湖南師範大學
HUNAN NORMAL UNIVERSITY

"教育的变革：多模态交际在教育、研究与学习中的应用"

多模态交际国际学术研讨会

"Disruption in Education: Multimodal Communication in Education, Research, and Learning"

ICMC2024: International Conference on Multimodal Communication

会议手册

Conference   Handbook

Hosted by

Foreign Studies College of Hunan Normal University

湖南师范大学 外国语学院
中国·长沙

December 14-15, 2024

会议议程

会议时间：2024 年 12 月 14-15 日
会议地点：湖南师范大学外国语学院 613 多功能厅

时间	会议流程	主持人
12 月 14 日		
08:30-09:00	开幕式 1. 大会合影　腾龙楼前 2. 湖南师范大学党委书记**蒋洪新**教授致辞 3. **Mark Turner** 教授致辞	蒋莉华
09:00–09:45	Disruption and Realignment in U.S. Higher Education in the New World of Work **Michael Schoop** 美国克利夫兰大都汇联盟/库亚和加学院	万光荣
09:45-10:30	Reframing Education in the Age of Copilots: Multimodal Language Capacities for an Ever-changing AI-oriented World **Tiago Torrent**　巴西茹伊斯迪福拉联邦大学	
10:30-10:40	茶歇	
10:40-11:25	The Influence of Audiovisual Cross-Modal Integration on Speech Perception and its Implications for Speech Training **陈 飞** 湖南大学	唐燕玲
11:25-12:10	Learning as an Inherently Multimodal Process: Cognitive Science of Education **Renata Geld** 克罗地亚萨格勒布大学	
午餐及午休		
13:45–14:30	Collaborating with Synthetic Agents **Mark Turner** 美国凯斯西储大学 Multimodal Learning from the Perspective of the Cognitive Load Theory in the Age of AI **Martin Woesler** 湖南师范大学	陈敏哲
14:30-15:15	Application of Large Language Models in Language Research **邓云华** 湖南师范大学	
15:15-15:25	茶歇	
15:25-16:10	Multimodal Communication in Learning, Teaching, and Research through the Cognitive Linguistic Lens: Understanding the Disruption **Mateusz-Milan Stanojević** 克罗地亚萨格勒布大学	谭晓娟
16:10-16:55	The Application of Multimodal Approaches in L2 Speech Learning in the Age of AI **杨雨箫** 湖南师范大学	张英
16:55-17:10	闭幕式 **Mark Turner** 总结发言	王羽青
12 月 15 日		
9:00-11:00	工作坊：教育变革实践经验分享交流 地点：中和楼 611 不进行直播	Mark Turner

Agenda

Date: 14-15 December 2024

Local Venue: Lecture Hall Room 613, Foreign Studies College, Hunan Normal University

Time	Session	Moderator
	December, 14	
08:30-09:00	Opening Ceremony 1. Group Photo at Tenglong Building 2. Speech by Professor **JIANG Hongxin**, Chair of the University Council 3. Speech by Professor **Mark Turner**	JIANG Lihua
09:00–09:45	Disruption and Realignment in U.S. Higher Education in the New World of Work **Michael Schoop** Talent, Greater Cleveland Partnership/ Metro Campus of Cuyahoga Community College	WAN Guangrong
09:45-10:30	Reframing Education in the Age of Copilots: Multimodal Language Capacities for an Ever-changing AI-oriented World **Tiago Torrent** Federal University of Juiz de Fora, Brazil	
10:30-10:40	Coffee/Tea Break	
10:40-11:25	The Influence of Audiovisual Cross-Modal Integration on Speech Perception and its Implications for Speech Training **CHEN Fei** Hunan University	TANG Yanling
11:25-12:10	Learning as an Inherently Multimodal Process: Cognitive Science of Education **Renata Geld** University of Zagreb, Croatia	
	Lunch/Lunch Break	
13:45–14:30	Collaborating with Synthetic Agents **Mark Turner** Case Western Reserve University, America Multimodal Learning from the Perspective of the Cognitive Load Theory in the Age of AI **Martin Woesler** Hunan Normal University	CHEN Minzhe
14:30-15:15	Application of Large Language Models in Language Research **DENG Yunhua** Hunan Normal University	
15:15-15:25	Coffee/Tea Break	
15:25-16:10	Multimodal Communication in Learning, Teaching, and Research through the Cognitive Linguistic Lens: Understanding the Disruption **Mateusz-Milan Stanojević** University of Zagreb, Croatia	TAN Xiaojuan
16:10-16:55	The Application of Multimodal Approaches in L2 Speech Learning in the Age of AI **YANG Yuxiao** Hunan Normal University	ZHANG Ying
16:55-17:10	**Closing Ceremony** Concluding Remarks by Professor **Mark Turner**	WANG Yuqing
	December, 15	

Notes: 1. 45 minutes for each plenary talk, including 10 minutes of Q & A and break.

2. Conference website: https://cognitivescience.hunnu.edu.cn/ICMC2024/home/index.html

3. Live streaming: http://live.bilibili.com/23288623

4. Zoom Meeting ID: 942 7593 8736; Password: 198826

会议主旨报告人及报告摘要
Keynote Speakers and the Abstracts

Mark Turner

Institute Professor and Professor of Cognitive Science, Case Western Reserve University; Co-director, the International Distributed Little Red Hen Lab.

Speech title: Collaborating with Synthetic Agents

Abstract: Throughout Education, Research, and Learning, we now collaborate and communicate with synthetic agents－AI, robots, computational systems. These synthetic agents can use full multimodal communication. Communication depends on common ground. How can we establish common ground with synthetic agents? How can synthetic agents be used as part of teams, in distributed fashion, across networks? How can we trust

synthetic agents? What is the future of multimodal communication in a university filled with synthetic agents?

邓云华 DENG Yunhua

Professor and head of the linguistics faculty, Department of English, Foreign Studies College, Hunan Normal University. Primary research areas are cognitive linguistics, computational linguistics, and cross-linguistic comparisons.

Speech Title: Application of Large Language Models in Language Research

Abstract: In the current field of language research, we are facing some unprecedented challenges: How to conduct interdisciplinary research? How to apply large language models to language research? Based on the BERTopic automatic extraction model, our study excavated the thematic focus of different readers towards it, conducted emotional attitude analysis to explore its overseas communication and acceptance. And another study improved the automatic recognition rate of the entities and semantic relations of "You+NP" construction. The application research based on the Large Language Model has not

only promoted the understanding of the "You+NP" constructions' semantic features and their production mechanisms, but also highlighted the significant progress of the language research paradigm transformation towards intelligence in the era of digital intelligence.
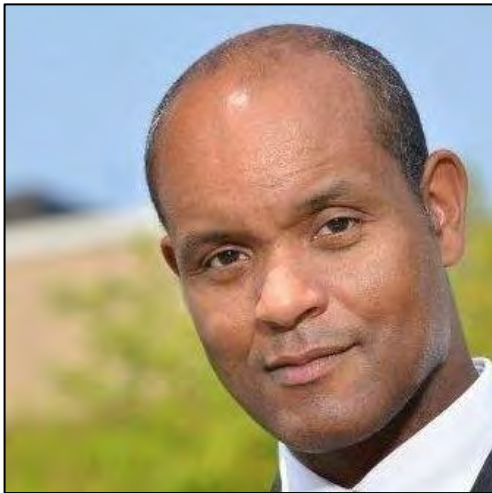
Michael Schoop

Senior Vice-President, Talent, Greater Cleveland Partnership. Previously Vice-President, Cuyahoga Community College, President of the Metro Campus of Cuyahoga Community College.

Speech Title: Disruption and Realignment in U.S. Higher Education in the New World of Work

Abstract: Demographics and economics are remaking U.S. higher education. Declining enrollment, rising costs, and questions about the relevance of traditional degrees are reshaping the landscape. At the same time, the U.S. economy is evolving rapidly, with businesses facing a growing skills gap and labor shortages, particularly in critical sectors like technology, healthcare, and manufacturing. The key question: how can higher

education and business work together to bridge this gap? Higher order skills are essential to the growth of modern economies—especially in the age of synthetic intelligence. As the world of work is transformed, the workforce must constantly reskill and upskill. How can universities provide flexible, industry-aligned programs to support this ongoing learning? What role should businesses play in fostering continuous education for their employees? This talk explores the future of U.S. higher education and its essential integration with business, offering insights into the strategies, partnerships, and policies needed to navigate this disruption. The challenge: how do we ensure that education keeps pace with economic demands, and what does this mean for the future of the U.S. workforce?

Martin Woesler

"Xiaoxiang Scholar" Distinguished Professor and Director of the Jean Monnet Research Centre of Excellence on the Digitalization of University Teaching, Foreign Studies College, Hunan Normal University. Research fields include use of ai in foreign language acquisition, cognitive load theory, appropriateness theory,

comparison of ai/human teachers, field work to identify the role of different modals/senses, e.g. by field work with learners with disabilities

Speech Title: Application of the Cognitive Load Theory on Multimodal Foreign Language Acquisition with and without AI

Abstract: This talk introduces some theoretical background of ongoing field studies on AI and human teaching at European and Chinese universities, including virtual learning environments. According to dual-coding theory, humans process visual and auditory information separately (at the initial stage) in visual channel (eyes) and auditory channel (ears) and integrate the resources subsequently. If working memory resources can be allocated to these two channels, the working memory load can be spread or shared, resulting in lower cognitive load (Sweller 1988) experienced by learners. In general, a more holistic learning triggering several senses like video, audio, touch, smell, and senses for space, time etc. and working memory resources can be allocated to several channels, the working memory can be spread, resulting in lower cognitive load experienced by learners. Not only the cognitive load is lower, also the remembering and associating of the different sensual/modal remembrances into the big picture of the stuff learned ("integration") goes far easier if

several different impressions contribute. Therefore, a reduction of channels like in on-screen teaching during the pandemic represents a higher cognitive work load and this can be equalized by enhancing virtual learning environments to match real-life student-teacher situations with their diverse stimuli for different channels. Accordingly, learning with an AI chat bot becomes more effective when the chatbot is humanized (antropomorphized) and when it stimulates diverse senses (modals). This is one of the hypotheses we try to proof with our field research carried out at different universities in Europe and China. However, we are also interested in identifying other factors playing into the success or failure of AI teaching vs. human teaching, like the availability, the teacher-student ratio (ai is 1:1), the overall attitude towards the human/AI teacher, the lower fear of failure in front of a chat bot in comparison to in front of a teacher or a class, the costs involved (AI is cheaper than university study fees), the possibility to tailor individual learning strategies, the possibility to get an overall impression of the student performance, identifying the weight of certain aspects, the overall situational/ethical/social appropriateness etc. The field studies also reflect on the changes in performance evaluation, e.g. evaluating programming chat bots, prompting and adjusting instead of evaluating the outcome (homework, thesis, journal paper).

Tiago Torrent

Professor of the Graduate Program in Linguistics and the head of the FrameNet Brasil Lab at Federal University of Juiz de Fora, Brazil. Research Productivity Grantee of the Brazilian National Research Council for Scientific and Technological Development.

Speech Title: Reframing Education in the Age of Copilots: Multimodal Language Capacities for an Ever-changing AI-Oriented World

Abstract: Schools are intended to guide pupils in their transition from family life to social and work life. Throughout the years, schools and universities have – not without some delay – resonated the changing needs of society, conforming their methodologies and approaches to education to match the expected abilities their alumni should have to be successful in the world they would encounter after graduating. The current pace of technological innovation has been challenging one foundational assumption of teachers and professors: that the world their students will find when leaving schools and universities will be

the same they experienced when they started their education. In this talk I revisit language capacities that have been populating school and university curricula for the past century and discuss the extent to which the Age of Copilots imposes changes to such capacities. In particular, I address the growing importance of collaborative creative and editorial practices, highlighting the potential of synthetic agents to augment students' proficiency in multimodal communication practices.

Mateusz-Milan Stanojević

Full Professor at University of Zagreb, Faculty of Humanities and Social Sciences.

Speech Title: Multimodal Communication in Learning, Teaching, and Research through the Cognitive Linguistic Lens: Understanding the Disruption

Abstract: Although multimodal communication is at the heart of how we communicate and learn, the multimodal component is frequently overlooked in our research. One of the reasons behind this may be its purported lack of systematicity, which inhabits sweeping generalizations, a long-standing aim of all theorizing.

In this talk, I claim that our multimodal human abilities are essentially local and socioculturally situated, a view that disrupts our traditional understanding of learning, teaching, and research. I illustrate how Cognitive Linguistics helps us bridge the gap between our communicative practices and its theorizing, drawing on examples of psycholinguistic and discursive studies focusing on language use, language learning and teaching.

陈　飞　CHEN Fei

Professor and Ph.D. supervisor at the School of Foreign Languages, Hunan University. His primary research areas include experimental phonetics, pathological linguistics, and neurolinguistics.

Speech Title: The Influence of Audiovisual Cross-Modal Integration on Speech Perception and its Implications for Speech Training

Abstract: This report examines the influence of audiovisual cross-modal integration on speech perception and its implications for speech training. The first section explores the effects of

audiovisual integration on speech processing, focusing on stimulus factors (such as the impact of visual cues like facial expressions and gestures, as well as speech rate on Mandarin tone perception) and listener factors (including cross-modal speech processing mechanisms in individuals with hearing impairments using cochlear implants or hearing aids). The second section investigates the role of audiovisual integration in speech training, covering areas such as second-language pronunciation training and speech rehabilitation. Through these studies, we delve into the potential of audiovisual integration in enhancing speech perception and training, offering new perspectives for the development of speech learning and instructional methodologies.

Renata Geld

Founding Director, Center for Cognitive Science, Associate Professor, Co-head MA in AppCogSci, cognitive science, cognitive linguistics, language education, interdisciplinarity in HE, creativity and creative ecosystems.

Speech Title: Learning as an Inherently Multimodal Process: Cognitive Science of Education

Abstract: Students, irrespective of age, learn best when they can engage with information through multiple formats, enhancing understanding, retention, and the ability to apply knowledge. Multimodal learning is far richer than merely presenting information in different sensory formats; it taps into the interconnected and dynamic processes of the mind, where ideas are synthesized, visualized, felt, and embodied. Learning is an active, imaginative, and deeply personalized process. In other words, learning is inherently multimodal. Real learning involves the construction of mental connections, the visualization of concepts, and personal engagement with material that is both emotional and embodied. These cognitive processes enable learners to relate to new ideas, imagine applications, and draw on prior knowledge to create networks of meaning. While learning through multiple modes is natural in the real world, classroom environments often fall short in providing these rich, varied experiences. To foster deeper, more meaningful engagement, educational approaches must shift toward more authentic, multimodal learning experiences. In modern education,

authenticity and experience must become imperatives. Learning experiences should encompass hands-on, real-world tasks as well as technologically driven contexts, contributing to a dynamic form of experiential learning. Authentic learning environments, whether grounded in real-world engagement or enhanced by immersive, technology-driven simulations, promote active participation, reflection, and the meaningful application of knowledge. Furthermore, to fully prepare students for the complexities of the 21st century, it is increasingly critical to integrate the humanities and social sciences with STEM, cultivating a multidisciplinary approach that reflects real-world challenges. By integrating these diverse contexts and perspectives, we equip students with the adaptability, insight, and holistic understanding necessary to navigate a rapidly changing world. In this talk, I will illustrate this approach with examples from a new graduate program in Applied Cognitive Science that was designed and accredited at the University of Zagreb. This program addresses the urgent need to integrate the humanities and social sciences with technical fields and STEM, providing students with a well-rounded, interdisciplinary foundation. Structured around the principles of multimodal and experiential learning, the program immerses students in real-world challenges and

technology-enhanced environments to foster deep cognitive engagement. I will discuss how the program was developed, emphasizing key aspects of its curriculum, which combines hands-on projects, interdisciplinary collaboration, and immersive simulations. Together, these elements equip students with the skills and adaptability needed to thrive in today's complex educational and professional landscapes.

杨雨箫 YANG Yuxiao

Associate Professor and Director of the Linguistics Faculty, Foreign Studies College, Hunan Normal University. Research fields include second language acquisition, experimental phonetics, and psycholinguistics.

Speech Title: The application of Multimodal Approaches in L2 Speech Learning in the Age of AI

Abstract: In this talk, I will present three empirical studies utilizing multi-modal approaches to the training of L2 sounds by Chinese learners of English. In the first study, visual modality of articulation was used to help learners distinguish highly similar English vowels. The training efficacy was compared with that of

the machine recognition approach. The second study focuses on the tactile modality of L2 phonetic training. Rubber bands were used to enhance the articulatory distinction between English tense and lax vowels, which appeared to be more effective in comparison with the traditional repetition methods. In the third study, three gestures were employed in the training of English stresses in different intonation patterns. The gestures were developed corresponding to the three suprasegmental features of pitch, intensity and duration, enabling learners to activate both visual and tactile modalities. The results of these studies suggest that the multi-modal approaches to nonnative speech learning could still harness irreplaceable values under the great influence of AI, especially in the tactile and proprioceptive domains.