#### INTRODUCTION

This issue, the 29th Annual Bulletin from our Institute, presents the results of our research projects accomplished during the period of April 1994-May 1995, and working papers are also presented. Many of the projects were related to the special group research projects supported by the following grants.

Grants-in-Aid for Scientific Research from the Ministry of Science, Culture and Education, Japan

"Research on Understanding and Generating Dialogue by Integrated Processing of Speech, Language and Concepts"

"Examination of Speech function by MEG using audio-visual matching stimuli"

"Investigation of Vocal Controllability of Speakers with Neurological and Laryngeal Disorders based on Chaos Theory"

"Neuro-theoretical analysis of brain rhythmic information in cognitive and verbal behavior"

"Development of analyzing and imaging system of three-dimensional brain functional mapping for diagnosis and treatment evaluation of language and cognitive disorders"

"Physiology and clinical study on various phonatory methods"

"Study on the variety of voice qualities and its control mechanisms during dialogue "

"Investigation of Verbal Memory by functional Magnetic Resonance "

"Standardization of Wechsler Memory Scale-Revised in Japan"

"Development of Animation Presenting System with Fundus Tachistoscope" Smoking Research Foundation

"Study on Treatments and Their Results for Voice Disorders of Smokers" Life Science Foundation

"Investigation of Higher Cognitive Functions by functional Magnetic Resonance" Human Frontier Science Program

"The Study of Partial Split Brain Patients"

Morihiro Sugishita Director

# **CONTENTS**

Introduction	i
M. Sugishita	
Contents	ii
Personnel	iii
Recent Publications	1
Progress Reports	25
Quasi-periodic Perturbations in Pathological Vocal Fold Vibration	27
Laryngeal Gestures during Air Trapping Niimi, S. and Naito, A.	35
Listener-Adaptive Adjustments in Speech Production  Evidence from Vowel Devoicing  Imaizumi, S. and Hayashi, A.	43
Infants' Responses to Speech Stimuli in the Headturn Preference Procedure Hayashi, A., Tamekawa, Y., Deguchi, T. and Kiritani, S.	49
Development of Speaker Identification in Young Children Saito, K., Asakawa, K., Shimura, Y. and Imaizumi, S.	55
Sokuon-ka of Words as a Result of Unfocussing in Fast Speech in Japanese Fujimoto, M. and Kiritani, S.	<b>5</b> 9

## PERSONNEL

# (April 1994 - March 1995)

#### **Professor Emeritus:**

Masayuki Sawashima (D.M.Sc.)

Hajime Hirose (D.M.Sc.)

Director: Morihiro Sugishita

Research Staff:

Shigeru Kiritani (D.M.Sc.) Professor of Speech Science

Seiji Niimi (D.M.Sc.) Professor of Speech Physiology

Morihiro Sugishita (D.H.Sc., D.M.Sc.) Professor of Cognitive Neuroscience

Satoshi Imaizumi (D.Eng.) Associate Professor of Speech Science

Takayama Yoshihiro (D.M.Sc.) Research Assistant (-Jan.) Lecturer (Jan-)

Kenji Itoh (D.Eng.) Research Associate

Sotaro Sekimoto (D.M.Sc.) Research Assistant

Kohichi Mori (D.M.Sc.) Research Assistant

#### Graduate Students:

Keiko Asano (M.A.)

Seiya Funatsu (M.Eng.)

Ryoko Hayashi (M.A.)

Yan Qun (M.H.Sc.)

Masanobu Kumada (M.D.)

Yoshitake Iwamoto (M.D.)

Tomoko Sakata (M.A.)

Miyoko Ishige (B.A.)

Dueri Mari Fabiola (Sept-) (M.A.)

Koichi Yoneda (B.A.)

## Special Students:

Yohko Watanabe (M.A.)

Yasuo Nakajima (-Sept) (B.A.)

Toshiko Isei (M.A.)

Keisyuku Miyamoto (M.A.)

Junichi Simada (M.D.)

Hiroya Yamaguchi (D.M.Sc.)

Mana Yamori (D.M.Sc.)

Haruhito Saida (D.M.Sc.)

Atushi Matsunaga (M.D.)

Mayumi Hirozane (M.A.)

Masako Abe (M.A.)

## Visiting Researchers:

Hartono Abdoerrachman (June-July) (M.D.)

LU Bo (D.M.Sc.)

John A. Bisazza (Ph.D)

## Technical Staff:

Hiroshi Imagawa (B.Eng.)

#### Secretaries:

Miss Kikuko Yamakoshi

Miss Mikiko Chiba (part time)

Mrs. Michiyo Tasaki (part time)

Miss Junko Tamakuni (part time)

## Cooperative Groups:

University of Tokyo, Faculty of Medicine,

Department of Otolaryngology, Voice and Speech Group.

Department of Neurosurgery.

Department of Neurology.

University of Tokyo, Faculty of Engineering.

Department of Electrical Engineering.

Kitasato University, School of Medicine,

Department of Physiology.

Department of Otolaryngology.

Waseda University,

School of Science and Engineering.

Tokyo University of Foreign Studies,

Institute for the Study of Languages and Cultures of Asia and Africa.

University of Tsukuba,

Department of Radiology.

National Rehabilitation Center for the Disabled, College.

Department of Speech and Hearing Disorders, and of Otolaryngology.

Tokyo Metropolitan Institute of Gerontology,

Department of Language and Cognition.

Tokyo Metropolitan Geriatric Hospital,

Department of Speech Pathology.

National Language Research Institute,

Center for Teaching of Japanese as a Foreign Language.

Tokyo Senbai Hospital,

Department of Otolaryngology.

Advanced Telecommunication Research Institute International

Kyoto University.

The Primate Institute.

Tokyo Gakugei University, Faculty of Education,

Department of Special Education.

Research Institute for the Education of Exceptional Children.