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記念講演 (Lecture)

Interacting with Phonetics—A Synopsis

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21世紀の音声学教育

Key words: International Phonetic Association (IPA), IPA *Certificate*, phonetics MOOCs, ear-training, mouth-training, general phonetics, speech technology

1. Introduction and History

In the late 1800s a group of language teachers in Europe founded a phonetics association. Under the presidency of Paul Passy, this had a succession of names, all referring overtly to teaching:

- The Phonetic Association of Teachers of English
- The Phonetic Teachers Association
- The Association of Teachers of Living Languages

In 1889, under the second president Wilhelm Viëtor, it was renamed again. All reference to pedagogy was dropped—the International Phonetic Association was open not only to language teachers, but also to specialists from any field with an interest in speech. Viëtor showed great foresight—phonetics was more than just a service discipline for language teaching. The new name reflected that.

All this predated the appearance of phonetics as a university subject by over half a century. It also gave rise to the IPA *Certificate* examination which accredited the holder's phonetic know-how long before phonetics degrees came into being.

2. Changing Priorities in an Expanding Field

In the late 1940s, David Abercrombie established the first university course in phonetics at the University of Edinburgh (Ladefoged 1997). Phonetics was

being taught in other centres, but not at degree level. Post-graduate degree courses were gradually established more widely and phonetics enjoyed growing popularity until around the 1980s.

Then, several things happened:

- The “Chomskyan revolution” put syntax at the centre of linguistics
- The needs of communication engineers began to overtake those of language teachers
- Technology entered the classroom
- The global economy faltered

Each impacted on phonetics. Loss of its centrality in linguistic theory directed attention away from the spoken word and the new market—communications and technology—needed a new phonetics syllabus. Simultaneously, technology in the classroom revolutionized teaching but the financial crisis meant less money for education.

Traditional phonetics (lecture+small group practicals) is costly to deliver (Ashby 2016), but cutting it out of the curriculum is not the answer. And although there is a huge market today in communications and technology, the original IPA syllabus still remains largely unchanged. If the subject is to flourish, we need to consider what phonetics is worth, decide what we can afford, then explore the way forward...

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3. Phonetics Today

In 1916, the single biggest market for phonetics was language teaching. In 2016, the market lies in new areas: *text-to-speech, voice dictation systems, interactive voice response systems, speaker verification systems, even speech-to-speech translation systems, voice conversion, audio indexing and concept-to-speech systems...* (Huckvale 2013). The 20th century syllabus is lagging behind and the world is looking to technology to replace phoneticians!

Technology, however, can never substitute 100% for the phonetically trained human ear. People use machines for things they find tedious or difficult—analysing speech, for example. But human designers, programmers, operators and interpreters are essential. Ladefoged told a story about Daniel Jones which still makes a point today—when Jones was setting out on a fieldwork trip, he was interviewed by a journalist: ‘*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* (Ladefoged 2003). Traditional general phonetics trains our ears to make judgements about sounds. It gives us theory, ear-training, and mouth-training which all have a place in today’s world of speech technology.

Many degree courses are closing, however. Training opportunities and qualifications are being lost. It is likely therefore that the IPA *Certificate* could be as valuable a qualification today as it was a century ago, meeting the need for accreditation of phonetic skills and knowledge. It is time to ask if the award is still fit for purpose. The syllabus (see <https://www.internationalphoneticassociation.org/content/ipa-exam>) covers both theoretical and practical phonetics, stating candidates should have knowledge of [...] *the analysis and classification of speech sounds generally and of the sounds of English in particular; sound grouping, accentual features, quantity, juncture, assimilation, in-*

tonation; questions may also be asked on the teaching of English pronunciation and that candidates should be prepared to recognise any sounds occurring in the IPA chart.

There are a couple of issues here. First: *questions may also be asked on the teaching of English pronunciation.* Many of today’s candidates are not language teachers. It would therefore be appropriate for the IPA to consider removing this requirement from the syllabus. Second: there is no mention of acoustic phonetics. Today, all candidates can benefit from acquaintance with the rudiments of this. Acoustic phonetics features in every modern general phonetics textbook and is the focus of many applications of phonetics—even pronunciation teaching—and should be included in the syllabus.

The syllabus and award have for many years functioned as a bench mark for the discipline. The qualification is internationally recognized and even required for some positions (BBC pronunciation unit, etc.). Today, however, candidate numbers are down and there is also evidence that standards of achievement are deteriorating.

Certificate results are classified: 1st class (80% and above), 2nd class, 3rd class and Fail (49% and below). As Ashby (2016) demonstrates, in recent years we have seen fewer 1st class awards and more failures. It is my belief that the reduction in formal training opportunities is responsible for both these things. More and more candidates are self-taught. Presenting for examination with no practical training, they are ill-equipped to pass.

Given the reduction in courses, the *Certificate* still meets a need for accredited phonetic knowledge and skills. Problems now lie in ensuring the syllabus is fit for purpose and in devising ways to use the 21st century learning environment to deliver this.

4. The Way Forward

With the increasing numbers of new applications

of phonetics, it is clear that the future of the discipline should be secure. Technology itself can contribute to that security. Many training centres are now using technology creatively to make the subject more openly accessible through open access resources, MOOCs, YouTube, etc. Unfortunately, in the case of forums such as YouTube, control of standards is impossible. There are plenty of really dreadful sites and the web can be a minefield for the would-be student. In a sense, you need to *know* phonetics before you can risk studying from these sites! Theory is less of a problem than the practical side of the discipline—but ear-training is crucial and separates ‘those who **know** phonetics’ from ‘those who merely know **about** phonetics’ (Ashby and Ashby 2013). It is practical training we need to focus on.

Finally, we need to consider the question: does one syllabus still suit all? It was undoubtedly the case, a century ago—a single syllabus was enough to introduce phonetics to anyone who wanted to know (mainly language teachers). Today, speech technologists still need to understand the basics of articulatory phonetics, but their real need in terms of tools for the workplace is acoustics. In today’s interactive classrooms, language teachers can also benefit from this. The tick-list identifying a phonetician today includes:

- Trained ears & the ability to read transcribed data
- Knowledge of articulatory phonetics & transcription
- Basic spectrography skills

If today’s courses properly embrace technology and the 21st century learning environment—one syllabus can still suit all!

I would like to see the IPA take a lead in promoting tomorrow’s phonetics, cementing acoustic phonetics into the *Certificate* syllabus and developing pages on

the website addressing the needs of users of phonetics (links to accurate/approved online resources, for example, and provision of further aids to learning). The future of phonetics must embrace technology, developing and promoting accessible online learning for both theory and practical skills, and keeping up with learning trends to attract and hold the younger generations—game-based learning, for example, seems ideally suited to this subject.

We are at the same time gate-keepers and revolutionaries! We must promote the discipline, re-awakening interest in the wider world and securing its position by demonstrating its continued value to society. Today, the computer is an integral part of learning phonetics. With the help of technology, we can ensure that future generations will still have access to the benefits we ourselves have enjoyed.

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