do have to have a grasp of the facts behind these impressions.

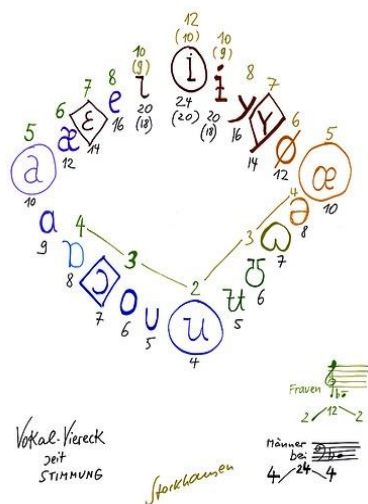
In artistic performance, for example, articulatory phonetic input has contributed to singing and theatre for well over a century. In 1877, Alexander Ellis produced one of the earliest publications in this field [4], in the form of a pronouncing primer for the 'principal European languages', complete with vocal tract drawings, to assist singers in making the correct sounds. These general phonetic illustrations (Figure 1) are among the earliest printed examples of the very diagrams we still use today.



**Figure 1:** Vocal tract diagrams, lips and tongue sections from Ellis [4]:14

Also in singing, composers such as Ravel and Scriabin made highly specialized application of acoustic phonetics in so-called 'vowel songs'. More recent compositions were by Stockhausen and the

Belgian composer Ruelle. A transparently phonetic output can be found in Stockhausen's *Stimmung* (see Figure 2).



**Figure 2:** Stockhausen's initial vocal square sketch indicating vowels and the overtone achieved with each.  
(© [www.karlheinztstockhausen.org](http://www.karlheinztstockhausen.org))

Then there is accent coaching. You only have to surf YouTube to find dozens of people, setting themselves up and teaching you how to speak 'correctly', 'differently', 'better', or 'more commandingly' than you do right now! Some of this is underpinned by genuine phonetic knowledge, but much more is simply ad hoc and ill-informed. Fortunately, however, for every amateur, and for every out and out charlatan, there are also meaningful and well-qualified applications in this field. The most stellar of recent times, perhaps, is the linguistically focused approach taken by the Crystals [5] in their recreation of Shakespearian Original Pronunciation (OP) for the Globe Theatre company. As we shall see, a three-way mix of trained perception, accurate production, and phonological awareness is required for all types of accent training whether in the language classroom, the theatre, the interpreting booth, or the airport control tower. Applied phonetics, then, is not in itself general phonetics. General phonetics is the discipline on which all applications are built, each taking what it needs.

Although our awareness of and interest in the spoken word and phonetics dates back hundreds of years (sound-symbol collocations date back to the times of the ancient Egyptians, and Sanskrit scholars classified speech sounds on much the same principles of voice, place and manner as today's international phonetic alphabet), general phonetics is a relative newcomer among academic disciplines, only being introduced into the university curriculum in the late 1940s by the Edinburgh-based phonetician, David Abercrombie. Phonetics as we

know it today began to emerge in the middle of the nineteenth century with input from fields as diverse as medical science, physics and linguistics. Each of these specialisms has continued to be interested in phonetics and applications of the subject have expanded in parallel with developments in science and technology. Today however, technology itself may be in danger of contributing (at least partly) to a demonstrable decline in phonetic expertise.

Linguistics input to phonetics in the late nineteenth and early twentieth century was first and foremost a philological one, and it was from such a background that a group of European teachers of modern foreign languages came who had for some time been experimenting with the use of phonetic transcription in teaching pronunciation. They had also been working to develop a new phonetic alphabet for transcribing in particular the three main European languages of the time, French, German and English. Phonetic transcription, of course, was not a new idea at all, but technological developments in printing and the advent of the typewriter imposed new constraints on alphabets. These teachers needed to ensure that their phonetic alphabet could not only be handwritten but was also accessible to printers for replication in textbooks, academic papers, journals, dictionaries and the like. It needed to be agreed and codified.

In 1886, this group established L'Association Phonétique des Professeurs d'Anglais (The Phonetic Association of Teachers of English), soon renamed Dhi Fonètik Tîcerz' Asóciécon (The Phonetic Teachers' Association). Presided over first by Paul Passy, the second president was Wilhelm Viëtor. Although also a language teacher, Viëtor had for some years been establishing his credentials as a general phonetician, publishing in 1894 one of the earliest accounts of experimental phonetics complete with kymograms and palatograms [6]. During his presidency, in 1898, he used these techniques to illustrate his *Englische Schulgrammatik* [7], described by Henry Sweet [8] as the first ever published attempt to apply phonetics to the teaching of English. Mainly in the context of language teaching, the techniques were quickly taken up by others, including Paul Passy and Daniel Jones. But Viëtor clearly saw that the subject was ripe for application in any number of fields. In 1889, still during his presidency, and motivated in my opinion by this belief, the group was re-named again as the Association Phonétique Internationale, this time dropping all reference to teaching. This dissociation with pedagogy left the way open for specialists from all disciplines to become involved.

This final renaming of the association, then, might be regarded as a watershed – direct evidence

of recognition of the importance of general phonetics in its own right. Insights from this knowledge base could be applied as appropriate not only to language teaching, but also to a myriad other fields as we see around us today. Unfortunately, the dominance of its application to language teaching and its success in this field has served to blur the very distinction between ‘pure’ (or ‘general’) and ‘applied’ phonetics. Its application is often considered to be the totality of the discipline. I think it is important to dispel this myth and it was this belief that motivated the distinction made recently by Ashby and Ashby [3] between straight teaching and learning of phonetics on the one hand (so, general phonetics) and phonetics in teaching/performing/technology/etc. on the other (applied phonetics). What the early pioneers understood very well was that they needed to undertake the first in order to carry out the second. I would further contend that it was this insight that then led to the establishing of the IPA’s Certificate examination, responding to a widely felt need in Europe on the part of language teachers and others for accredited phonetic know-how long before it was taught in universities.

## 2. Knowing and doing general phonetics

What the phonetician needs to know and do – general phonetics – is summarized in the IPA Certificate syllabus [1]. But before looking in detail at this, it is useful to think for a moment about where these early specialists were coming from. A hundred years ago, Daniel Jones said much what I am saying here. In many ways, therefore, we are simply reiterating and reviewing what has already been said and reminding ourselves of what is already known.

In order to be able to utilize phonetics as a tool, those specialists understood that they needed not just a way of representing sounds in writing, but also an in-depth knowledge of both the physical and physiological nature of speech. Although it was still another forty years before Abercrombie’s first undergraduate university course in general phonetics (called the Ordinary Course in Phonetics) would become available, it was precisely general phonetics that underpinned and facilitated all language-specific description. But such is the nature of speech that even general phonetics had two faces. Daniel Jones wrote on many occasions about the principles and practices of the phonetic method of pronunciation teaching. He talked not only about the theory of articulatory phonetics but also about acquisition of practical phonetic skills being indispensable in helping all learners of foreign languages acquire good pronunciation, repeatedly reiterating the value of a phonetically trained teacher [9].

General phonetics is therefore complex. It consists not only of theory but also of dynamic, practical skills – ear-training and production-training (called mouth-training by Jones) – embracing any speech sound that might be encountered (sounds actually used by speakers of languages, as well as sounds that might result from a speech disorder in a clinical context, and sounds that language learners might produce in the classroom on the way to mastering the actual pronunciation of a target). In other words, the bottom line was familiarity with the theoretical description, the auditory effect and the production of any sounds that can be represented by the international phonetic alphabet.

In the language learning context, it was also well understood that mastering pronunciation raises different problems for speakers of different mother tongues. Japanese-speaking learners of English, for example, will face different problems from Korean-speaking learners, French-speaking learners, Polish-speaking learners, and so forth. Moreover, not only will each of these learners sound different to listeners through making different mistakes, they will also, each of them, hear English differently. Ear-training is absolutely central to many applications of phonetics. Language students, teachers, therapists, language advisers, specialists of all kinds need to be able to hear, recognize and produce the whole range of human speech sounds. And to master any and all contrasts, the student – like the native speaker – first has to be able to hear them. Daniel Jones spelled this out in his Secretary’s report to the IPA in 1935, writing that phonetic methods of teaching pronunciation deal not only with describing articulatory gestures, but also facilitate pronunciation through helping learners *by suitable dictation exercises to discriminate by ear* [my emphasis] *between different shades of sound-quality* [10]: 93.

Essentially, this phonetic method – still used today – imitates the process of natural language acquisition (the learner listens to, tries out, and ultimately perfects the production of sounds). The language classroom becomes an intensive and accelerated version of the more leisurely first language acquisition process.

## 3. The status quo

### 3.1. Reduced opportunities

Fast forward a hundred years, and we find that while these basic phonetic needs remain the much same as they were a hundred years ago, the perception of general phonetics as a subject of study has changed. Training opportunities have changed as well, and in many, newer fields, different needs and priorities

have also developed.

The biggest differences in 2016, however, are that we have a weaker financial climate and a plethora of new technology. Both of these mean that today's training environment is also potentially very different from a hundred years ago. Our market-led understanding and perception of this subject is changing, too. Indeed, such change has been taking place for at least the last 30 years and was already noted some twenty years ago by Ladefoged [11] who described it in David Abercrombie's obituary notice, writing: *The notion of general phonetics as a discipline hardly existed until after World War II. Abercrombie helped define and shape the field. But by the time of his death two events had occurred that changed the role of phonetics: the Chomskyan revolution had made syntax rather than sound systems the major object of study in linguistics; and the needs of communication engineers had become more important than those of language teachers. Abercrombie's view of phonetics is now less central.*

So, traditional general phonetics as a discipline could be said to have had a 'shelf life' of only some forty to forty-five years! Already in the 1990s, as technology and the user-base expanded, basic articulatory phonetics was moving over to make space for more acoustic phonetics.

Alongside this change in the 'face' of phonetics, however, there has also been a change in financial fortune and our more austere economic climate has made its own impact. At the beginning of the twentieth century, when the IPA Certificate examination came into being, much more time was built into educational programmes for phonetics in terms of studying and learning the general phonetics basics. In 1929, for example, Ida Ward published *The Phonetics of English* [12] in which she included a timetable for a *suggested course of speech training in colleges*. This spanned 60 hours of dedicated general phonetics across four academic terms, with 2 contact hours per week during the first two terms and 1 hour per week in the last two. However, time means money and the lack of funding in higher education today is undoubtedly one of the main reasons why the subject is being squeezed out of the curriculum altogether. It is too expensive to deliver in its traditional form.

To provide a thorough grounding in general phonetics, in addition to the traditional weekly lecture covering the theoretical side of the subject, the practical side then requires face-to-face, small group classes. The provider has two separate problems here. First there is the logistics of timetabling the smaller practical groups alongside the full-cohort lecture in today's congested 'pick-and-mix' degrees. Then there is the expense incurred

by small group teaching which greatly increases the number of weekly hours for the teacher and the cost to the provider. To reach IPA *Certificate* standard, each student would need a minimum of 1 lecture hour (attended by the whole cohort) and 2 practical hours per week for 20 weeks (two semesters), with practicals being delivered in smaller groups. For example, a cohort of 64 students divided into 4 practical groups of 16, would entail a total number of 180 contact hours over the year for the teacher. Colleges are thus being asked to deliver a typically science-style programme (lectures supported by small group laboratory-based practical sessions) for arts-based funding (where the full-cohort lecture is often all there is to it!). The cost has become so prohibitive that colleges and universities have been forced to dilute what they offer, or even cut phonetics from the syllabus altogether.

This reduction in the number of training providers was already under way at the time of Abercrombie's death. Ladefoged [11] continued in the obituary: *There are now fewer departments teaching anything like the Ordinary Course in Phonetics. It is interesting to consider what Abercrombie might have done, if he were once again a young person asked to start a Department of Phonetics. He would probably place the same emphasis on distinguishing between language and medium. He would also require phoneticians to be skilled performers in the tradition of Bell, Sweet, and Jones, which he followed.*

Changing demands and finances are not without consequences. A reduction in courses means a reduction in expertise and there are fewer traditionally trained phoneticians around today than previously. Institutions have not only continued to cut back on relevant courses (and sadly, this is true even of the pioneering, world-leading and widely known UCL – the virtual birthplace of phonetics in the UK – as well as lesser known centres such as Reading University), but many (such as the University of Westminster) have eliminated general phonetics courses altogether.

Possibly attempting to justify their actions, institutional attitudes to phonetics have also changed. General phonetics is now often regarded as expendable – the obvious place to save money. There is a view that phonetics is no longer even a necessary part of linguistics – a far cry from its pivotal place in pre-Chomskyan structuralism. Some people say that it's too hard for today's undergraduate students! (Its unfavourable rating in student opinion polls is often because it seems so labour-intensive – requiring disciplined, regular practice on the part of the learner – and has little scope for personal opinion.) Some also suggest that

phonetics has nothing to do with the printed word (the obsession of so much of linguistics today). These views are then used to reinforce the attitude that phonetics has little to offer to an academic course of study – the powers that be arguing there’s not much in phonetics that students need to know anyway. Costly practical training can therefore be eliminated and phonetics immediately becomes the poor relation, a small component of some other course – just one session in many cases of an introductory course to linguistics, or the first lecture of a course on theoretical phonology. This is, frankly, insulting. The late greats – Henry Sweet, Daniel Jones, David Abercrombie, Peter MacCarthy, J D ‘Doc’ O’Connor, Peter Ladefoged – must be turning in their graves. If we fail to fight to restore phonetics to its rightful place in the linguistics curriculum, we are failing them and everything they stood for and we are failing students and future users of phonetic skills. Why phonetics should be so misunderstood and maligned, so badly treated, made such a scapegoat, is unclear. Certainly, our forebears seem to have been more enlightened and forward-thinking than we are today! The upsurge, growth and importance of phonetics a century ago is testimony to this. Phonetics is fundamental to every aspect of language and communication, *even* the written word. No speech, no writing! It’s not like the chicken and the egg! It is abundantly clear that in human communicative interaction, speech came first and comes first! Deep down we know this. We key speech into our mobile phones, like typing on our keyboards, but we don’t call it \*texttype or \*textwrite, we call it *textspeak!*

### 3.2. The knock-on effect

Inevitably, the knock-on effect of fewer training opportunities is a reduced pool of expertise. Yet again, this was already being felt in the 1990s as Ladefoged [11]:90 made clear when he referred to events at a recent ICPHS, where it transpired that *several leading participants [...] were unable to produce clicks and ejectives in words*. Teachers able to deliver a traditional general phonetics training (and able to examine for the IPA) are now greatly reduced in number.

Because of this, it is also increasingly the case that teachers and their students alike misunderstand what is required of them and what properly constitutes general phonetics. The phonetics left in a typical linguistics programme today is often simply diluted theory, delivered by teachers who are frequently specialists in a different field or who are self-taught and have little, if any, practical training or experience.

There is also the knock-on effect of technological innovation and progress. More and more people are tempted to rely on machines to do what they would previously have done manually or by ear. But to rely 100% on machines is a mistaken application of technology – the tail is wagging the dog. Rather than reducing it, these advances actually increase the need for general phonetics as Mark Huckvale’s [13] recent account of the phonetic technologies behind emerging applications (such as text-to-speech, voice dictation systems, interactive voice response systems, speaker verification systems and even speech-to-speech translation, voice conversion, audio indexing and concept-to-speech systems) demonstrates. The need is still there, but the focus is different. The language teacher’s needs are known and catered for, but the technologists of today also need to be able to apply phonetics to their own ends, understanding the articulatory and perceptual nuances that lie behind the acoustic data on which much of their work depends.

## 4. Declining standards

### 4.1. Unskilled ‘experts’

Some years ago, I gave a paper [14] at the London-based Phonetics Teaching and Learning Conference, entitled ‘Investing in ear-training’ which included the following quotation from Ladefoged [15]: ... *When Daniel Jones [...] was setting out on a fieldwork trip, a reporter asked him, 'Professor Jones, what instruments are you taking with you?' He pointed to his ears and said 'Only these.' [...] There is no doubt that the ultimate authority in all phonetic questions is the human ear...*

This reinforced my point then and it reinforces it now: in spite of everything, general phonetic training remains the foundation, regardless of the focus, of all applications. Your ears are still your most important asset – teacher, scientist, technologist or technician, you still need to know that what the machines are telling you matches what people hear.

My experience today as an examiner for the IPA, however, reveals not only continued growth in the numbers of individuals who have not received this all-important practical training, but also a growing misunderstanding about what is meant by the term ‘phonetics’. Possibly misled by the fact that the only surviving version of the Certificate is the English one, there seems to be a growing belief that English phonetics means general phonetics – there is no more to phonetics than the phonetic description of a language. Such individuals have encountered this one application of phonetics but have little or no experience of the body of theory behind it. Now,

even though the subject was not on the degree curriculum in the late 1800s and early 1900s, I do not believe that any of those founding members of the IPA would have subscribed to this view.

As Examination Secretary, I recently received an enquiry asking if any other examination is held by the IPA that deals with phonetics of the sounds of all the world's languages, rather than just with English. As the online syllabus makes clear, this question rather misses the point – the so-called “English” Certificate is firmly founded on a thorough acquaintance with the phonetics of the sounds of the world's languages. Without this wider knowledge, you cannot discuss its application to the description of an individual language in any meaningful way (and you cannot expect to pass the examination!).

#### 4.2. Firsts and fails

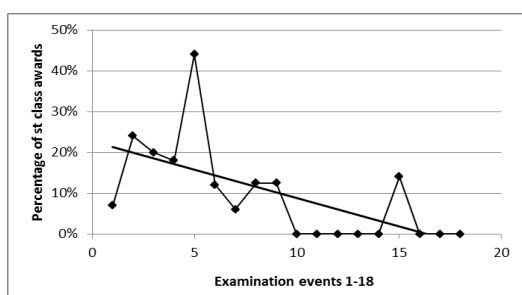


Figure 3: Scatter plot with linear trend line showing decline in 1sts across 18 recent examinations.

This anecdotal evidence of misunderstanding is corroborated by trends seen in recent Certificate examination results which, across the last decade, show a steady decline in first class awards (Figure 3) and a marked increase in failures (Figure 4). This is very worrying with regard to standards and the future.

The descending trend line in Figure 3 shows that first class awards, which were expected routinely ten years ago, now occur much less frequently. Indeed, in many examination sessions, no first class awards were made at all. Likewise, the rising trend line in Figure 4 shows the number of failures is increasing.

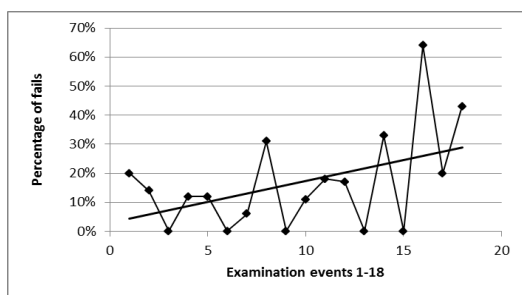


Figure 4: Scatter plot with linear trend line showing increase in fails across 18 recent examinations.

#### 4.3. Some facts behind the grades

The *Certificate* examination includes a number of practical exercises. There is, for example, a dictation testing recognition and transcription of any sound represented in the international phonetic alphabet. Candidates are told, before the dictation begins, that all the vowels are Cardinal Vowels. In spite of this advice, it is not uncommon to find candidates who transcribe some or even all the vowels using English phonemic vowel symbols. For example, in response to a dictated nonsense word such as [flɪŋœçɛɹ], using the vowels pCV1 i, sCV3 œ, and pCV3 ɛ, it is not unusual to find a candidate substituting respectively English phonemic i:, ɜ: and e.

Candidates also have an individual oral where they are asked to recognize and produce sounds. The candidates I meet are sitting the examination in the phonetics of English and, at almost every examination over recent years, there has been at least one candidate who tells me that he or she doesn't do “all this other stuff” because he or she is “only concerned with English”.

In another component of the examination, the written theory paper, candidates may be asked to define and illustrate terminology – aspiration, for example. Aspiration, as we know, is an impressionistic term often used to refer to the h-like sound occurring at the beginning of a vowel when the vocal folds are held open. We record this impression in our transcription as a raised, superscript-h, [ʰ] (itself a shorthand for any voiceless vowel sound). This intentional effect is heard in many languages and can occur after any voiceless obstruent. English chooses to do this after voiceless plosives **p**, **t**, **k**, especially in initial position in stressed syllables, *pear/pair* p<sup>h</sup>ɛ:, *tear* t<sup>h</sup>ɛ:, *care* k<sup>h</sup>ɛ:, for example. This does not occur when the plosives occur in second position in an s+C cluster (as in *spare* spɛ:, *stair/stare* stɛ:, *scare* skɛ:, with effectively zero VOT), nor when the plosive is immediately followed by an approximant consonant, rather than a vowel (*plight* pl̥aɪt, *trite* t̥ɹaɪt, *quite* kw̥aɪt, where the longer VOT devoices the approximants, creating corresponding voiceless fricatives). In spoken Modern British English (MBE) aspiration is a unique feature of a solitary, syllable initial, voiceless plosive when followed immediately by a vowel. An adequate answer would explain this, provide voicing diagrams to illustrate the action of the vocal folds, demonstrating the period of time that occurs before the vocal folds come together and start to vibrate for normal voice – the Voice Onset Time (VOT) – and it would give a number of properly transcribed examples (much as I have done here). A first class answer would also take into account how all this compares with at least one or two other

world languages (Korean, for example, with aspirated fricatives as well as plosives and also different degrees or lengths of aspiration/VOT, or French, where there is no aspiration at all). Instead, examination candidates are increasingly likely to provide two or three lines of answer rather than two or three pages, writing things such as aspiration is “the air bursting out after the release of a plosive” (not true), a “puff of air added after sounds like **p t k**” (again not strictly true), and they rarely if ever compare the effect of different lengths of VOT in the different phonetic environments. Use is made less and less often of appropriate supporting diagrams and it is rare indeed to find a decent number of properly transcribed (and, where appropriate, glossed) examples. Some of this is a function of practice and experience (the self-taught candidate has not had the benefit of corrections to practice-essays provided by teachers), but some is a straightforward lack of knowledge, suggesting the candidate knows little more than what language learners are told in their language textbook – that you need to copy English native speakers who produce an h-like sound immediately after **p, t, k** before going on with the ‘next sound’ (following vowel would be preferable, of course).

Unfortunately, an increasing number of examination candidates in every session are self-taught. This can be viable as far as learning the theory is concerned (although even here, candidates would still benefit from guidance on how to write phonetics essays and present transcriptions, etc.), but it is only the exceptional student who can successfully self-study the practical side of the subject. There is very little help out there to do this (Ashby [16] is probably the only recent book that attempts to use web support to replicate the ear-training experience) and very few of us have the innate talent that was obviously enjoyed by the late ‘Ian’ Catford who worked out virtually the whole of general phonetics for himself, using his discoveries and knowledge to underpin his book *A Practical Introduction to Phonetics*, (Cambridge University Press, 2nd edition, 2001).

This present paper was given in the context of Japan’s first international symposium on applied phonetics, but at the rate things are going, the only thing left to apply in a hundred years’ time will be hearsay! There will be no trained phoneticians in the traditional sense to train the people who need to apply this knowledge.

I will conclude, then, by considering what general phonetics is through summarizing the IPA Certificate examination syllabus itself. All illustrations come from the September 2015 materials.

## 5. The IPA Certificate examination

### 5.1. What it says on the webpage

The examination webpage [1] begins with the syllabus, explaining that the examination is in three parts – written theory paper, dictation paper, and individual oral. A brief look at this syllabus demonstrates the centrality of general phonetics in this *Certificate of Proficiency*.

As we have seen, general phonetics is a mix of theory and practice. In the mark scheme, the bulk of the marks (60%, or 120 out of 200) are awarded for practical skills – hearing, recognizing, describing, transcribing, and producing speech sounds. It should also be noted that because the award offered today is the version of the Certificate that was originally designed with teachers of English in mind, the language of the examination and the language-specific focus of the theory, is English. In the past, the French and German examinations were conducted in French and German respectively.

### 5.2. The written theory paper

The written theory paper, consisting of four equally weighted questions contributes a maximum of 80 marks to the total.

The rest of the family? They’re fine, thanks. Kiffy, Tim and the girls are in Crete at the moment. Just for a week. It’s one of those all-found breaks. A two bed apartment in a complex with plenty to occupy teenagers as well as distractions for adults. They won a competition with a scratch card a couple of years ago, and they ended up with I forget how many free holidays for four! Incredibly lucky. The only thing they have to pay is the flights. They all went to Spain in 2014. She’s sent me a video. It’s even got two balconies with amazing views and bigger living space than they’ve got at home. And... glorious sun! We’ve just got back from Talacharn in cold, wet Wales. I’d love a bit of sun!

Figure 5: Typical Question 1.

Question 1 is more practically oriented, being a phonemic transcription prompted by a written passage of a language (here, English). We could argue that even this is a practical skill, thus increasing the contribution of marks made by such skills to 140 out of 200 (or 70%). However, the ability to write a phonemic transcription is also evidence of an understanding on the part of the candidate of phonemics and of the phonetics-phonology interface. It is expected that the candidate can handle sentence stress (the rhythm of the language in question) and that (s)he will include evidence demonstrating awareness of the processes



of connected speech (assimilation, elision, coalescence, liaison and – in the case of a language such as English – weak forms). In the text in Figure 5, there are plenty of opportunities for doing this, including elision plus assimilation in 'ɔ:l faom breiks || and r-liaison ər m... Candidates with regional accents, who habitually transcribe using that accent (American, Australian, Scottish English speakers, for example) are invited to make a statement of accent and transcribe their own accent if they wish. Otherwise, examiners will expect to see the codified norm, in this case Modern Received Pronunciation (MRP) (sometimes now also called Non-regional Pronunciation (NRP)). The vast majority of candidates, including all non-native speakers, answer this question using MRP/NRP.

Texts are short (120-150 words) and include challenges, such as the need here to come up with a suitable pronunciation of Talacharn. And candidates also need to remember at all times that the text is a prompt for actual speech (write tu:'θauznd ən fə:'ti:n ||, for example, and don't simply copy the digits 2014!). On the exam page of the new IPA website [1] (launched in 2015), the advice for question 1, 'Writing a phonemic transcription', outlines what is expected in this answer, what constitutes good practice in the presentation of a transcription, how to make a statement of accent, and so forth. It also provides a couple of annotated examples.

Focus then shifts to phonetic theory. Answers to the three essay questions are such that examples given will more often than not involve a narrow phonetic representation (in square brackets and with diacritics, as opposed to the phonemic or broad phonetic transcription that is the focus of question 1). Candidates will need to be adept at the application of diacritics to illustrate the features of the sounds or concepts they are describing.

Question 2 is always an articulatory description and a recent innovation here is to provide a broad transcription of the word or phrase as a starting point, for example: *Describe in detail, with appropriate diagrams, the movements made by the organs of speech in pronouncing the word presumed (citation form: /pri'zju:md/)*. To write a good description, candidates need not only a firm grasp of general phonetics, but they also need to be fully aware both of the habits of English speakers (for example, is an elision or assimilation possible, might t-glottalling occur, etc.) and the phonetic features characterizing English speech (VOT effects, final obstruent devoicing, nasalization of sonorants, etc.). For presumed, a detailed narrow transcription such as [p<sup>h</sup>ɪ<sup>h</sup>ɪ<sup>h</sup>zj<sup>w</sup>ʊ̃m<sup>d</sup>] might be expected.

It is routine practice for articulatory descriptions to begin with a very detailed narrow transcription of the utterance, like the one just given, which is used to head up the segment columns in a simple parametric diagram. This captures the movements of the vocal folds and velum through the course of the utterance and is a visual summary of the narrative that will follow. Again, to help the growing number of candidates who are self-taught or who have not had the benefit of traditional phonetic training, the IPA exam webpage offers detailed advice on "Writing an articulatory description". As well as providing an annotated example of an articulatory description of the production of an utterance, this document also talks about the style of the narrative and the diagrams to be included. An understanding of coarticulation is central here.

3. EITHER Explain and illustrate, with examples and diagrams, each of the following: **aspiration, nasalization, velarization, glottalization.**

OR Describe and discuss the factors affecting vowel duration in English.

4. EITHER The old song title *I've only got eyes for you* is ambiguous. Describe how intonation can be used to disambiguate this and how, in general, it can be used to change the meaning of the phrase. Ensure that you take into account the roles of **tonality, tonicity, and tone.**

OR It is sometimes said that the **intonational phrase** (IP) is to speech what the sentence is to writing. How true is this? And what is the purpose of the IP?

Figure 7: Typical Questions 3 and 4.

Finally, questions 3 and 4 are both traditional, essay-style questions focusing on terminology, allophonic variation (in this case, of English), and characteristics of connected speech (including processes, stress, rhythm and intonation). These questions offer candidates choices, each one being framed in an either/or format, as for example, in Figure 7.

### 5.3. The dictation paper

The dictation paper consists of two exercises: the broad transcription of English from a spoken text (see Figure 8) and phonetic transcription of nonsense words of varying lengths (or items from a language unknown to the candidates). To succeed here, candidates need not only to be able to take down English in (broad) transcription from a spoken text, but also to be familiar with the whole of the IPA chart in order to take down dictation of the non-English materials. This test reflects the real life

situation of the phonetically trained language teacher, therapist, forensic phonetician, etc., all of whom need to be able to make an accurate record of what they hear. The following are typical examples of nonsense words: 1. [nbedogəzɛŋ] (containing 10 items), 2. [flɪmjavɪf̃] (8), 3. [p̃f̃ɔ̃t̃ɔ̃q̃] (5), 4. [maɪçɛɣoʔ] (7), 5. [rəzœçɛɲ] (7), 6. [g̃!uʃɪru] (6).

1	/ði 'əʊld ed 'wɔ:dʒən træn 'spɔ:tə 'brɪdʒɪz  ər ə 'meɪzɪŋ
2	ðəz əʊni 'sɪks lef 'wɜ:kɪŋ wɜ:l 'wɑ:d
3	'wi:v gɒʔ 'nju:pɔ:t əm 'mɪdlzbrə    ðen 'wɒrɪŋtən
	'ni:dn̩ restə'reɪʃən
4	jukŋ 'klaɪm ðə 'təər əv ðə 'wʌn ɪn saʊθ 'weɪəlz   əm
	'wɔ:k əʊvə ðə 'tɒp
5	ɪts ə 'tʊərɪst ə'trækʃən    ɔ: dʒʌs rɪ'læks
6	ən 'raɪd ɪn ðə 'bju:tɪfl 'gɒndələ    ðə trə'dɪʃnəl 'tʃɔɪs
7	ʌp 'nɔ:θ   ðə 'ləʊklz kɔ:l ðə 'brɪdʒ ðə 'træni
8	ɪt 'əʊpənd ɪn 'nɑ:ti:n i 'levən    ən tə'deɪ
9	ɪts 'ɔ:səʊ ə 'venju: frɪk 'stri:m 'spɔ:ts
10	fər ə 'fi:   jukən 'æbseɪl   ɔ:r i:vəm 'bʌndʒɪ
	'dʒʌmp    /

Figure 8: Typical English dictation text.

If we think about the foreign language classroom, teachers need to be able to note down (or read from transcription) the languages in the room (the target language, but also the mother tongue(s) represented there), as well as being able to recognize and keep a note of all the production errors made by the learners as they speak. Nonsense words (and substitutions in the oral below) emulate this.

Knowledge of the Cardinal Vowels and the consonants of the international phonetic alphabet is, of course, the general phonetic underpinning here. The alphabet is where the phonemic transcription system of any language derives from, and is the tool for making hard copies of ephemeral sounds. In neither case can you have the one without the other. The IPA website offers samples and advice for both exercises.

#### 5.4. The individual oral

Finally, each candidate has a short oral examination with two examiners. Again, the specific language focused on in the examination receives attention, this time with a reading passage (e.g. Figure 9) and with an intonation question, but there is also plenty of general phonetic skill required as well.

The oral begins with the candidate reading a short (English) text written in broad, transcription using a sans-serif font). 15 minutes are allowed for preparation and practice. Examiners look for fluency and accuracy and will also ask a short theory question based on the reading they have heard. Reading then continues, sight-reading half a dozen non-English items such as: 1. [ʒ], 2. [ø], 3. [ɛɔ], 4. [ɑɑ], 5. [ɑmɑ], 6. [ɑk̃ɑ].

Line	
1	/ wɪə 'prɪti əb'ses wɪð 'prɒpəti 'praɪsɪz ɪn 'ðɪs
2	ʌntri    bəʔ wen ə 'stju:diəʊ 'flæt   ɪn sʌm əv ʌndnɪz
3	'smɑ:tə'pəʊskəʊdʒ   kən kɒst əz 'mʌtʃ əz ə 'sɪks
4	bedrʊm 'hɑʊs ɪm 'bɑ:nzli   ɪʔ kəm bi 'trɪki tə 'ges ɪts
5	'mɑ:kɪʔ 'vælju:    'θrəʊ ɪntə ðə 'mɪks   səm 'wɪəd əm
6	wʌndəfl 'kɒntens twi 'vælju:ɪt   ən ju hæv ðɪs 'nju:
7	'ʃəʊ   kɔ:l 'ges ðɪs 'hɑʊs    'evri 'deɪ frə 'wi:k
8	ə'prentɪs rʌnər 'ʌp   sɑ:'i:rə 'kɑ:n   ʃepədʒ 'pɛ:z əv
9	'ʌpbi:t   ə'pɪnjənɪtɪd   bət 'həʊpəli 'nɒlɪdʒəbl
10	'kʌplz   ərəʊn 'θri: 'ju: keɪ 'həʊmz    ðeɪ kəm'pi:t   tə
11	ges ði 'əʊvəɔ:l 'vælju:   ɪŋ 'klu:dn̩ ðə 'kɒntents   fər
12	ə 'tʃɑ:nts tə wɪn ə 'kæʃ 'praɪz    ðə prə'dju:səz rekən
13	'ðɪs kɒb bi ə'dɪktrɪv 'vju:ɪŋ    /

Figure 9: Typical English reading passage.

The general phonetic focus continues with an exercise called substitutions. Candidates are told a word which will act as a carrier frame and the examiner then substitutes different values for an identified segment, often the intervocalic consonant. Examiners take one word each. In the case of the following examples, the intervocalic consonant is replaced with a number of different sounds: [t̃], [r], [k̃], and [s̃] for [ʃ] in bishop; and [w̃], [g̃], [ɹ], and [dʒ] for [l] in hollow. Candidates are asked to identify each substitution by giving its unique Voice-Place-Manner label.

The oral concludes with a couple of tasks based on tone and intonation. First comes more reading. The candidate is asked to sight-read four short utterances marked up with a nucleus and nuclear tone (1. leave me a<sub>1</sub>lone ||, 2. leave me a<sub>1</sub>lone ||, 3. leave me alone ||, 4. leave me alone ||, for example). Then finally, the candidate is given a short English utterance, e.g. *Maria was invited to the wedding* ||, and asked to produce it using a suitable intonation tune and afterwards to describe the tune they have used. They will be asked to produce the utterance twice in the same way before they begin the description. Once they have done this, an examiner will take the same utterance and produce it using a different tune. The candidate will conclude by describing the examiner's tune. For example, the examiner might say *Ma<sub>1</sub>ria <sup>v</sup>was <sub>1</sub>invited to the <sub>1</sub>wedding* ||, producing the utterance as one intonational phrase with stresses on the second syllable of *Maria*, was, the second syllable of *invited*, and the first syllable of *wedding*. The nucleus is on *was* with a fall-rise nuclear tone, the pitch falling from high on *was* to low on the first syllable of *invited* and remaining low until the final stress on the first syllable of *wedding* which is where the rise begins. There is an onset, with a falling head beginning on the second syllable of *Maria* and a low, unmarked prehead *Ma-*.

## 6. Conclusions

What we have seen is that allowing for technological advances and the enhanced acoustic knowledge this has both enabled and requires, general phonetics today is still substantially the same as it was a century ago. More importantly, what we teach remains relatively unchanged. Changes in the classroom experience lie predominantly in the very marked reduction of practical training and also some limitation of theoretical content in many courses.

In conclusion, then, we have to ask some questions. Perhaps the most important of these is: is the sound foundation previously provided in general phonetics courses still needed? And if it is, are we teaching it appropriately?

Earlier consideration of the ever widening range of applications of the subject, especially technological applications, suggests that general phonetics is still very much needed. Today, however, what we teach in the classroom is still heavily slanted towards the pedagogical applications that played such an important role in its inception as an academic discipline. What we teach and how we teach it is lagging behind what is needed – even language teachers can now benefit from acoustics (in order to utilize the developments in pronunciation and language teaching technologies).

Traditional general phonetics still has an audience. There are still real teachers instructing real learners of real foreign languages, still real therapists and doctors helping real clients and patients with real speech disorders, still real instructors training real actors and broadcasters, real interpreters, real operators in enquiry centres. The world is full of real, live speech. The technological advances that I mentioned earlier as being a possible threat have not and cannot take over completely. In human communication, *human* is still the operative word.

Undoubtedly, therefore, there is still a place for general phonetics, for both the theory and the practical skills. It is time to modernize the way we look at it, refocus our approach. We must make use of technologies that can assist in improving our skills, developing and expanding online training resources, for example, that can eventually help to reduce the cost of delivering general phonetics courses. And we must tailor the theory to suit the needs – it may be that one course no longer necessarily fits all!

Today, general phonetics has an increasingly central and important contribution to make on both sides of the humanities/science divide. Many older course minimized acoustics or even overlooked it completely. This is no longer appropriate. Everyone needs to be able to ‘read’ the acoustic images

available at the touch of a button on our own computers, laptops, tablets and even mobile phones.

General phonetics must move with the times. It needs to be re-established, centrally, in the regular linguistics curriculum. We must campaign for this and we must determine the best way to do it with the funding and resources at our disposal. We need to decide what it is worth, what we can afford, and structure our courses accordingly.

The first step is to re-convince the wider world of its importance, contribution and value, giving future generations the sound foundation they deserve.

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