
Proceedings of The XIVth International Congress of Phonetic Sciences



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Association, European Speech Communication Association, International Phonetic Association,
Linguistic Society of America

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PAST CONGRESSES

Amsterdam	1932
London	1935
Gent	1938
Helsinki	1961
Münster	1964
Prague	1967
Montréal	1971
Leeds	1975
Copenhagen	1979
Utrecht	1983
Tallinn	1987
Aix-en-Provence	1991
Stockholm	1995

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NOTE FROM THE CHAIR

The 1999 International Congress of Phonetic Sciences is the 14th of this series that started in 1932. Jacques van Ginnekin was the organizer and guiding spirit of the first ICPHS, organized in Amsterdam. He explicitly advocated an interdisciplinary meeting devoted to the exchange of research results on speech from varied disciplines: linguistics, the clinic, psychology, language teaching, etc. Against all odds – given the inevitable trend towards increasing specialization – the interdisciplinary character of this meeting has survived even after 67 years. The 14th ICPHS features papers from the original group of disciplines as well as from speech technology, perhaps the most rapidly developing field within the phonetic sciences. I believe all practitioners of the phonetic sciences are united in trying to understand how speech works. Certainly many facts and principles on the workings of speech have been accumulated over the decades, but there are still many fundamental questions left unanswered and even unexplored. Answers or even hints to possible answers can come from any of the disciplines within the phonetic sciences. Whatever solves a problem in psychology can solve problems within linguistics, whatever solutions work in speech technology may work in the clinic, etc.

I encourage participants of the congress and readers of the proceedings to devote some time to sampling the research reports from areas outside their own chosen discipline. Good ideas can come from any source and in particular they come from a melding of ideas from diverse sources and viewpoints.

I personally believe that the phonetic sciences may be on the verge of some dramatic scientific breakthroughs. Certainly the pace of research on spoken language has increased dramatically within the past few decades. The practical applications of phonetic research via speech technology has been one of the major forces in this acceleration. The accessibility and affordability of research tools due to the ‘digital revolution’ is another factor in this development. Several unifying theories on how speech works have been proposed: the motor theory of speech perception, the direct realist theory, action theory, quantal theory, the theory of adaptive dispersion, etc. These are currently being evaluated and debated and will, no doubt, lead to a new synthesis of our understanding of speech. Perhaps a hint of these breakthroughs may be found in papers presented at this congress. I urge the proceedings reader to find these leads!

The 14th ICPHS is the first to be held in the United States. Supposedly the 4th ICPHS was scheduled to take place in New York in 1941 but was canceled due to complications created by World War II. When the series was re-started in 1964 the host city was Helsinki. With the exception of the 7th ICPHS in Montréal in 1971, all previous congresses took place in Europe. The United States phonetic sciences community is proud to host this congress, the last in this century.

John J. Ohala
Chair

NOTE FROM THE EDITORS

Dear colleagues,

We hope these proceedings will be a useful resource for your future research. The papers in these volumes cover many areas in the current field of the phonetic sciences.

Each volume begins with some general information about the congress which is followed by a table of contents for all papers in each volume of the proceedings. After the papers is an index of authors, advertisements, and a general program schedule for ICPHS99.

The scientific contributions presented at the congress were in four forms: plenaries, symposia, poster sessions, and oral presentations.

The symposia were organized by experts in topics considered of general interest to the congress attendees. The leaders were accountable for inviting other specialists to participate in their symposia. All symposium contributors submitted four page papers for inclusion in the proceedings.

For the poster and oral sessions 810 abstracts were submitted. 711 (88%) were accepted. Of these 95 withdrew or were removed from the program because their papers were not received. Some accepted authors were also asked to join symposia. Therefore, including the symposium and plenary papers, as well as 6 papers which are not to be presented at the congress but are to be included in the proceedings, there are 642 papers in these proceedings. With the exception of the five plenary contributions of a maximum of 8 pages each, the papers in these volumes are at most 4 pages long.

There is also a print version of these proceedings. Some authors submitted multiple versions of their papers after the paper submission deadline. Because of this, it is occasionally the case that a paper in the print proceedings will differ from its counterpart on the CD ROM version of the proceedings. Please note that the CD ROM contains the most up-to-date version of each paper.

We are pleased to have papers presented by phoneticians from 46 countries. The following page gives a list of the nations represented by the first authors or their contact person if the first author's residence was not given to us. Many papers have authors from different countries, however only the nations of the first authors are given below.

We hope enjoy these proceedings and find them to be worth the efforts of their editors and contributors.

The editors

STATISTICS FOR THE ICPHS99 PROCEEDINGS

<i>Sessions</i>		<i>Contributions</i>
02	Plenaries	5
07	Symposia	30
49	Oral Sessions	288
08	Poster Sessions	313
	Proceedings only	6
66	Total	642

NUMBER OF CONTRIBUTIONS PER COUNTRY

This list is taken from our database and represents the first author wherever possible. On occasion we had only the address of the contact person.

147	USA	3	Denmark
80	UK	3	Hong Kong
65	France	3	India
62	Germany	3	Ireland
39	Netherlands	3	Norway
32	Sweden	2	Austria
31	Japan	2	Czech Republic
21	Canada	2	Hungary
19	Italy	2	Northern Ireland
18	Russia	2	Portugal
13	Spain	1	Argentina
12	Finland	1	Cyprus
10	Brazil	1	Estonia
9	Belgium	1	Fiji
8	Australia	1	Iceland
6	Korea	1	Israel
6	South Africa	1	Jordan
5	Slovenia	1	Latvia
5	Taiwan	1	New Zealand
4	Croatia	1	Romania
4	Poland	1	Slovak Republic
4	People's Republic of China	1	Turkey
4	Switzerland	1	Venezuela

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- ◆ *Australian Speech Science & Technology Association*
- ◆ *European Speech Communication Association*
- ◆ *International Phonetic Association*
- ◆ *Linguistic Society of America*

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- M3INT PROSODY: INTONATION INTERACTIONS & APPLICATIONS
- M3CAL PRODUCTION: COARTICULATION I
- M3CHA SYNTHESIS I
- M3CHB PHONOLOGY I
- M3TEL SECOND LANGUAGE ACQUISITION: PERCEPTION
- M4ELD FORENSIC PHONETICS I
- M4ELD PERCEPTION I
- M4ELD INTONATION: RHYTHM I
- M4JPN SOUND CHANGE/UNIVERSALS/TYPOLOGY
- M4JPN PRODUCTION I
- M5INT INTONATION: SEGMENTAL INFLUENCES
- M5CAL PRODUCTION II
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- T1CAL ACOUSTICS & PERCEPTION OF GEMINATE CONSONANTS ACROSS LANGUAGES
- T2INT THE PHONETIC PROPERTIES OF SPONTANEOUS SPEECH
- T2CAL NOVEL IMAGING TECHNIQUES FOR SPEECH PRODUCTION RESEARCH
- T2CHA PERCEPTION OF COARTICULATED SPEECH
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- T3CAL PRODUCTION: COARTICULATION II
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- T3CHB PHONOLOGY: SYLLABLE STRUCTURE
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- T4ELD CLINICAL PHONETICS I
- T4ELD PERCEPTION II
- T4JPN INTONATION: MODELING I
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- R1CTH SPEECH TECHNOLOGY
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- R2INT THE RELATION BETWEEN SPEECH PRODUCTION & SPEECH PERCEPTION IN NATIVE & NON-NATIVE LANGUAGE LEARNING
- R2CAL THE IPA & "SOUNDS INTERESTING" (DISCUSSION)
- R2CTH PERCEPTION OF COARTICULATED SPEECH
- R3INT INTONATION: GRAMMAR & DISCOURSE II
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R3CHB FORENSIC PHONETICS II
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F3CHB PERCEPTION: SEGMENTS
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F4JPN SPEECH TECHNOLOGY: SYNTHESIS, MODELING, INSTRUMENTATION
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F5INT INTONATION:TONE II
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F5CHB PERCEPTION: VOWELS & OTHER SEGMENTS
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