

Use of lip-read information in speech perception and its relation to second language proficiency

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Use of lip-read information in speech perception and its relation to second language proficiency

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実験系心理学

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Kanazawa University

Principal Investigator

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audiovisual speech perception / audiovisual integration / McGurk effect / inter-language differences / second language acquisition / lipreading

Research Abstract

The McGurk effect is an audiovisual illusion which shows that visual lip information is integrated with conflicting auditory information during speech perception, demonstrating that speech perception is not a solely auditory process in face-to-face communication, but a multimodal process. Our previous research has shown that the McGurk effect is stronger for auditory speech in foreign languages both in native speakers of Japanese and

American English, although the visual effect is weaker for the Japanese than for the Americans. The present study investigated such linguistic factors in audiovisual speech perception.

In Experiment 1, native speakers of Chinese were tested with Japanese and English stimuli. The McGurk effect was as weak as for our previously tested Japanese subjects, suggesting an audition-biased manner of processing in the Chinese subjects as well. These subjects, who lived in Japan after finishing college in China, showed a positive correlation between the time they had spent in Japan and the size of the McGurk effect.

In Experiment 2, we tested the "foreign language effect hypothesis" that the McGurk effect is stronger for auditory speech in foreign languages, by testing native speakers of Chinese and Japanese with Chinese and Japanese stimuli. The results showed that the hypothesis was true only for the Japanese subjects and that the Chinese subjects did not show any differences between the Japanese and Chinese stimuli.

Experiment 3 examined the effect of second language (Japanese) proficiency on the McGurk effect, by testing forty six native speakers of Chinese. The results suggested some evidence for such an effect, but there were extra variables such as age which should be controlled before a definite conclusion.

Research Products (14 results)

		All	Other
		All	Publications (14 results)
[Publications]	積山 薫: "マガ-ク効果の強さを規定する刺激要因" 日本音響学会聴覚研究会資料. H-96-67. 1-8 (1996)		▼
[Publications]	Sekiyama, K., Tohkura, Y., &Umeda, M.: "A few factors which affect thedegree of incorporating lip-read information into speech perception." Proceedings of 4th International Conferences on Spoken Language Processing.vol.3. 1481-1484 (1996)		▼
[Publications]	Sekiyama, K.: "Inter-language differences and L2-related change in audiovisual speech perception." Proceedings of the papers submitted to the Acoustical Society of Japan. Third Joint Meeting of the Acoustical Societies of America & Japan.959-962 (1996)		▼
[Publications]	Sekiyama, K.: "Cultural and linguistic factors in audiovisual speech processing : The McGurK effect in Chinese subjects." Perception & Psychophysics. 59. 73-80 (1997)		▼
[Publications]	積山 薫: "音声知覚における視聴覚融合をめぐって" 基礎心理学研究. 15. 122-127 (1997)		▼
[Publications]	積山 薫: "顔と声による音声知覚-視聴覚情報の相互作用-" 電子情報通信学会技術報告. HIP97-21. 83-90 (1997)		▼
[Publications]	積山 薫: "認知心理学の視点-理論と測定法" 長縄久生・椎名乾平・川崎恵里子(編)ナカニシヤ出版, 264 (1997)		▼
[Publications]	Sekiyama, K.: "Acoustic factors affecting the magnitude of the McGurk effect. (in Japanese with English abstract)" Technical Report of the Acoustical Society of Japan. H-96-67. 1-8 (1996)		▼
[Publications]	Sekiyama, K., Tohkura, Y., and Umeda, M.: "A few factors which affect the degree of incorporating lip-read information into speech perception. (in English)" Proceedings of 4th International Conference on Spoken Language Processing. 1481-1484 (1996)		▼
[Publications]	Sekiyama, K.: "Inter-language differences and L2-related change in audiovisual speech perception." Proceedings of the papers submitted to the Acoustical Society of Japan, 3rd Joint Meeting of the Acoustical Societies of America and Japan. 959-962 (1996)		▼
[Publications]	Sekiyama, K.: "Cultural and linguistic factors influencing audiovisual speech processing : The McGurk effect in Chinese subjects. (in English)" Perception & Psychophysics. 54. 73-80 (1997)		▼
[Publications]	Sekiyama, K.: "Audiovisual speech perception and its inter-language differences." Japanese Journal of Psychonomic Science. 15. 122-127 (1997)		▼
[Publications]	Sekiyama, K.: "Speech perception from face and voice : Audiovisual interaction." Technical Report of IECE (The Institute of Electronics, Information and Communication Engineers). HIP97-21. 83-90 (1997)		▼
[Publications]	Sekiyama, K.: "Integration of multimodal information. (in Japanese)" In E.Kawasaki (Ed.), Theories and methdologies of cognitive psychology. Nakanishiya : Kyoto. 113-140 (1997)		▼

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