The 50th Anniversary International Conference of the Linguistic Society of Korea

Modern Linguistics in Korea: Growth, Challenges, and Future

Handbook

Date: Oct 31 (Fri) - Nov 1 (Sat), 2025

Venue: Building 14, College of Humanities, Seoul National University

Hosted by: 한국언어학회 The Linguistic Society of Korea

Co-organized by: 담화·인지 언어학회 · 한국생성문법학회 The Korean Generative Grammar Circle · 한국언어정보학회 KSLI · 한국음운론학회 The Phonology-Morphology Circle of Korea · 서울대학교 언어학과 Department of Linguistics, SNU

Sponsored by: 서울대학교 언어학과 Department of Linguistics, SNU · 서울대학교 언어연구소 The Center for Linguistics, SNU · 서울대학교 인문대학 대학혁신지원사업 The Initiative for SNU College of Humanities' Research and Education

General Information

Venue:

#B101, #102, #103, #104, #202, #203, #204, #207, and #610

Building 14, College of Humanities (인문대학 14동), Seoul National University (SNU)

Address: 1, Kwanak-ro, Kwanak-gu, Seoul, Korea

Conference Website:

Please visit the following conference website for details about the conference including the conference program, venue, the SNU campus map, registration, and the handbook:

https://lsk50th.github.io

All information about the conference will be available at this site. Participants are asked to check this site to keep up to date regarding possible alternations and changes.

Registration fee:

Pre-registration fee:

- Faculty or PhD holders: KRW 40,000
- (Under)graduate students: KRW 25,000

On-site registration fee:

- Faculty or PhD holders: KRW 50,000
- (Under)graduate students: KRW 30,000

Registration fee payment:

All participants are recommended to pre-register for this conference. The pre-registration process is as follows:

Step 1. Pay the pre-registration fee to the Society's account:

- Bank: Nonghyup Bank (농협은행)
- Account Number: 301-0367-5322-21
- Account Holder: The Linguistic Society of Korea (예금주: 한국언어학회)

Step 2. Visit the following URL or scan the QR code to complete the registration form.

- https://forms.gle/zMjG3VEahm8Cw5pKA

- QR code:

The pre-registration period is **from Monday, September 22 to Monday, October 13**. After the pre-registration period, you may register on-site at the conference venue. Please note that meals will be prepared based on the number of pre-registered participants, and may be limited for on-site registrants.

For inquiries about conference participation after the pre-registration period, please contact the Society's email address at lsk202526@gmail.com.

Contents

Organizing and Program Committees

Conference Chair:

Hyopil Shin (LSK President, Seoul National University)

Organizing Committee:

Hanjung Lee (Chair, Sungkyunkwan University)
Hayeun Jang (Sungkyunkwan University)
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Program

Program Overview

(Korea Standard Time (KST) [UTC + 9:00])

Day 1: Friday, October 31, 2025

Room No.	Room 1 (#B101)	Room 2 (#102)	Room 3 (#202)	Room 4 (#207)	Room 5 (#610)
09:30-9:55	**Registration | Lower ground floor one (14동 지하 1층), in front of Room 1**				
10:00-10:10	**Opening Ceremony (Room 1)** Welcoming remarks: Hyopil Shin (LSK President, Seoul National University) Moderator: Jung-Hoon Lee (Sogang University)				
10:15-11:15	**Invited Talk 1 (Room 1)** Speaker: Jongho Jun (Seoul National University) Moderator: Sunwoo Park (PMCK President, Keimyung University)				
11:30-12:30	**Keynote Lecture 1 (Room 1) [Eng]*** Speaker: David Beaver (The University of Texas at Austin) Moderator: Jungmee Lee (Seoul National University)				
12:30-14:00	**Lunch Break**				
14:00-15:00	**Invited Talk 2 (Room 1)** Speaker: Sungeun Cho (Yeungnam University) Moderator: Changguk Yim (KGGC President, Chung-Ang University)				
15:10-16:40	**LSK/KGGC/PMCK Session 1**	**LSK/KGGC/PMCK Session 2**	**LSK/KGGC/PMCK Session 3**	**LSK/KGGC/PMCK Session 4**	**LSK/KGGC/PMCK Session 5**
	Phonology	**Syntax/Morphology**	**Language Processing/ Psycholinguistics**	**Computational Linguistics/ Corpus Linguistics**	**Pragmatics/ Discourse Analysis/ Sociolinguistics**
	Inkie Chung	Semoon Hoe	Youngju Choi	Boon-Joo Park	Sun-Young Lee
	박선우	Mija Kim [Eng]	Youngin Lee [Eng]	Ioana Buhnila [Eng]	Ziyun Dai, Se-Eun Jhang [Eng]
	이찬미, 윤수연	Bomi Shin [Eng] (withdrawn)	Chorong Kang, Jonghyun Lee, Heejeong Ko, Sung-Eun Lee [Eng]	Ye-eun Cho	Seung Lin Ding [Eng]
	주이안	Sungkyun Shin	소현정	Sunghwa Lee, Se-Eun Jhang	Inji Choi
16:50-18:00	**The LSK 50th Anniversary Commemorative Session (Room 1) (한국언어학회 창립 50주년 기념 행사)**				
18:10-19:30	**Dinner | #610 (14동 610호)**				

*[Eng]: Presentation in English; All sessions and presentations without this marking will be held in Korean.

LSK/KGGC/PMCK Sessions are jointly organized by the Linguistic Society of Korea, the Korean Generative Grammar Circle, and the Phonology-Morphology Circle of Korea.

Day 2: Saturday, November 1, 2025

Room No.	Room 1(#B101)	Room2(#102)	Room 3(#103)	Room 4(#104)	Room 5 (#202)	Room 6(#203)	Room 7(#204)
09:30-09:45	**Registration | Lower ground floor one (14동 지하 1층), in front of Room 1**						
09:50-10:00	**Opening Ceremony**						
	The Korean Society for Language and Information (KSLI) (Room 1)				**The Discourse and Cognitive Linguistics Society of Korea (DISCOG) (Room 7)**		
	Welcoming remarks: Incheol Choi (KSLI President, Kyungpook National University) Moderator: Jungsoo Kim (Incheon National University)				Welcoming remarks: Jinhae Kim (DISCOG President, Kyung Hee University) Moderator: Soyeon Yoon (Incheon National University)		
10:00-11:00	**KSLI Session 1**	**LSK/KGGC/ PMCK Session 6**	**KSLI Session 2**	**KSLI Session 3**	**DISCOG Session 1**	**DISCOG Session 2**	**DISCOG Session 3**
	Computational Linguistics	**Corpus Linguistics**	**Experimental Linguistics**	**Semantics/ Pragmatics**	**Syntax/ Semantics**	**Discourse and Cognition**	**General Linguistics**
	Seulkee Park	Seung-Ah Lee	Jungsoo Kim	Okgi Kim	Sunhee Yae	Mikyung Ahn	Soyeon Yoon
	Hyesun Cho [Eng]	Guandong Zhang, Se-Eun Jhang [Eng]	Jayeon Park, Hyosik Kim, Jon Sprouse [Eng]	Dongsik Lim [Eng]	김윤정	손연정	Suzy Park [Eng]
	공성호, 심진우 현민호, 문성민	이수진	Sang-Hee Park	Suwon Yoon [Eng]	Hyun Jee	김예진, 정유진	Heesook Kim
11:10-12:10	**Invited Talk 3 (Room 1) [Eng]** Speaker: Taehong Cho (Hanyang University) Moderator: Jieun Song (Korea Advanced Institute of Science and Technology)						
12:10-13:30	**Lunch Break**						
13:30-14:30	**Keynote Lecture 2 (Room 1) [Eng]** Speaker: Richard Sproat (Sakana AI) Moderator: Tae-Jin Yoon (Sungshin Women's University)						
14:45-16:05	**Early Career Researchers Session**						
	Phonetics/Phonology (Room 1)		**Syntactic Theory (Room 6)**		**Computational Linguistics/ Psycholinguistics (Room 7)**		
	Nayoung Park		Dongwoo Park		Say Young Kim		
	김영준		Soo Hwan Lee [Eng]		박아름		
	Sejin Oh		Jiwon Kim		Jonghyun Lee		
16:15-17:45	**KSLI Session 4**	**LSK/KGGC/ PMCK Session 7**	**KSLI Session 5**	**KSLI Session 6**	**DISCOG Session 4**	**DISCOG Session 5**	**DISCOG Session 6**
	Syntax/ Semantics	**Phonetics/ Phonology**	**Computational Linguistics**	**Experimental Linguistics/ Corpus Linguistics**	**Syntax/ Semantics**	**Syntax/ Semantics**	**Discourse Analysis**
	Sang-Hee Park	Hyun-ju Kim	Seongmin Mun	Hyosik Kim	Ji Young Lee	Yeonseob Lee	Hyun Sook Lee
	Kiyong Lee, Jae-Woong Choe Chongwon Park, Yonggyun Hahm, Byong-Rae Ryu, Harry Bunt [Eng]	Muhammad Farris Imadi Fuze, Suyeon Yun [Eng]	최재원, 남윤주	Nakyung Yoon [Eng]	이민영	Hakyung Yoon, Iksoo Kwon [Eng]	Jina Son, Sun-Young Oh [Eng]
	Sukchan Lee, Youngho Lee [Eng]	Soohyun Kwon, Juhyung Cho [Eng]	HeeSoo Kim	Jungsoo Kim, Rok Sim	강철	Keeseok Cho	Ki-tae Kim

	Byong-Rae Ryu	강예인, 김정윤	구슬, 김병준		마에무라 카즈아키	권명식	안진산, 이준, 남궁설, 남길임
17:50-18:00	**LSK General Meeting (Room 1)** Moderator: Hayeun Jang (Sungkyunkwan University)						
	Closing Ceremony (Room 1) Closing remarks: Hanjung Lee (Organizing Committee Chair, Sungkyunkwan University) Moderator: Hayeun Jang (Sungkyunkwan University)						

Presentation Lists

Day 1: Friday, October 31, 2025

10:15-11:15	**Invited Talk 1** Room 1 (#B101)
Moderator	Sunwoo Park (Keimyung University)
Speaker	Jongho Jun (Seoul National University) **The Evolution of Generative Phonology: Methods, Models, and the Phonotactics Alternation Interface**

11:30-12:30	**Keynote Lecture 1** Room 1 (#B101)
Moderator	Jungmee Lee (Seoul National University)
Speaker	David Beaver (The University of Texas at Austin) **Hell Raising: from the Politics of Language to the meaning of slurs**

14:00-15:00	**Invited Talk 2** Room 1 (#B101)
Moderator	Changguk Yim (Chung-Ang University)
Speaker	Sungeun Cho (Yeungnam University) **한국 생성문법 연구 개관: 격·뒤섞기·영논항**

15:10-16:40	**LSK/KGGC/PMCK Session 1: Phonology** Room 1 (#B101)	
Moderator	Inkie Chung (Sogang University)	
Presentations	15:10-15:40	박선우 (Keimyung University) **2000년대 이후 국내 음운론 연구의 동향에 대하여 – 연구논문 초록의 텍스트마이닝 기반 분석 –**
	15:40-16:10	이찬미, 윤수연 (Chungnam National University) **뇌출혈 환자 발화에서 나타나는 음운론적 유표성**
	16:10-16:40	주이안 (Otaru University of Commerce) **한국어에 음운적으로 가까운 어족들은?**

15:10-16:40	**LSK/KGGC/PMCK Session 2: Syntax/Morphology** Room 2 (#102)	
Moderator	Semoon Hoe (Hongik University)	
Presentations	15:10-15:40	Mija Kim (Kangwon National University) **Response Systems and the Role of Antecedents: Evidence from Interrogatives with *Can* and *Could***
	15:40-16:10	Bomi Shin (Sogang University) **The Locus of the [humble] Feature in the First-person Pronoun in Korean**
	16:10-16:40	Sungkyun Shin (Kangwon National University) **Diachronic Syntax and Chomsky's Third Factors: The Dream of the Rood**

15:10-16:40	**LSK/KGGC/PMCK Session 3: Language Processing/Psycholinguistics** Room 3 (#202)	
Moderator	Youngju Choi (Chosun University)	
Presentations	15:10-15:40	Youngin Lee (Sogang University) **Complementizers as Cues to Control: Evidence from Korean**
	15:40-16:10	Chorong Kang (Seoul National University), Jonghyun Lee (Korea University – Sejong Campus), Heejeong Ko (Seoul National University), Sung-Eun Lee (Seoul National University) **Retrieval Interference during the Processing of Null Objects: ERP Evidence for Referential Ambiguity in Retrieval**
	16:10-16:40	소현정 (Pusan National University) **화자의 악센트가 영어 모음의 지각 단서 가중치에 미치는 영향: 원어민과 한국인 학습자 비교**

15:10-16:40	**LSK/KGGC/PMCK Session 4: Computational Linguistics/Corpus Linguistics** Room 4 (#207)	
Moderator	Boon-Joo Park (Daegu Catholic University)	
Presentations	15:10-15:40	Ioana Buhnila (Chosun University) **Semantic and Pragmatic Annotation of Paraphrases in the Era of Large Language Models**
	15:40-16:10	Ye-eun Cho (Sungkyunkwan University) **Do Large Language Models Possess Pragmatic Competence? A Methodological Approach**
	16:10-16:40	Sunghwa Lee, Se-Eun Jhang (National Korea Maritime & Ocean University) **A Biblioshiny AI Study of Multimodal Analysis Research: Trends, Thematic Evolution, and Collaboration Networks**

15:10-16:40	**LSK/KGGC/PMCK Session 5: Pragmatics/Discourse Analysis/Sociolinguistics** Room 5 (#610)	
Moderator	Sun-Young Lee (Cyber Hankuk University of Foreign Studies)	
Presentations	15:10-15:40	Ziyun Dai, Se-Eun Jhang (National Korea Maritime & Ocean University) **A Corpus-based Approach to Multimodal Discourse Analysis of the Maritime Environment**
	15:40-16:10	Seung Lin Ding (University of Malaya) **Language and Politics of Identity in the Linguistic Landscape of Seoul**
	16:10-16:40	Inji Choi (Gyeongsang National University) **A Corpus-based Diachronic Analysis of *Now* as a Discourse Marker**

16:50-18:00	**The LSK 50th Anniversary Commemorative Session** Room 1 (#B101)
Moderator	Hanjung Lee (Organizing Committee Chair, Sungkyunkwan University)
	Awards Ceremony: The Hall of Fame Award and Special Service Award Presentation
	Special Lectures on The Linguistic Society of Korea's 50 Years By Former LSK Presidents Kiyong Lee (Korea University) and Minhaeng Lee (Yonsei University)

Day 2: Saturday, November 1, 2025

10:00-11:00	**KSLI Session 1: Computational Linguistics** Room 1 (#B101)	
Moderator	Seulkee Park (Kyung Hee University)	
Presentations	10:00-10:30	Hyesun Cho (Dankook University) **Comparing LLMs and Humans in the Gender Classification of Korean Names**
	10:30-11:00	공성호 (Kyungpook National University), 심진우 (Ajou University), 현민호 (Ajou University), 문성민 (Kyungpook National University) **레벤슈타인 편집 거리 알고리즘을 이용한 법률 용어 오탈자 자동 교정 시스템 제안**

10:00-11:00	**KSLI Session 2: Experimental Linguistics** Room 3 (#103)	
Moderator	Jungsoo Kim (Incheon National University)	
Presentations	10:00-10:30	Jayeon Park (New York University Abu Dhabi), Hyosik Kim (Jeonju University), Jon Sprouse (New York University Abu Dhabi) **Experimental Evidence for the Base-Generation Analysis for *kes*-Cleft in Korean**
	10:30-11:00	Sang-Hee Park (Hanbat National University) **Interpreting Indirectness in the Chungcheong Dialect: An Experimental Study**

10:00-11:00	**KSLI Session 3: Semantics/Pragmatics** Room 4 (#104)	
Moderator	Okgi Kim (Kyung Hee University)	
Presentations	10:00-10:30	Dongsik Lim (Hongik University) **Rhetorical Questions with Reportative Evidentiality: A Case Study of Korean *-tani***
	10:30-11:00	Suwon Yoon (University of Seoul) **Interjections as a Negative/Positive Irony-operator in English**

10:00-11:00	**DISCOG Session 1: Syntax/Semantics**	
	Room 5 (#202)	
Moderator	Sunhee Yae (Chung-Ang University)	
Presentations	10:00-10:30	김윤정 (Changwon National University) **사건 도식(event schema)의 중국어 구문 형성 패턴**
	10:30-11:00	Hyun Jee (Cyber Hankuk University of Foreign Studies) **A Study on Physical Contact Constructions in English: A Construction Grammar Approach**

10:00-11:00	**DISCOG Session 2: Discourse and Cognition**	
	Room 6 (#203)	
Moderator	Mikyung Ahn (Hankuk University of Foreign Studies)	
Presentations	10:00-10:30	손연정 (Hongik University) **텍스트형 밈(meme)의 인지적 구성과 담화적 함의**
	10:30-11:00	김예진, 정유진 (Korea University) **온라인 커뮤니티 여성 혐오표현의 은유 분석: [여성은 상품] 은유를 중심으로**

10:00-11:00	**DISCOG Session 3: General Linguistics**	
	Room 7 (#204)	
Moderator	Soyeon Yoon (Incheon National University)	
Presentations	10:00-10:30	Suzy Park (Yonsei University) **The Role of the Contrastive Pitch Accent in L2 Speakers' Interpretation of Pragmatic Alternatives**
	10:30-11:00	Heesook Kim (Cheongju University) **(A BLACKPINK) Rosé's Global Hit Song, "APT.": Why the World Cannot Help Loving It?**

10:00-11:00	**LSK/KGGC/PMCK Session 6: Corpus Linguistics**	
	Room 2 (#102)	
Moderator	Seung-Ah Lee (Ewha Woman's University)	
Presentations	10:00-10:30	Guandong Zhang, Se-Eun Jhang (National Korea Maritime & Ocean University) **Comparing Traditional and Key Lexical Bundle Extraction Methods in Maritime Legal English**
	10:30-11:00	이수진 (Kyungpook National University) **현대 신어에 대한 말뭉치 언어학적 연구 – 신어 정착 양상에 대한 단기 통시적 분석을 중심으로 –**

11:10-12:10	**Keynote Lecture 2**
	Room 1 (#B101)
Moderator	Tae-Jin Yoon (Sungshin Women's University)
Speaker	Richard Sproat (Sakana AI) **What do Large *Language* Models know about *language*?**

13:30-14:30	**Invited Talk 3** Room 1 (#B101)
Moderator	Jieun Song (Korea Advanced Institute of Science and Technology)
Speaker	Taehong Cho (Hanyang University) **From Phonetic Universals to Variation: Phonetic Grammar with Prosody**

14:45-16:05	**Early Career Researchers Session: Phonetics/Phonology** Room 1 (#B101)	
Moderator	Nayoung Park (Seoul National University)	
Presentations	14:45-15:25	김영준 (Seoul National University) **음성·음운 통합 문법: 음운론의 주요 쟁점에 대한 대안적 접근**
	15:25-16:05	Sejin Oh (Jeju National University) (in collaboration with Sahyang Kim at Hongik University and Taehong Cho at Hanyang University) **Intergestural Timing of a Prevocalic Glide in Korean**

14:45-16:05	**Early Career Researchers Session: Syntactic Theory** Room 6 (#203)	
Moderator	Dongwoo Park (Korea National Open University)	
Presentations	14:45-15:25	Soo Hwan Lee (Gyeongsang National University) (in collaboration with Michael Barrie at Sogang University) ***Wh*-Extraction across *Wh*-Islands in English Control Constructions**
	15:25-16:05	Jiwon Kim (Incheon National University/Hansung University) **A Comprehensive Analysis of Postsyntactic Feature Copying in Korean**

14:45-16:05	**Early Career Researchers Session: Computational Linguistics/Psycholinguistics** Room 7 (#204)	
Moderator	Say Young Kim (Hanyang University)	
Presentations	14:45-15:25	박아름 (Sungkyunkwan University) **AI 언어 모델의 신조어 자동 번역 성능에 대한 연구: 한국어-영어/독일어 번역을 중심으로**
	15:25-16:05	Jonghyun Lee (Korea University – Sejong Campus) (in collaboration with Dojun Park, Jiwoo Lee, Hoekeon Choi, and Sung-Eun Lee at Seoul National University) **Exploring Multimodal Perception in Large Language Models: Through Perceptual Strength Ratings**

16:15-17:45	**KSLI Session 4: Syntax/Semantics** Room 1 (#B101)	
Moderator	Sang-Hee Park (Hanbat National University)	
Presentations	16:15-16:45	Kiyong Lee (Korea University), Jae-Woong Choe (Korea University), Chongwon Park (University of Minnesota Duluth), Yonggyun Hahm (Teddy Sum, INC.), Byong-Rae Ryu (Chungnam National University), Harry Bunt (Tilburg University) **Korean Quantification in Abstract Meaning Representation**
	16:45-17:15	Sukchan Lee, Youngho Lee (Seoul National University) **Honorifying without Mentioning: The Case of Korean *si***
	17:15-17:45	Byong-Rae Ryu (Chungnam National University) **Specificational *kes*-Clefts as Focus-Background Structures in Korean**

16:15-17:45	**KSLI Session 5: Computational Linguistics** Room 3 (#103)	
Moderator	Seongmin Mun (Kyungpook National University)	
Presentations	16:15-16:45	최재원 (Hankuk University of Foreign Studies· Hanyang University), 남윤주 (Hanyang University) **한국어 읽기 관련 LLM attention과 인간 시선추적 데이터 비교**
	16:45-17:15	HeeSoo Kim (Korea University) **A Comparative Study of Empathy Strategies in Spanish-Language Human-Chatbot Interactions: The Cases of GPT-5, GPT-4o, Gemini, PiAI, and LuzIA**
	17:15-17:45	구슬, 김병준 (The Academy of Korean Studies) **한국 인문사회과학 학술 글쓰기의 새로운 지형: KCI 초록 데이터 기반 언어적 분석 (2004~2024)**

16:15-17:15	**KSLI Session 6: Experimental Linguistics/Corpus Linguistics** Room 4 (#104)	
Moderator	Hyosik Kim (Jeonju University)	
Presentations	16:15-16:45	Nakyung Yoon (Korea University) **Telicity in L2 Acquisition of Spanish Double Object Constructions with Optional *se***
	16:45-17:15	Jungsoo Kim (Incheon National University), Rok Sim (University of South Carolina) **Persuasive Americans vs. Brutal Brits? A Collostructional Approach to the Transitive *out of -ing* Construction**

16:15-17:45	**DISCOG Session 4: Syntax/Semantics** Room 5 (#202)	
Moderator	Ji Young Lee (Inha Technical College)	
Presentations	16:15-16:45	이민영 (Seoul National University) **어미 상당 구성 '-어 가지고'의 전경성**
	16:45-17:15	강철 (Yonsei University) **한국어의 중동태(middle voice) 표현과 판결문 분석**
	17:15-17:45	마에무라 카즈아키 (Hankuk University of Foreign Studies) **자료를 근거한 관형사형 어미 '-을' 혹은 '-는'의 선택**

16:15-17:45	**DISCOG Session 5: Syntax/Semantics**	
	Room 6 (#203)	
Moderator	Yeonseob Lee (Hansung University)	
Presentations	16:15-16:45	Hakyung Yoon, Iksoo Kwon (Hankuk University of Foreign Studies) ***It's Giving*: The Emitting *Give* Construction As an Instance of NULL INSTANTIATION**
	16:45-17:15	Keeseok Cho (Cyber Hankuk University of Foreign Studies) **A Unified Theta Marking Approach to Extraction from Adjuncts in English**
	17:15-17:45	권명식 (Hankuk University of Foreign Studies) **고대 이집트어, 동부 수단어, 그리고 코르도판어의 술어 논항 구문 유형 비교, 사용-기반 구성문법(네트워크 모델)을 중심으로**

16:15-17:45	**DISCOG Session 6: Discourse Analysis**	
	Room 7 (#204)	
Moderator	Hyun Sook Lee (Jangan University)	
Presentations	16:15-16:45	Jina Son, Sun-Young Oh (Seoul National University) **Developing Korean Telephone Interaction Studies: A Comparative Conversation Analysis of Mobile and Video Call Openings**
	16:45-17:15	Ki-tae Kim (Keimyung University) **'Wonyoung's Optimism' and 'Lucky Vicky' from the Perspective of Positioning Theory**
	17:15-17:45	안진산 (Kyungpook National University), 이준 (Yonsei University), 남궁설 (Yonsei University), 남길임 (Yonsei University) **무슬림 이주민 혐오에 대한 말뭉치 보조 담화 분석 – 대구 이슬람사원 건축 사건을 중심으로 –**

16:15-17:45	**LSK/KGGC/PMCK Session 7: Phonetics/Phonology**	
	Room 2 (#102)	
Moderator	Hyun-ju Kim (SUNY Korea)	
Presentations	16:15-16:45	Muhammad Farris Imadi Fuze, Suyeon Yun (Chungnam National University) **Phonological and Morphological Constraints on Affixed Reduplication in Banjarese**
	16:45-17:15	Soohyun Kwon (Kyung Hee University), Juhyung Cho (University of Toronto) **Tracing Lifespan Language Change: Attenborough and Vowel Shifts in Received Pronunciation**
	17:15-17:45	강예인, 김정윤 (Pusan National University) **AI는 공시적 음성 변이를 반영하는가?**

Keynote Lectures

Hell Raising: from the Politics of Language to the meaning of slurs

David Beaver
(The University of Texas at Austin)

Much work in formal semantics assumes truth and rational inference as central ideals, while pragmatics often assumes cooperative information exchange. Yet political speech rarely fits these ideals, frequently sacrificing truth, while reserving cooperation for partisan ends. The key concepts for political language are not truth and cooperativity, but emotional impact, cultural resonance, and power to shift group affiliation. How then do such political, sociological and psychological considerations bear on linguistic theory? I will introduce key features of my recent book with Jason Stanley, *The Politics of Language*, which is motivated not by the ideals of cooperative information exchange, but by the messy, non-ideal world of social and political interaction. After introducing the framework, I turn to a paradigm case of non-ideal language: slurs. In both Korean and English, slurs carve up the social world along regional, ethnic, class, and gender boundaries, reproducing hierarchies of power. I argue that such language cannot be understood within standard idealizations, and that only a theory grounded in social reality can explain their peculiar power to wound and to divide.

Bio

David Beaver (PhD University of Edinburgh 1995) was on the faculty at Stanford University for 9 years, leaving as a tenured associate professor to join UT, where he has been for the last 18 years as a Professor of Linguistics. He has courtesy appointments to Philosophy and to the Human Dimensions of Organization (HDO) program, also serving as director of the Cognitive Science Program. He currently serves as the Linguistics department graduate advisor, and has previously served as the graduate advisor for HDO.

Beaver's research centers on the nature of meaning, taking formal semantics and pragmatics as a start point to approach questions with many different flavors, computational, philosophical, political, psychological, and sociological. His recent work includes the co-development in *The Politics of Language*, computational studies of differences between in-group and out-group language (with his student Venkat Govindarajan and others), work on the semantics of descriptions (with Liz Coppock), and work on the historical development of the mirative intensifier "very" (with Ashwini Deo). Earlier work includes the books *Presupposition and Assertion in Dynamic Semantics*, and *Sense and Sensitivity* (with Brady Clark). These together with two co-edited books, and many journal articles and book chapters, have garnered over 10,000 citations (*Google Scholar*). Beaver is a fellow of the Linguistics Society of America, and was founding editor with Kai von Fintel of the leading journal *Semantics and Pragmatics*, the first major open access journal in Linguistics.

What do Large *Language* Models know about *language*?

Richard Sproat
(Sakana AI)

When ChatGPT debuted in late 2022, and its linguistic abilities were on full display, it led to an immediate soul searching among linguists as to what this meant for their field. The reactions were various. At one end of the spectrum such systems were derided as being little more than "stochastic parrots", with little or no implication for understanding human language abilities. Critics pointed to the obvious fact that Large Language Models—LLMs—are trained on largely decontextualized written text, in amounts that are many orders of magnitude higher than the amount of contextualized, mostly spoken, language that children are exposed to. At the other end of the spectrum were claims that the success of LLMs demonstrated that there is no need to presume an innate predisposition towards language, and that general systems with general learning biases are sufficient to the task. As LLMs have evolved to be ever more powerful, they have also become more multimodal, addressing to some extent the concern about decontextualization. Work in areas such as the BabyLM Challenge, has demonstrated that LLMs can learn at least some aspects of language from human-scaled amounts of data. Still, concerns remain, and the jury is still very much out on what exactly LLMs mean for theories of human language. If nothing else, it remains true that LLMs learn language in a vastly different way from the way humans do: To my knowledge, there is no documented case of a person learning language perfectly simply by ingesting trillions of words of text.

In this talk I will review a small fraction of the already sizable literature that investigates these questions, as a segue into discussing some of the research that I have been involved in recently that also speaks to these issues.

An obvious and easy point to make is that LLMs are exceedingly data hungry, and how well the system knows a particular language is directly related to how much data it has seen. This point certainly applies to human learners too, but with LLMs, even for languages where one would have thought there is "enough" data, one can find stark differences in LLMs' abilities. For example (joint work with Brian Roark and Su-Youn Yoon) we show that LLMs are far better at spelling correction for English than they are for Korean, which is surely in part related to the fact that the models have been exposed to at least an order of magnitude more data for English than for Korean.

But a deeper question is what LLMs know about *language*. I don't mean how well they have learned a particular language, or have internalized grammatical structures of that language, or how that grammatical knowledge is represented—the topic of much of the recent literature that probes LLMs' linguistic abilities. What I mean instead is how well LLMs know things that a well-trained linguist would know about how languages vary—the genetic variation of language, if you will. For example, any linguist knows that languages differ in their word order preferences, with some patterns (SOV, SVO) being very common, others (VSO) somewhat less common, and still others (VOS) less common still. Any linguist should know the distinction between nominative-accusative and ergative-absolutive case marking; that some languages mark dual number in addition to singular and plural; that some languages make an inclusive-exclusive distinction in first person plural pronouns; that case prefixes are vanishingly rare compared to case suffixes. One way to probe this knowledge is to use LLMs as an assistant in creating natural-language-like Constructed Languages—ConLangs, and I will present ongoing work (with Chihiro Taguchi) where we investigate the use of LLMs to construct all aspects of ConLangs, from phonology to morphology and syntax. Our results show that not only is there a (sometimes surprising) difference in abilities of LLMs to do this, but even for LLMs that are competent at the task, the output varies in ways that seem to correspond to how common the feature is cross-linguistically. For example, we can prompt the system to produce the target words and phrases of the ConLang in a given order by explaining the word order variations found across languages, and by giving examples of what the intended order should be. We find that for SVO, SOV and VSO languages the results are usually accurate, whereas if we ask for VOS order (found in only 1.8% of

the languages in the sample in https://wals.info/chapter/81), what we usually get instead is VSO order. These and similar results suggest that LLMs, while they have internalized some facts about language, are still strongly biased in what they know.

Linguistics, it seems, is still needed.

Bio

Richard Sproat is a research scientist at Sakana.ai, Japan, working on artificial intelligence in language processing, agentic systems and image understanding. He received his PhD in Linguistics from MIT in 1985, worked as a researcher at AT&T Bell Laboratories, as a professor at the University of Illinois Urbana-Champaign and the Oregon Health & Science University, as a research scientist at Google New York, then Google Tokyo, before joining Sakana.ai. He has published in a wide variety of areas of linguistics and computational linguistics, including work on experimental phonetics, computational morphology, text-to-speech synthesis, text normalization, and finite-state methods in language processing. He has a strong interest in writing systems and symbol systems more generally, with two of his recent books being in this area: *Symbols: An Evolutionary History from the Stone Age to the Future* (2023), and *Tools of the Scribe: How Writing Systems, Technology, and Human Factors Interact To Affect the Act of Writing* (with Brian Roark and Su-Youn Yoon, forthcoming 2025), both published by Springer.

Invited Talks

The Evolution of Generative Phonology: Methods, Models, and the Phonotactics–Alternation Interface

Jongho Jun
(Seoul National University)

This talk consists of two parts. First, I will provide a brief review of the development of generative phonological theories and their associated research methods since *The Sound Pattern of English* (SPE; Chomsky & Halle 1968). Specifically, I will discuss the rule-based theory presented in SPE, Optimality Theory (OT; Prince & Smolensky 1993/2004), and Maximum Entropy OT (MaxEnt; Goldwater & Johnson 2003; Hayes & Wilson 2008). For each theory, I will examine typical data patterns, data collection methods, and analytical mechanisms. I will then focus on how perspectives regarding the relationship between phonotactics and alternations have evolved over time.

In SPE, ordered rules were hypothesized to constitute the mental grammar. Phonologists aimed to identify the correct rules and their orderings, using sample derivations to illustrate proposed analyses. This rule-based phonology, however, faced issues such as conspiracy and duplication, leading to its replacement by OT. In OT, ranked constraints form the mental grammar, and phonologists seek to determine the appropriate constraints and their rankings. Tableaux are used to illustrate analyses. To date, no theory introduced after OT has achieved comparable dominance. However, a notable shift has been the expansion of phonological research from categorical to variable patterns. Several probabilistic models have been proposed to account for these variable, quantitative patterns, with MaxEnt emerging as particularly influential. In MaxEnt, weighted constraints define the grammar, and phonologists aim to identify the correct constraints and their weights. Analyses typically involve simulations of grammar learning and testing, intended to model speakers' acquisition and use of phonological patterns. As far as I can tell, MaxEnt remains widely used and is likely to continue its prominence in the near future.

In the second half of the talk, I will address a more specific topic: the relationship between phonotactics and alternations. This issue has been central in phonological and morphological theory since SPE. Two competing views exist. SPE assumed no universal link between alternations and phonotactics, employing distinct formal mechanisms—rules and Morpheme Structure Constraints—to account for each. In contrast, OT posits a universal link, using a single set of ranked constraints to explain both phenomena. A well-known challenge to this view is the Non-Derived Environment Block (NDEB) effect, where a sequence is well-formed within a morpheme but ill-formed across morpheme boundaries. In such cases, phonological processes apply across morpheme boundaries, yet their target sequences are attested within morphemes. This mismatch is difficult to reconcile within OT, which does not fundamentally distinguish between phonotactics and alternations. Numerous proposals—both rule-based and constraint-based—have been offered, but none, to my knowledge, fully account for all attested NDEB patterns while maintaining theoretical restrictiveness.

Against this backdrop, Chong (2017, 2019, 2021) argues that NDEB phenomena do not necessarily undermine the claim of a link between phonotactics and alternations. Chong conducted corpus studies on two well-known NDEB cases: Korean palatalization and Turkish velar deletion. The findings indicate that in Korean, palatalization is general and active both at stem-suffix boundaries and within morphemes, whereas in Turkish, the constraint triggering velar deletion is active only in limited morphological contexts and inactive within morphemes. Thus, in both languages, phonotactics and alternations do not completely diverge. Furthermore, results from Chong's Artificial Grammar Learning (AGL) experiment show that alternations lacking phonotactic support are more difficult to learn than those with such support. These findings support the claim of a strong, universal link between alternations and phonotactics. This claim has recently been reinforced by Jun, Byun, Park & Yee's (2025) experiments, which tested the hypothesis that alternation patterns with strong lexical support are more robust—i.e., more productive and general—than those with weak or no lexical support. By measuring lexical support for three Korean alternation patterns known to exhibit NDEB effects and differing in productivity and generality, Jun, Byun, Park & Yee found results consistent with the hypothesis.

In conclusion, the evidence suggests a substantive link between phonotactics and alternations. Nonetheless, further investigation is needed into remaining NDEB cases to assess the robustness of

relevant phonotactic constraints and the productivity and generality of their associated alternation patterns.

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한국 생성문법 연구 개관: 격·뒤섞기·영논항·조각문

조성은
(영남대학교)

한국에서의 생성문법 연구는 1960년대 말부터 본격적으로 시작되어 반세기 이상 축적된 전통을 지니고 있습니다. 도입기(1960년대 말~1970년대)*에는 Chomsky의 *Aspects of the Theory of Syntax* (1965)와 변형생성문법 이론이 한국 학계에 소개되었습니다. 이 시기 연구는 주로 한국어의 특수성을 반영한 어순, 격(格) 표지 등을 중심으로 전개되었습니다. 확립기(1980년대)에는 *Government and Binding Theory*(GB, 1981)가 도입되면서, 공범주 현상(empty category), 주어 상승(subject raising), 통제(control), 격 필터(case filter) 등 다양한 한국어 구문 현상을 생성문법 틀로 설명하는 연구가 활발히 이루어졌습니다. 이 과정에서 영어 중심의 지배·결속 이론을 한국어 자료에 맞게 수정·보완하려는 시도도 활발했습니다. 확장기(1990년대~2000년대)에는 *Minimalist Program*(Chomsky, 1993, 1995)을 수용하여, 주제(topic)·초점(focus), 기능 범주, 핵 이동(head movement), 명사구 구조(DP 가설) 등이 본격적으로 탐구되었습니다. 이 시기 한국어 자료는 국제 학계에 활발히 제공되어, 한국 연구자들이 해외 저널과 학회 활동을 통해 큰 기여를 했습니다.

최근 동향(2010년대~현재)는 최소주의 심화 연구와 함께 담화 기반 문법, 정보 구조, 실험 언어학 및 코퍼스 기반 연구와의 융합을 시도하는 흐름으로 요약할 수 있습니다. 이러한 연구는 한국어 생성문법이 단순히 외래 이론을 수용하는 단계를 넘어, 한국어 자료를 통해 이론 자체를 수정·발전시키는 단계에 이르렀음을 보여줍니다.

본 발표는 그 가운데서도 격, 뒤섞기(scrambling), 영논항(null arguments), 조각문(fragments) 네 가지 주제를 중심으로 논의를 진행합니다. 한국어는 교착어로서 풍부한 격조사 체계를 지니고 있으며, 이로 인해 영어 중심의 생성문법 이론에 많은 도전을 제기해왔습니다. 특히 격조사의 비실현, 격중출 현상, 주격과 주제 표지 '-은/는'의 관계, 피동·사동 구문과 격, 격과 정보 구조의 상호작용 등이 지속적으로 연구되어 왔습니다.

뒤섞기 현상은 한국어 구문 연구에서 핵심적 위치를 차지합니다. 주요 쟁점은 "뒤섞기가 이동인가, 기저 어순인가?", "국지적 뒤섞기와 장거리 뒤섞기의 차이", "뒤섞기의 선택성과 담화적 효과" 등에 집중되어 왔으며, 최근에는 담화·정보 구조와의 인터페이스, 실험 및 코퍼스 기반 접근이 활발히 이루어지고 있습니다.

영논항(null arguments) 현상은 통사 구조상 필수적인 논항(예: 주어·목적어)이 표면적으로 실현되지 않는 경우를 가리킵니다. 이에 대한 연구는 영논항의 본질, 허용 조건, 주어·목적어의 차이, 해석 과정을 둘러싸고 이루어지고 있으며, 한국어 영논항이 다른 언어의 현상과 어떻게 유사하거나 다른 지를 밝히는 것이 중요한 쟁점입니다.

조각문(fragment) 연구는 문법적으로 불완전한 표현이 실제 대화에서 자연스럽게 사용되는 현상을 설명하는 데 초점을 맞춥니다. 생성문법 내에서는 PF 단계에서의 생략 분석과 직접해석 분석이 대립하고 있으며, 특히 조각문에도 섬 제약(island constraints)과 같은 통사 제약이 적용된다는 사실이 밝혀졌습니다. 한국어의 다양한 조각문 연구는 통사·의미·담화 인터페이스를 탐구하는 중요한 자료로, 언어 보편성과 특수성을 동시에 검증하는 데 기여하고 있습니다.

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From Phonetic Universals to Variation: Phonetic Grammar with Prosody

Taehong Cho
(HIPCS, Hanyang University)

One of the central themes in the history of linguistics has been how abstract linguistic categories are mapped onto surface realizations. In phonetics and phonology, mid-20th-century frameworks such as *The Sound Pattern of English* (Chomsky & Halle, 1968) cast phonetics as a mere byproduct of the speaking device's physical operation. This view began to change with Keating's (1985, 1990) proposal of *phonetic grammar*—a grammatical component that refines phonological representations with fine-grained phonetic detail, ensuring that outputs conform to the pronunciation norms of individual speech communities. This view elevated phonetics as a core component of linguistic structure. Later, Cho and Ladefoged (1999) introduced the notion of *phonetic arbitrariness*: the observation that languages select modal phonetic values for phonological features in ways not fully predictable from universal principles. For example, one language may adopt a relatively long modal VOT for a voiceless aspirated category, while another employs a much shorter value. Such phonetic arbitrariness underscores the language-specific realization of what is otherwise the same category and reinforces the view of phonetics as an actively learned, socially shared system (see also Cho, Whalen, & Docherty, 2019).

The trajectory culminated in ***the extended model of phonetic grammar*** (Cho, 2025, and references therein), which reconceptualizes phonetic grammar not as a mechanism that merely implements phonology but as a *central hub* that integrates input from prosody and other higher-order structures such as morphology, syntax, and information structure. Within this framework, prosody occupies a privileged position via the phonetics–prosody interface, shaping phonetic realization and mediating its interaction with other linguistic structures. The primacy of prosody in speech production is evident in both developmental and structural domains. From the earliest stages of life, infants are immersed in speech sounds intertwined with prosodic patterns—even in utero, where they become sensitive to the rhythmic and intonational contours of the ambient language—well before abstract phonological or syntactic categories emerge. As phonological categories gradually crystallize during acquisition, children fine-tune their speech production to align with them, just as other members of their speech community do. Crucially, however, phonological categories themselves cannot be realized without prosodic scaffolding as segmental detail is always implemented within a prosodic frame. Thus, in the early years of acquisition, the interfaces of phonetics with phonology and prosody are jointly shaped in an intricately interdependent manner. At the same time, prosodic structure itself interacts closely with other higher-order domains. Syntax–prosody mapping, information structure–prosody mapping, and related interfaces reveal how prosodic organization serves as the conduit through which abstract categories are phonetically instantiated. The extended model underscores this interdependence: phonetic grammar functions as a dynamic system that links phonetics with phonology and prosody (with the latter providing the primary anchor for the fine-tuning of the former), and further with other higher-order structures—either directly or indirectly through prosodic mediation—together yielding the distinctive phonetic hallmarks of a language.

In this talk, I approach the extended framework of phonetic grammar through the lens of utterance-level phonetic universals, foregrounding the primacy of prosody at this level. Prosodic structure functions as an articulatory frame for organizing speech, a role that emerges from the systematic imprints left by universal physiological processes. Respiratory cycles, in particular, impose natural boundaries on production, forming the basis of *breath groups* (Lieberman, 1966). Aligned with expiratory phases, breath groups define the temporal scope of an utterance and provide the physiological foundation for phrase-level prosodic constituents, thereby regulating prosodic phrasing. Their phonetic reflexes follow from a simple asymmetry: onsets are accompanied by increased subglottal pressure and articulatory force, while offsets coincide with declining respiratory energy. This asymmetry yields characteristic utterance-level patterns—stronger articulatory and acoustic effects at the left edge and relative weakening at the right edge—from which several well-attested phonetic universals follow. *F0 declination*—the overall downward trajectory of F0 across an utterance—reflects the gradual reduction in subglottal pressure across the breath group. *Articulatory declination* parallels this pattern, with gestures tending to weaken as the utterance unfolds. *Phrase-final lengthening* extends segments at the

right edge, reflecting both respiratory decline and slowing articulatory movements, while *domain-initial strengthening* at the left edge highlights the renewed articulatory energy at the reset.

While these phonetic patterns reveal that physiology provides the universal foundations of utterance-level speech production, their outcomes are anything but uniform. What may appear to be simple mechanistic byproducts of the vocal apparatus are, in fact, emergent patterns at the phonetics–prosody interface—i.e., intrinsically tied to prosodic structuring, which mediates the link between physiological processes and linguistic organization and shapes how utterance-level phonetics emerges from that mediation. Through this interface, shared physiological pressures are transformed into language-specific phonetic patterns. Phrase-final lengthening, for example, though grounded in universal physiological processes, differs in both magnitude and scope across languages. A particularly revealing case involves languages with vowel quantity contrasts, where lengthening is delicately modulated to preserve distinctions between short and long vowels. This sets them apart from languages that do not employ quantity contrasts, while still showing variation among those that do, as in Finnish and Japanese. Comparable language-specific modulations are also observed in other utterance-level universals, underscoring the diversity of phonetic realization that emerges within a universal framework.

It is precisely here that the extended notion of phonetic grammar becomes crucial, providing the framework that explains how shared physiological tendencies are fine-tuned into language-specific phonetic patterns. First, it formalizes the *phonetics–prosody interface*, encoding how prosodic boundaries (phrasing) and prominence (emphasis) modulate phonetic detail. Second, it expands to *encompass other higher-order linguistic structures.* For instance, patterns of strengthening and weakening across multiple phonetic dimensions, when combined with prosodic structure, can signal focus in information structure, guide syntactic parsing through boundary placement, and reinforce—or at times obscure—morphological structure at affixal junctures. Third, it emphasizes *constraint balancing*, showing how each language weighs system-oriented factors (respiratory mechanics, ease of articulation) against output-oriented goals (contrast enhancement, perceptual clarity). Finally, it highlights how *phonetic arbitrariness emerges even in utterance-level phenomena*: languages diverge in their modal values for final lengthening, domain-initial strengthening, or declination, reflecting distinct evolutionary pathways.

In summary, utterance-level phonetic patterns—often dismissed as low-level reflections of physiology—are actively shaped through speaker control and stabilized within speech communities, giving rise to systematic variation across universals. Phonetic grammar accounts for this duality by linking biomechanical foundations with language-specific realizations, with prosodic structure at the center of integration. Within the broader architecture of grammar, prosodic-structurally conditioned phonetic detail is fine-tuned through interaction with other higher-order structures, balancing system-oriented pressures with communicative demands. In this way, it bridges mechanistic accounts of *the past* with a *forward-looking vision* in which phonetics is an integral component of linguistic theory—essential for explaining convergence across universals and divergence across phonetic grammars, and for understanding the speech production system that must encode not only phonetics and phonology but also other components of linguistic structure to deliver the speaker's intended message.

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Early Career Researchers Sessions

음성·음운 통합 문법: 음운론의 주요 쟁점에 대한 대안적 접근

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전통적인 순방향(feed-forward) 문법 모형에서 음성 실현은 전적으로 음운부(phonological component)의 산출물에 의존한다. 이 선형적 구조에서는 어휘부에서 음운부로, 다시 음운부에서 음성부(phonetic component)로 정보가 순차적으로 전달되며, 후행 단계인 음성 실현 단계에서 선행 단계의 정보(기저형이나 음운 계산 과정)에 대한 역행적 접근은 구조적으로 차단된다. 그러나 음운부를 이항자질(binary features)과 같은 이산적 기호의 추상적 조작에 할당하고 음성 실현을 그 산출물에 대한 부수적 조작 단계로 간주하는 이러한 전통적 모형은 다음과 같은 지점에서 재고가 필요하다.

첫째, 언어 고유적인 음성적 실현은 보편적이고 생리적인 요인들을 통해 예측될 수 없으며, 따라서 연속적이고 물리적인 특성을 처리할 수 있는 계산 체계가 별도로 필요하다(음성 문법). 많은 음운론적 현상들의 실현이 점층적인 음성 작용의 연속선상에 있음을 고려할 때(Flemming 2001), 이는 중복성(duplication) 문제로 이어진다(예: 자음 위치 동화 對 동시 조음 효과). 설령 음운부와 음성부의 분할을 인정한다고 하더라도, 각각을 위해 별개의 자질 체계를 상정하는 것은 비경제적이다.

둘째, 이러한 계산체계, 곧 문법의 음성부가 음운부의 결과에 대한 변주에 불과한 체계라면 불완전 중화(incomplete neutralization)과 같은 사례들에 대해 구조적 모순에 직면한다.

이러한 고려 아래에서 대안적으로 제시될 수 있는 것은 문법의 음운부와 음성부가 실질적으로 통합된 형태의 문법 모형이다. 이러한 통합 문법 모형은 다양한 형태로 제안되어 왔으나, 음운적인 이산성을 음성적 연속성의 연장선에 놓고 단일한 문법으로 처리하는 것을 시도한다는 점에서는 동일하다(Browman & Goldstein 1992, Flemming 2001, Gafos & Benus 2006).

본 발표는 음성·음운 통합 문법의 한 가지 가능한 구현으로서 음성충실성 모형(Phonetic Faithfulness Model, Kim 2024, in press)을 개관하는 것을 목표로 한다. 모형의 핵심 제안은 적잖은 음운적 현상이 음성적으로 세부적인 정보에 대한 충실성 효과에 기인한다는 것이다. 이 모형의 핵심적인 이점은 단순히 전통 모형에 대한 구조적 대안에 그치는 것이 아니라 음운론 영역의 오랜 난제들에 대한 대안적 접근으로서 그 가능성을 보여준다는 데에 있다. 특히, 본 발표에서는 음운 불투명성(phonological opacity)을 그 핵심 시험대로 삼을 것이다.

핵심적 제안은 다음과 같다. 예컨대 /ni/ → [ɲi]와 같이 구개음화가 표면적으로 나타나는 언어에서 /noi/ → [ni]와 같은 과소적용(underapplication)이 발생하는 경우는 기저 /o/의 F2 목표치의 실현에 대한 충실성 효과가 구개음화 효과를 저지하는 것으로 추상(抽象)할 수 있으며, /nio/ → [ɲo]와 같은 과도적용(overapplication)이 발생하는 경우 역시 기저 /i/의 F2 목표치의 실현에 대한 충실성 효과가 구개음화 실현을 유발하는 것으로 이해할 수 있다. 이러한 충실성 효과는 구체적 음성 실현 요구에 대한 직접적인 형식화를 통해서, 또는 이러한 요구가 반영되어 있는 실현형에 대한 충실성 효과라는 간접적 방식을 통해서 구체화될 수 있다.

이러한 핵심 제안은 다음과 같은 이점을 가진다. 첫째, 이러한 제안은 기본적으로 손실함수의 최적화 문제로 형식화될 수 있으며(e.g., Flemming 2001), 최적성 이론 및 조화문법(Harmonic Grammar) 등의 다양한 제약 기반 이론의 틀 내에서 적절한 충실성 제약의 도입과 함께 효과적으로 작동하게 하는 것이 가능하다. 따라서 극단적인 형식 음운론에 대한 부정이나(e.g., Port & Leary 2005), 음운론 내의 음성적 실질에 대한 배척(Reiss 2018)과 같은 극단적 해결책을 호출하지 않고, 생성문법 기반의 형식 음운론

전통 내에 음성학을 포섭하여 문제를 해결한다. 둘째, 새 접근법은 불투명성에 대한 대안적 설명을 제공할 뿐 아니라 유형론적 관점에서도 이론적 예측이 실제와 부합하며, 기존에 분산되어 논의되던 불완전 중화, 융합(coalescence), 보상장음화 등의 현상을 통합적으로 설명할 가능성을 제시한다. 이는 본 제안이 기존 문법 모형의 단순한 대안에 그치지 않고, 음운론적 난제에 대한 효과적인 설명을 제공할 수 있는 현실적 접근법이 될 수 있음을 의미한다.

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Intergestural timing of a prevocalic glide in Korean

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Understanding how articulatory movements are temporally and spatially coordinated is crucial for discovering the dynamic nature of speech production. In particular, the coordination of prevocalic glide gestures presents a particularly complex case as the same prevocalic glide gesture can be analyzed differently as part of a 'segment sequence,' a 'complex segment,' or a 'diphthong' (e.g., Reihl, 2008; Sagey, 1986). For example, a prevocalic glide gesture can form a segment sequence with a preceding consonant, e.g., [bjuti] 'beauty' in English, constitute a component of a complex segment, e.g., [bʲust] 'bust' in Russian, or form part of a diphthong e.g., [ˈbjuða] 'widow' in Castilian Spanish. While some languages provide robust evidence through phonological patterns and distributional evidence, in others, such evidence is either absent or subject to controversy. The status of Korean glides exemplifies the latter. Some findings concern its phonological behavior in forming an onset cluster (e.g., Cheon, 2002), a complex segment (e.g., Kim, 1998), or a diphthong (e.g., Kim & Kim, 1991). Others analyze its acoustic characteristics: a brief F2 steady state, for example, is used to characterize /j/ as part of a complex segment (Suh & Hwang, 2016). However, the same acoustic evidence might also support a diphthongal formation as the acoustic form often obscures the temporal relations of the actual articulatory gestures involved. We therefore directly examine temporal realizations of articulatory gestures. Shaw et al. (2021) hypothesized that complex segments differ from segment sequences in terms of how constituent articulatory gestures are coordinated in time. In particular, complex segments and segment sequences differ as follows: (a) Complex segments: The onset of the second gesture is timed to the onset of the first gesture. (b) Segment sequences: The onset of the second gesture is timed to the offset of the first gesture. Shaw et al. (2021) showed that for a complex segment, C-/j/ gestures are indeed timed together, so that their onset-to-onset lag is much less influenced by variation in C duration (Fig. 1a). In contrast, for a segment sequence, timing of /j/-onset relative to C-onset (onset-to-onset lag) is positively correlated with C duration: The longer the C, the later the /j/-onset occurs, showing a sequential coordination. We adopt this approach to examine /C/-/j/ gestural coordination in /mjV/, compared to the reference case of /mV/ gestures assumed to be timed simultaneously. The goal of this study is to understand the nature of glides in Korean by examining the temporal coordination of /mj/ in comparison to /mi/ (CV) as a baseline, which will, in turn, inform whether /j/ forms a complex segment or a segment sequence.

EMA data from 22 Seoul speakers (12 female, M_{Age}=23.9; from the K-DAD corpus by HIPCS) were analyzed with /mj/ produced in nine words (e.g., /la**mj**ʌne/) and /mi/ in seven words (e.g., /ma**mi**ne/), where the vowel preceding the target sequences is controlled as a /a/ vowel. The target sequences are produced in an accentual phrase (AP) medial positions within a phrase. Each token was repeated twice and at different speaking rates (normal/fast), facilitating the analysis of intergestural timing within temporal variation. The tongue blade sensor and the Lip Aperture (of the upper and lower lips) were used to identify /j/-gesture (or /i/-gesture) and /m/-gesture , respectively. Temporal landmarks were detected using the *findgest* function in Mview (Tiede, 2005). The temporal intervals for analysis include **G_1-DUR**(G_1release-G_1onset), **G_1ONS-TO-G_2ONS LAG** (G_2onset-G_1onset), and **G_1REL-TO-G_2ONS LAG** (G_1release-G_2onset) (G_1=/m/, G_2=/j/ or /i/).

In the results, /m/+/j/ displays a significantly longer G_1ONS-TO-G_2ONS LAG, compared to the reference /mi/ (est.=18ms, $t = 6.27$, $p < 0.001$). This finding suggests that /mj/ in Korean might not be best characterized as a CV sequence. If it were, we would expect to see the same simultaneous timing

observed for /mi/. However, G_1REL-TO-G_2ONS LAG for /mj/ does not differ from that for /mi/, indicating that /m/ and /j/ gestures are not clearly sequential, just like those of /mi/. The relationship between G_1-DUR and G_1ONS-TO-G_2ONS LAG (Fig.2) indeed shows nearly flat regression lines for both /mj/ and /mi/. This indicates that variations in G_1-DUR have a minimal impact on the onset-to-onset timing, akin to the complex segment account (Fig.1a) There is, however, interspeaker variation: Some participants (F09, F11, F15, M02, M07, and M15) exhibit patterns consistent with the segment-sequence account (Fig. 1b) for /mj/, while the others show patterns aligned with the complex-segment account (Fig. 1a) for both /mj/ and /mi/. Importantly, /m/+/j/ timing patterns showed more interspeaker variation than /mi/ timing.

In sum, / the onset lag is consistently longer for /mj/ than for /mi, but not to the extent of full sequential coordination. The lagged onset of /j/ further indicates that it is not part of a diphthongal vowel, as its timing would otherwise be similar to that of the vowel /i/. The leftward shift, instead, is in line with the C-center effect observable with onset consonant clusters (e.g., Brunner et al., 2014). The results imply that the surface timing of the C+glide gestures is not as invariant as the phonologically specified gestural coordination would predict. This variation seems to accommodate the phonotactics that imposes temporal constraints on the onset (typically a singleton C but two Cs only with a glide overlapping with C1), reflecting the range of coarticulation permissible in the phonetic grammar of the language.

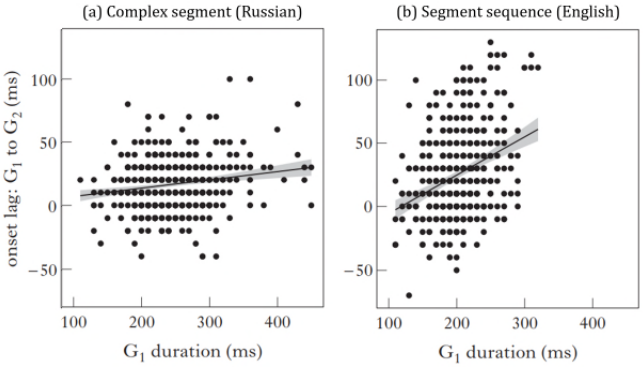

Fig. 1. A scatter plot of G1 duration (x-axis) against G1onset-to-G2onset lag (y-axis) in Russian (a), and English (b) (adapted from Shaw et al., 2021, p. 464).

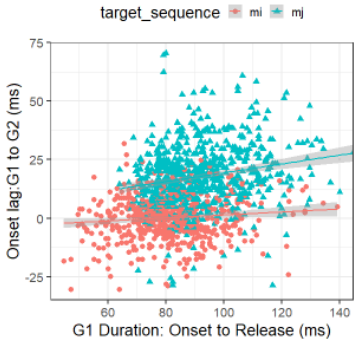

Fig. 2. A scatter plot of G1 duration [G_1onset to G_1release] (x-axis) against G1onset-to-G2onset lag (y-axis) for Korean /mj/ (in red) and /mi/ (in blue). (G1=/m/, G2=/j/ or /i/)

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Wh-Extraction across *Wh*-Islands in English Control Constructions

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Adopting Newman (2024), we show that a movement-based approach to obligatory control (OC) is possible without inducing improper movement. The empirical support for this claim comes from extraction across *wh*-islands in combination with (non-)OC constructions in English (see Barrie 2007). We further show that our analysis has implications for the asymmetry between *wh*-argument and *wh*-adjunct extractions–an issue that Hicks (2009) raises in response to Barrie's (2007) proposal.

Wh-movement is possible in English control constructions, as in (1). Extraction across *wh*-islands is also possible in certain cases, as in (2) (see Manzini 1992).

(1) John knows **when** to wash the dishes.
(2) **What kind of car** does John know **how** to park?

Not all instances of control, however, allow extraction across *wh*-islands, as shown in (3).

(3) ***What** does John know **when** to wash?

Based on this empirical picture, Barrie (2007) argues that extraction across *wh*-islands is possible in NOC (2) but not in OC (3). In order to account for this difference, Barrie analyzes OC under a movement-based approach (see Hornstein 1999, 2001) and NOC under a non-movement-based approach using generic *pro*. Barrie's derivations for (1)–(3) are provided below. Crucially, the difference between (2) and (3) boils down to whether or not *John* undergoes movement from the embedded clause to the matrix clause.

(4) John$_1$ knows [FinP ~~John$_1$~~ [WhP when [IP ~~John$_1$~~ to wash the dishes]]]
(5) What kind of car$_2$ does John know [FinP ~~what kind of car$_2$~~ [WhP how [IP *pro*$_{GEN}$ to park ~~what kind of car$_2$~~]]]
(6) *What$_2$ does John$_1$ know [FinP ~~John$_1$~~ [WhP when [IP ~~John$_1$~~ to wash ~~what$_2$~~]]] (Barrie 2007:278)

First, we highlight that there is a clear distinction between OC and NOC. The OC and NOC use of the predicate *know* is evidenced by the fact that the anaphor in the embedded clause can be realized as either *herself* or *oneself*, as shown below.

(7) Mary knows how to defend herself against killer bees. (OC)
(8) Mary knows how to defend oneself against killer bees. (NOC, Barrie 2007:266)

Additionally, OC is compatible with progressive aspect whereas NOC is not:

(9) John knows where to be standing at 6 pm. (OC)
(10) *John knows where to be getting good cheese. (NOC, Barrie 2007:268)

Evidence from multiple sluicing also adds weight to the distinction made between OC and NOC. Multiple sluicing is subject to a clausemate condition. All remnants of multiple sluicing have to originate in the same clause (Fox and Pesetsky 2005). Raising (11) and OC (12) license multiple sluicing of the matrix subject and the embedded object.

(11) a. A certain boy appears to have talked to a certain girl.
b. I forget which boy to which girl. (Raising, Barrie 2007:275)

(12) a. A certain dignitary knows how to introduce himself to a certain monarch.

b. I forget which dignitary to which monarch. (OC, Barrie 2007:270)

NOC (13), on the other hand, does not license multiple sluicing.

(13) a. A certain dignitary knows how to introduce oneself to a certain monarch.
b. *I forget which dignitary to which monarch. (NOC, Barrie 2007:270)

(11)–(13) show that raising and OC can be grouped together to the exclusion of NOC, which aligns with Hornstein's (1999) view of raising and control.

Let us now circle back to the analysis presented in (4)–(6). Under close inspection, Spec,FinP in (4) seems to participate in A-movement whereas Spec,FinP in (5) appears to participate in A'-movement. A question arises as to what the nature of Spec,FinP is. Is it an A-position or an A'-position? Hicks (2009) point out that the analysis provided in (4)–(6) runs the risk of inducing improper movement (movement from an A'-position to an A-position).

In order to address this issue, we employ Newman's probing mechanism where syntactic positions (e.g., Spec,FinP) themselves do not define A/A'-properties (see van Urk 2015, a. o.). We show that a composite probe (e.g., Fin of FinP) hosting both an A-feature (e.g., [·D·]) and an A'-feature (e.g., [·WH·]) accounts for the empirical facts given in (1)–(3) without devastating the ban on improper movement. Following Newman, we assume that there is no fixed ordering of [·D·] and [·WH·] features when it comes to probing. Newman's (2024) way of coupling together A- and A'-features on a single head addresses the question surrounding improper movement in English control constructions. Based on our composite A/A' probe analysis, A- and A'-properties are not tied with syntactic positions (e.g., Spec,TP and Spec,CP). We further demonstrate that the discrepancy between *wh*-argument and *wh*-adjunct extraction raised by Hicks (2009) largely boils down to how many features can be checked off on a single head. Because *wh*-arguments check off more features than *wh*-adjuncts, the former is preferred over the latter.

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A Comprehensive Analysis of Postsyntactic Feature Copying in Korean

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The aim of this paper is to show a comprehensive analysis of Korean in terms of Distributed Morphology (Halle and Marantz 1993) and Minimalist Syntax (Chomsky 1995) focusing on one of the postsyntactic operations Feature Copying (Halle and Marantz 1993, Chung 2009). This paper argues that the mechanisms of Feature Copying can differ depending on features it is applied to. It further suggests that the postsyntactic operations may occur more than once in a phase. This study examines the following phenomena in Korean: the realization of the suppletive honorific exponents of verbs, the honorific marker, and the non-nominal plural. The analyses on the honorification and the insertion of the non-nominal plural marker reveal that the structural conditions for Feature Copying may vary: [+hon] is copied under a Spec-Head relation; [+pl], on the other hand, is copied on (every) heads (X^0) within its c-commanding domain.

To analyze the honorific verbal suppletion, this study adopts double-nominative √EXIST constructions. It follows Kim and Chung's (2015) proposal that Feature Copying of the abstract honorific feature [+hon] occurs under a Spec-Head agreement between [+hon]-bearing licensors and their targets. Choi and Harley's (2019) proposal that a single abstract feature may be copied multiple times but only once per phase is further incorporated. The insertion of the honorific marker can be accounted for via postsyntactic copying of [+hon] as well. For the analysis, this paper examines dative-nominative √EXIST. To investigate the insertion of the non-nominal plural marker, I adopt Park's (2020) proposal that the copying of the abstract plural feature [+pl] occurs within its c-commanding domain. It further suggests that Feature Copying applied to [+pl] may occur multiple times within a single phase, as opposed to Choi and Harley (ibid.), and that the number of copies is unlimited.

The data selected for this research are illustrated bellow. The honorific suppletive exponent of the verb root √EXIST, which is /kyey/, is inserted when a noun phrase that requires honorification appears as in (1b). Otherwise, the default non-honorific exponent is selected as in (1a).

(1) a. yenghuy-ka pang-ey iss-ta
Younghee-NOM room-LOC exist-DEC
'Younghee is in the room.'
b. sensayngnim-kkeyse pang-ey kyey-si-ta.
teacher-NOM.HON room-LOC exist.HON-HON-DEC
'The teacher is in the room.'

In double-nominative √EXIST constructions, however, the existence of a noun phrase requiring honorification does not guarantee the occurrence of the honorific suppletion. As illustrated in (2b), the honorific exponent is selected only when the lower or the second nominative-marked noun phrase needs honorification. The honorification of the higher or the first nominative-marked noun phrase appears to be marked by the insertion of the honorific marker.

(2) a. sensayngnim-kkeyse ton-i iss-usi-ta.
teacher-NOM.HON money-NOM exist-HON-DEC
'The teacher has money.'
b. yenghuy-ka emma-ka kyey-si-ta.
Younghee-NOM mom-NOM exist.HON-HON-DEC
'Younghee has a mom.'

This paper deals with this discrepancy along with the negative suppletive exponent of √EXIST /eps/ based on Feature Copying and the syntax of the double-nominative √EXIST constructions.

The insertion of the honorific marker whose exponent /si/ is explicated by analyzing dative-nominative √EXIST constructions given in (3) - (5). The honorific marker is not inserted in (3) even though Prof. Kim is normally honorified due to its locational connotation. When such constructions

present an alienable possessive meaning as in (4), the honorific marker may appear as opposed to what Choi and Harley (ibid.) argue. In (5), the dative-nominative √EXIST constructions of an inalienable possessive interpretation, the insertion of the honorific marker is rather obligatory.

(3) Kim kyoswunim-kkey yelsoy-ka iss-ta. (locational)
Prof. Kim-LOC.HON key-NOM exist-DEC
'A key is with Prof. Kim.'

(4) Choy hoycangnim-kkey yothu-ka iss-(usi)-ta. (Alienable possessive)
Chairman Choi-LOC.HON yacht-NOM exist-(HON)-DEC
'Chairman Choi has a yacht.'

(5) O paksanim-kkey kkwum-i iss-usi-ta. (Inalienable possessive)
Dr. Oh-LOC.HON dream-NOM exist-HON-DEC
'Dr. Oh has a dream.'

The contrasts observed in dative-nominative √EXIST constructions with three distinct interpretations are explained in terms of Feature Copying of [+hon] and distinct underlying structures of such constructions.

This paper further deals with the appearance of the non-nominal plural marker /tul/ (Kim 2005). Sentence (4) marks every possible location where the non-nominal plural may appear.

(4) ai-tul-i nolithe-eyse(-tul) nolta-ka(-tul) pi(-tul)-(l)ul(-tul)
kid-PL-NOM playground-LOC(-PL) play-DEL(-PL) rain(-PL)-ACC
mac-ass-e(-tul).
hit-PST-DEC(-PL)
'The kids got rained on while playing at the playground.'

The distributive behavior of the non-nominal plural is accounted for, again, by adopting the feature copying of [+pl]. The appearance of the non-nominal plural shows that Feature Copying may take place more than once for a phase.

The overall discussion in this dissertation is summarized as follows. This study has delved into the multiple agreement of a single morphosyntactic feature in Korean. Various linguistic data has been adopted in this study: honorific verbal suppletion with a particular focus on the verb root √EXIST, the honorific marker *-si*, and the non-nominal plural marker *-tul*. Built upon the multiple appearance and optional nature of earlier mentioned phenomena, Distributed Morphology was adopted as a theoretical framework; more specifically postsyntactic Feature Copying was actively employed in the analysis.

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언어 모델의 신조어 자동 번역 성능에 대한 연구: 한국어-영어/독일어 번역을 중심으로

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자동 번역(Machine Translation, MT)은 언어 장벽을 해소하고 글로벌 커뮤니케이션을 촉진하는 핵심 기술로 발전해왔다. 특히 신경망 자동 번역(Neural Machine Translation, NMT)의 등장으로 번역 품질은 크게 향상되었으며, 통계 기반 번역 모델에 비해 오류를 현저히 줄이는 성과를 보였다 (Wu et al. 2016; Johnson et al. 2017). 그러나 NMT 모델은 고정된 훈련 데이터를 기반으로 하기 때문에 새로운 표현이 등장할 때마다 모델을 재훈련해야 하는 어려움이 있다 (Koehn & Knowles 2017).

NMT의 언어 모델이 번역에 특화되어 학습되어 있는 것과 달리 대규모 언어 모델(Large Language Model, LLM)은 특정 태스크에 특화된 것이 아니라 범용적인 언어 모델로 설계되었다. 하지만 최근에는 LLM을 활용한 번역 연구 또한 활발히 진행되고 있다. LLM은 문맥 해석 능력과 패러프레이징 능력에서 강점을 보이기에 (Raunak et al. 2023; Hendy et al. 2023) 유연하고 의미적으로 자연스러운 번역을 생성할 가능성을 보여준다. LLM의 발전은 기존의 NMT 시스템의 한계를 보완할 가능성을 시사하지만, 두 AI 언어 모델 간의 성능 차이가 명확히 검증되지는 않았다.

신조어와 같이 창의적이고 빠르게 변화하는 언어적 요소가 포함된 문장에 대한 번역은 사람 번역가에게도 난이도가 높은 번역 유형에 속하기 때문에 NMT와 LLM을 활용한 자동 번역에서도 이것은 처리가 어려운 영역으로 평가된다. Zheng et al. (2024)의 연구에 따르면 영어 신조어가 포함된 문장의 경우에 구글 번역기나 DeepL과 같은 주요 상용 NMT 뿐만 아니라 LLM 역시 의미를 충분히 반영하지 못하거나 직역하는 오류가 빈번히 나타났다.

한국어 신조어의 경우 구조적으로 접두·접미파생어, 한자어, 외래어, 고유어 조합의 합성어, 영어와의 혼성어, 축약어 등 다양한 형태를 포함하며, 이러한 복잡한 언어 구조는 번역의 난이도를 높이는 요인 중 하나일 것으로 예상된다. 따라서 한국어 신조어가 포함된 문장을 번역하는 것은 상당한 번역 난제를 제시할 수 있음에도 불구하고 지금까지 한국어 신조어를 대상으로 한 번역 성능 평가 연구는 거의 이루어지지 않았다.

이에 본 연구는 한국어 신조어가 포함된 문장을 영어와 독일어로 번역할 때의 NMT와 LLM의 성능을 비교 및 분석하고자 한다. 이 때 AI-Hub에서 제공하는 「연령대별 특징적 발화(은어, 속어 등) 음성 데이터」 전사 자료를 활용하여 한국어 신조어 문장을 추출하고, 이를 영어와 독일어로 자동 번역하는 과정을 설계하였다. 자동 번역시 구글 번역기, DeepL, 네이버 파파고와 같은 대표적인 NMT 시스템과 GPT, Gemini, Claude와 같은 LLM을 활용하여 번역문을 생성하였다. 그 이후에 신조어 유형과 구조에 따른 NMT와 LLM의 번역 전략 및 번역 오류 패턴을 언어학적으로 심층 분석하여, 신조어가 포함된 문장을 자동 번역할 때의 각 AI 언어 모델의 강점과 한계를 규명한다. 본 연구의 결과는 향후 NMT나 LLM을 활용한 자동 번역에서 번역 난이도가 높은 언어 현상과 언어쌍을 보다 효과적으로 처리하기 위한 방향성을 제시할 수 있을 것으로 기대된다.

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Exploring Multimodal Perception in Large Language Models Through Perceptual Strength Ratings

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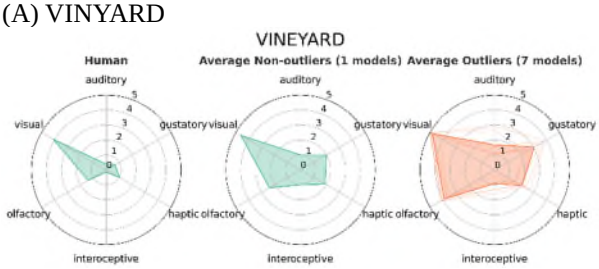
Embodiment theories propose that human language understanding is grounded in sensory and motor experiences, with comprehension involving the simulation of perceptual experiences associated with linguistic concepts (Barsalou, 2008; Bergen, 2012). This perspective has highlighted concerns about large language models (LLMs), which face criticism for lacking grounding—their language understanding remains disconnected from real-world sensory experiences (Bender & Koller, 2020; Bisk et al., 202). While recent multimodal integration attempts to address this limitation by incorporating visual and auditory inputs (Driess et al., 2023; Huang et al., 2023), fundamental questions persist about whether such approaches achieve genuine sensory grounding or merely provide more efficient access to distributional information already available through text.

To investigate these questions, we examined how model characteristics (size, multimodal capabilities, architectural generation) influence grounding performance and how models compare to human embodied cognition by evaluating their ability to provide perceptual strength ratings for words across six sensory modalities. We tested 21 models from four families (GPT, Gemini, LLaMA, Qwen) on 3,611 words from the Lancaster Sensorimotor Norms (Lynott et al., 2020), employing quantitative model comparisons and qualitative analysis of systematic divergences.

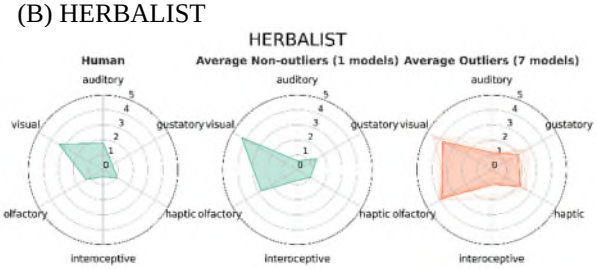
Results revealed that larger models, multimodal architectures, and newer generations generally outperformed their smaller, text-based, older counterparts across model comparisons. More importantly, multimodality improved performance with some smaller multimodal models outperforming larger text-only counterparts. However, these gains occurred across sensory dimensions unrelated to their training inputs, and massive text-only models achieved comparable results. This might suggest multimodality provides information density rather than qualitatively different sensory information. When compared to humans, top-performing models achieved substantial similarity (Table 1), with 85-90% accuracy and strong correlations (0.58-0.65) with human ratings. However, qualitative analysis revealed systematic processing differences despite this overall alignment: models exhibited multisensory overrating, relied on loose semantic associations rather than experiential evaluation, and showed definition-based rather than experience-based reasoning patterns (Figure 1). These findings indicate that while advanced LLMs can closely approximate human sensory-linguistic associations, they may employ different processing mechanisms, raising questions about whether current multimodal approaches achieve genuine embodied grounding.

* Complete results, figures, and statistical details can be accessed at https://osf.io/9qgek/.)

(A) VINYARD



(B) HERBALIST



(C) NOSTRIL

(D) SALINE

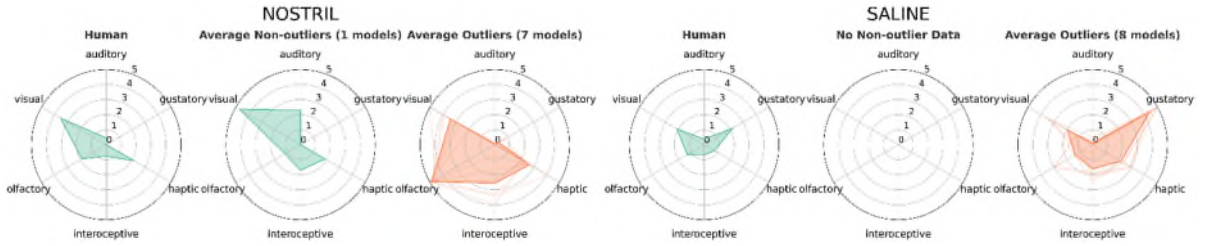


Figure 1. Selected radar charts representing average ratings across sensory modalities for outliers: (a) VINEYARD, (b) HERBALIST, (c) NOSTRIL, (d) SALINE. The charts depict ratings for auditory, gustatory, haptic, interoceptive, olfactory, and visual senses, arranged clockwise starting from auditory. Each word shows three panels: humas (left), non-outlier model average (center), and outlier model average (right; faint lines represent individual model evaluations). Scale ranges from 0 (center) to 5 (outer ring).

		Correlation							Dist.
		A	G	H	I	O	V	Mean	
GPT	4	0.713*	0.474	0.697*	0.660*	0.574	0.690	0.048*	0.635*
	4o	0.694*	0.479	0.604*	0.725*	0.575*	0.439*	0.056*	0.586*
	4.1	0.659*	0.493*	0.643*	0.767*	0.564	0.692	0.058*	0.636*
Gemini	2.5-Flash	0.709*	0.498*	0.577*	0.698	0.576	0.648*	0.053*	0.618*
	2.5-Pro	0.676*	0.469	0.611*	0.608*	0.527	0.605*	0.053*	0.583*
LLaMA	3.2-90B-Vision	0.684*	0.408*	0.630*	0.699	0.527	0.638*	0.057*	0.598*
	3.1-405B	0.734*	0.479	0.644*	0.673*	0.569	0.624*	0.059*	0.621*
	4-Maverick-17B	0.695*	0.492*	0.717*	0.714	0.580*	0.676*	0.052*	0.646*
Models		0.696*	0.474	0.640*	0.693*	0.562	0.626*	0.615*	0.054*
Human		0.781	0.474	0.757	0.707	0.562	0.696	0.663	0.033

Table 1. Correlation between representative model and human ratings across sensory modalities. A = Auditory, G = Gustatory, H = Haptic, I = Interoceptive, O = Olfactory, V = Visual, Dist. = Mean cosine distance between model and human ratings across all words. 'Human' represents the average inter-rater correlation/distance among human evaluators. 'Models' represents the mean of individual model-human correlations. Asterisks (*) indicate significant differences between the model and human inter-rater correlations/distance, determined by a permutation test ($p<0.05$). Colour coding indicates the direction of difference: red shades represent correlations lower than human inter-rater baseline, while blue shades represent correlations higher than human inter-rater baseline. Darker colours indicate larger magnitude differences from the human benchmark.

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LSK/KGGC/PMCK Sessions

2000년대 이후 국내 음운론 연구의 동향에 대하여
- 연구논문 초록의 텍스트마이닝 기반 분석 -

박선우
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본 연구에서는 한국연구재단의 등재지 데이터베이스로부터 추출한 연구논문의 메타데이터를 통하여 2000년대 이후 국내 음운론 연구의 동향을 분석해 보고자 한다. 연구논문들의 영문 초록을 분석함으로써 지난 사반세기 동안 이루어진 음운론 연구의 변화와 경향을 분석하고 앞으로 어떠한 연구가 이어질 것인지 예측하겠다.

한국어 음운론 연구는 지난 수십 년간 이론적·방법론적으로 큰 변화를 겪어왔다. 1980년대 생성음운론의 도입, 1990년대 최적성이론의 확산, 2000년대 이후 사용 기반 음운론과 실험음운론의 등장, 최근 머신러닝과 인공지능의 응용에 이르기까지 다양한 이론과 연구방법론들이 연구 동향에 영향을 미쳐 왔다. 본 연구에서는 음운론 연구 전반의 거시적 흐름을 파악하기 위하여 2000년 이후 한국연구재단 등재지에 게재된 음운론 관련 논문들의 초록을 대상으로 텍스트마이닝 기법을 적용하여 국내 음운론 연구의 동향과 변화 양상을 계량적 분석하고자 한다.

본 연구의 분석 대상은 한국연구재단 등재지에서 '음운론(phonology)'이라는 키워드로 검색된 총 783편의 논문이다. 이들 논문은 모두 2000년 이후에 출판된 것으로서 논문의 작성 언어와 상관없이 대부분 영문 초록을 포함하고 있다. 영문초록은 논문의 핵심 내용을 함축적으로 담고 있어 연구 동향 분석에 적합한 자료이다. 저자가 연구의 핵심을 요약한 텍스트이므로 연구 주제, 방법론, 주요 결과 등 연구의 내용과 특성을 파악하는 데 유용하다.

연구 방법으로는 783편의 영문 초록에 대한 포괄적 텍스트마이닝을 실시한다. 첫 번째 분석 방법인 주요 명사 단어의 빈도 분석을 통해서는 음운론 연구에서 사용되는 핵심 용어들의 출현 빈도를 계산하고, 연도별 변화 추이를 추적한다. 이를 통해 특정 시기에 주목받은 연구 주제나 이론적 관심사의 변화를 객관적으로 확인할 수 있다. 또한 단어 빈도의 시계열 분석을 통해 음운론 연구의 트렌드 변화와 새로운 연구 영역의 등장 시점을 파악할 수 있다.

두 번째 분석 방법인 텍스트 네트워크 분석에서는 중요 단어들의 중심성 분석을 통해 음운론 연구의 핵심 개념들을 식별한다. 연결중심성, 매개중심성, 고유벡터중심성 등의 지표를 활용하여 음운론 연구에서 가장 중요한 역할을 하는 개념들을 파악하고, 이들이 시간에 따라 어떻게 변화하는지 추적한다. 또한 연관 단어들 사이의 파이 계수 분석을 통해 단어 간의 연관성 강도를 정량적으로 측정하여 음운론 연구 내에서 개념들 간의 관계 구조를 시각화한다. 네트워크 분석은 연구 분야의 지식 체계를 이해하고 핵심 개념들 간의 상호작용 패턴을 규명하는 통찰을 제공할 수 있다.

세 번째 분석 방법인 LDA 토픽 모델링을 통해서는 783편의 논문에 잠재되어 있는 주요 연구 주제들을 자동으로 추출한다. 이 방법은 대량의 텍스트에서 숨겨진 주제 구조를 발견하는 데 효과적이며, 연구자의 주관적 판단을 배제하고 데이터 기반의 객관적 주제 분류를 가능하게 한다. 이를 통해 개별 논문의 미시적 내용을 넘어서 음운론 연구 전반의 거시적인 연구 주제들을 체계적으로 분석할 수 있으며, 국내 음운론 연구의 전체적인 주제 지형을 객관적으로 파악할 수 있을 것이다.

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뇌출혈 환자 발화에서 나타나는 음운론적 유표성

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특정 언어 요소가 상대적으로 더 복잡하거나 덜 일반적인 성질을 지닌다는 점을 설명하는 유표성 원리는 제1·제2언어 습득, 신경언어장애의 음운 오류에 영향을 미친다고 알려져 있으나(Blumstein 1973; Eckman 1977; Ladefoged & Maddieson 1990) 한국어에 대해서는 이에 대한 연구가 상대적으로 부족한 실정이다. 이 연구는 인간 언어에서 나타나는 다양한 음운론적 유표성 제약이 뇌출혈 환자의 구음장애 발화에서 어떻게 발현되는지 대용량 음성 데이터 분석을 통해 알아보고 유표성 원리가 신경언어장애에서의 음운 오류에 어떤 영향을 미치는지 알아보는 것을 목적으로 한다.

본 연구의 분석 대상이 되는 데이터베이스는 AI 허브를 통해 공개되고 있는 '구음장애인 명령어 데이터'로, 구음장애인 발화의 자동음성인식률 향상을 목적으로 여러 구음장애를 가진 한국어 화자들이 다양한 주제의 명령어 또는 질문을 대본을 보고 읽은 것을 녹음하고 전사한 데이터이다. 그 중 본 연구에서는 전체 뇌출혈 환자의 발화의 전사 파일을 대상으로 분석을 진행하였는데, 이는 총 3명의 화자가 발화한 1,564개 명령어(8,022개 단어)를 포함한다. 전체 데이터 중 음운 오류는 약 27%에 해당하는 단어에서 발생하였다. 대표적인 음운 오류와 관련 음운론적 유표성은 아래와 같다.

1. 음절말음 위치에서의 오류율이 음절두음에서보다 높게 나타났는데, 이는 음절 구조 내에서 말음 위치가 보편적으로 약하게 허용된다는 유표성 제약과 일치한다. 특히 자음 탈락의 경우 음절말음 위치에서 두드러지게 나타났다.

2. 자음의 조음 위치와 관련해서 다양한 자음들이 치경음으로 대치되는 경향이 확인되었고(예: '줘' → '둬'), 치경음은 삽입(예: '안내' → '담내')의 주요 대상으로도 나타났다. 반면 탈락(예: '어디지' → '어이지')의 대상으로 나타난 비율은 가장 낮아, 전반적으로 치경음을 유지하려는 경향이 나타났다. 이는 조음 위치에 따른 유표성 위계에서 설정음이 연구개음이나 순음에 비해 무표적으로 가장 낮은 위계에 위치한 것을 반영한다.

3. 자음의 조음 방법과 관련해서 음절두음에서는 파찰음이 가장 흔히 다른 조음 방법의 소리로 대치되었는데(예: '토스터' → '뽀스따'), 이는 복합적 자질을 요구하는 조음 범주로서 구조적 복잡성이 높은 음들이 뇌출혈 환자 발화에서도 취약함을 나타낸다.

4. 저해음의 발성 유형에 있어서는 평음이 가장 안정적으로 산출되었고 격음이 가장 다른 소리로 많이 대치되어(예: '취침' → '집짐'), 격음이 평음보다 유표적인 보편적 위계를 반영하고 있다. 반면 대치의 결과는 경음으로 많이 나타났는데, 이는 언어습득에서 나타나는 패턴과 일맥상통하다.

5. 모음에서는 평순 고모음인 /ɯ/와 /i/만이 탈락(예: '어음' → '엄')과 삽입(예: '재활' → '재화리')의 대상이 되었으며, 모음 삽입은 어말 폐음절의 말음 뒤에 모음이 삽입되어 더 무표적인 개음절을 형성하는 양상을 보였다. 이는 제2언어습득에서 나타나는 패턴과 유사하고, 언어 보편적으로 고모음이 저모음보다 유표적인 경향과 일치하며 한국어 모음 체계에서 이들 모음이 지각적 변별성과 조음적 안정성이 낮은 주변적 위치에 있음을 시사한다.

이러한 결과는 뇌손상으로 인한 산출 장애 상황에서도 발화 오류가 단순한 무작위적 산출 실패의 결과로 나타나는 것이 아니라 언어 보편적인 유표성 위계에 의해 제약되는 것을 의미한다. 특히 최적성이론과 같은 제약 기반 이론의 관점에서 다양한 유표성

제약들이 상호작용하면서 나타나는 체계적인 오류 패턴은 음운론적 유표성의 인지적 실재성을 뒷받침함과 동시에 임상 음운 연구에서의 설명력을 강화한다고 할 수 있다.

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한국어에 음운적으로 가까운 어족들은?

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전 세계 언어들 중 한국어를 닮은 언어들은 무엇이 있을까? 유형론적으로 한국어에 비슷한 언어들로 일본어족, 퉁구스어족, 몽골어족, 튀르크어족, 우랄어족 등의 언어들이 제시된 바 있다. 주이안(朱易安 Joo, Ian)은 허우윤(許又尹 Hsu, Yu-Yin)과 함께 세계 언어 음소배열정보 데이터베이스인 포노택티콘 (Joo & Hsu 2025)을 구축하여, 335 가지 유라시아 제어 사이 간 음운적 유사도를 양적으로 측정하고 음운적으로 비슷한 언어들의 유라시아 대륙 내 지역적 분포를 가시화한 바 있다 (Joo & Hsu under review). 본 발표에서는 이 중 한국어와 기타 유라시아 어족 사이의 음운적 유사도에 주목하기로 한다. 일단, 각 어족 간 샘플 언어 개수가 크게 차이나므로 (샘플 언어가 홋카이도 아이누어 단 하나뿐인 아이누어족과 샘플언어가 63 가지나 있는 인도유럽어족 등), 단순히 한국어와 음운적 유사도가 높은 언어들을 순차적으로 나열하면 언어 개수가 많은 어족들에게 결과가 편중된다는 문제점이 있다. 그러므로 개별 언어에 주목하기보다는, 335 개 샘플 언어 중 어족 별로 각 언어의 한국어에 유사한 순위 값을 합산하여 그 중간값을 계산하여 순위를 매기기로 한다. 결과는 (한국어족을 제외하면) 퉁구스어족이 제일 유사하고 (중간값 20.5), 그 다음으로는 대(大)안다만어족 (38), 우랄어족 (58), 몽골거란어족 (71.5), 아이누어족 (72), 남도어족 (76), 자라와옹게어족 (77), 축치캄차카어족 (95), 유카기르어족 (101), 에스키모알류트어족 (108)이 유사성을 보였다. 제일 닮지 않은 어족은 카르트벨리어족 (328)이었다. 일본어족 (235)과의 유사성은 크지 않았다. 제일 유사한 열 가지 어족들 중 안다만 제도에 위치한 대안다만어족과 자라와옹게어족, 그리고 남태평양에 위치한 남도어족을 제외하면 모두 유라시아 북단에서 쓰이는 어족임에 주목하라. 즉 음운적 측면에서 보았을 때 한국어는 유라시아 최북부 어족들과 가장 유사한 언어라고 할 수 있다. 본 발표에서는 나아가 구체적으로 어떠한 측면에서 한국어가 유라시아 북단 어족들과 음운적으로 유사한지 질적으로 관측하는 시간도 가져보고자 한다.

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Response Systems and the Role of Antecedents: Evidence from Interrogatives with *Can* and *Could*

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When we ask a question with a modal verb such as *can* or *could*, the answer seems, at first glance, straightforward. In actual discourse, however, the same response marker can serve very different functions.

(1) A: Can you walk okay in those shoes?
B: Yes. (SOAP 2010 OLTL)
(2) A: Can you pass me one of the blankets, please?
B: Yes. (COCA 2018 MOV)

In (1), the response *yes* confirms the speaker's ability to walk okay, functioning as a truth-value answer. This *yes* can be interpreted as 'I can walk okay in those shoes.' In (2), however, *yes* does not describe ability at all. It signals compliance with a request, functioning as an utterance of speech act. It cannot be interpreted as '#I can pass you one of the blankets.' Thus, the superficial form of the interrogative and the response marker are identical, but their interpretations diverge sharply.

The response markers such as *yes* or *no* have typically been analyzed as particles encoding propositional polarity, especially in polar questions (Barton 1990, Stainton 1993, 2006: Holmberg 2001, 2015; Kramer & Rawlins 2010; Krifka, 2013; Roelofsen & Farkas, 2015; Tian & Ginzburg 2016). These markers do not denote referential entities but rather function at a propositional level, signaling affirmation or denial of a preceding utterance, as in (3) and (4).

(3) A: Did you read the book? (COCA 2007 SPOK)
B: Yes. (= Yes, I read the book)
(4) A: Are you coming to the meeting? (COCA 2018 MOV)
B: No. (= No, I am not going to the meeting)

The response *yes* in (3) does not refer to any tangible entity or object, and instead it affirms the proposition 'I read the book.' The response no in (4) expresses the negation of the proposition 'I am going to the meeting.' In both cases, *yes* and *no* function as propositional operators, signaling affirmation or negation of the speech act, not as nominals or referential expressions. Specifically, the particle *yes* in (3) can be understood as 'Yes, I read the book', while the particle *no* in (4) can be interpreted as 'No, I am not going to the meeting'. Here, the polarity particles serve as a syntactic substitute for a full clause.

While the propositional account captures the fundamental role of *yes* and *no* as polarity markers, it falls short of explaining their behavior in modal interrogatives. As illustrated in (1) and (2), the same response marker may affirm propositional content in one context but signal compliance with a request in another. Such variation cannot be accounted for if *yes* and *no* are treated solely as operators of affirmation or denial. The present study addresses this gap by extending the analysis of polarity particles to responses in interrogatives with modal verbs, focusing on interrogatives with *can* and *could*. It argues that the interpretation of these responses is shaped by their antecedent context, revealing that response markers are not merely propositional devices but constructional elements whose meaning emerges from the interaction of form, discourse, and speaker intention.

The primary goal of this study is to examine the response systems of interrogatives with modal verbs by investigating how they are influenced by their antecedents, with particular attention to interrogatives with *can* and *could*. In doing so, the study provides evidence that antecedents play a crucial role in shaping response systems to *can*/*could* interrogatives, as demonstrated by the variation in how response markers are interpreted across constructional types. The investigation employs the collostructional analysis developed by Stefanowitsch & Gries (2003) within the framework of Construction Grammar

(CxG). The study thereby contributes to a more systematic understanding of the response systems of English interrogatives in CxG.

To this end, this study initially examines the distribution of response markers to the modal interrogatives through the corpus data, which enables us to identify the grammatical functions of response markers. This study subsequently investigates the grammatical functions of interrogatives with modals *can* and *could*. These two tasks allow us to explore the mismatching and matching linguistic behaviors between the interrogatives and their response markers.

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The locus of the [humble] feature in the first-person pronoun in Korean

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This study explores the precise locus of the [humble] feature in the first-person pronoun in Korean within the theoretical frameworks of Distributed Morphology (Halle & Marantz 1993) and Nanosyntax (Starke 2009; Caha 2021). The humble feature is expressed through the social status relationship between the speaker and the addressee. When the speaker is of a lower status than the addressee, the speaker uses *ce* 'I.HUM' to refer to themselves instead of *na* 'I'. In this context, the [hum] feature triggers the suppletive form *ce*, which is not related to the default form *na*. Given that the [hum] feature affects the root, this research explores the following questions:

1. How does the pragmatic feature [hum] influence the morpho-syntactic structure?
2. Can the locus of the [hum] feature be identified based on the Nano-syntactic approach?

Let us consider the following personal pronouns in Korean.

(1)

person		singular	plural
1st		na	wuli
	humble	ce	ce-**huy**
2nd		ne	ne-**huy**
3rd	archaic	ce	ce-**huy**

The regular plural suffix for the personal pronouns *-huy* attaches to the singular forms to make them plural. The suffix is realized independently, except in the case of *wuli* 'I.PL'. This phenomenon is analyzed as fusion within the DM framework, since two features are realized as a single exponent.

In previous literature, Shin & Chung (2025) examine the syntax-phonology asymmetry in Korean first-person pronouns by analyzing how forms with identical abstract features—such as [1st] and [pl]—yield distinct exponents depending on contextual factors, particularly the [hum] feature. While *wuli* 'I.PL' undergoes fusion, *ce-huy* 'I.HUM-PL' does not, despite sharing the same features, [1st] and [pl]. This discrepancy is attested by adopting Chung's (2009) revised fusion rule, which treats fusion as part of vocabulary insertion rather than as a fusion of abstract features. Under Chung's view, fusion arises between a vocabulary item inserted during the root cycle and in the next cycle, fusion targets the vocabulary item /na/ and the abstract feature [pl], not /ce/ and the [pl]; or [1st] and [pl]. This explains why fusion only occurs between /na/ and [pl], which yields /wuli/, while fusion is blocked in the humble context, where the [hum] feature conditions a suppletive form of the [1st] person root, that is to say, /ce/ and the plural suffix /huy/. This observation invites consideration of whether the [hum] feature can be introduced as a morpho-syntactic head within the clausal hierarchy, since the humble feature is not a morpho-syntactic element.

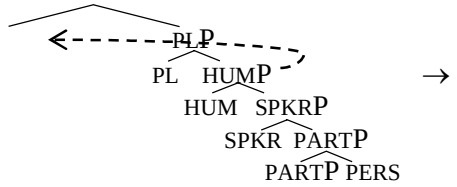
To explore this possibility and address question 1, I adopt the proposal by Speas & Tenny (2003), who posit that Speech Act Phrases (saP) occupy a syntactic position above the clausal domain. The saP layer hypothesis has been further supported and extended by Ritter & Wiltschko (2018; 2019; and 2024), Yim (2016), Lee & Kim (2018), and Lee (2020), who propose that the pragmatic feature may also project within the DP domain. I assume that the [hum] feature is originally realized as *-yo* at the end of the sentence (Yim 2016), and tentatively propose that this feature may be copied to sentence-medial nominal phrases and also within the KP domain through feature copying before vocabulary insertion (in DM terms) or before spell-out (in Nanosyntactic terms).

These findings establish the foundation for a detailed examination of the [hum] feature's syntactic position. Accordingly, this paper addresses question 2 by identifying its precise locus within the framework of Nanosyntax. Interestingly, Korean first-person pronoun in the humble environment, *ce-huy* 'I.HUM-PL' patterns similarly to those in Mandarin: *wǒ-men* 'I.PL', in that the plural forms realized as two separate lexical items. In contrast, the Korean first-person plural suppletive form *wuli* surfaces as a single morpheme in the absence of the humble feature, paralleling the English *we* 'I.PL'.

Nanosyntax provides an approach to target the phrasal level. Lexical items are inserted into syntactic structures if their stored tree matches a superset of the target, allowing for direct mapping from syntax to morphology without relying on postsyntactic operations, i.e., fusion. In other words, [PLP [PL] [SPKRP [SPKR] [PARTP [PART] [PERSON]]]][1] corresponds directly to the first-person plural form *wuli*, allowing for successful spellout in line with the Containment hypothesis, Superset Principle, and phrasal spell-out mechanisms (Starke 2009). In this structure, each morphosyntactic feature occupies its functional head, and vocabulary items may lexicalize spans of structure.

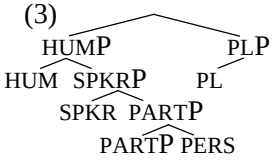
In cases where spell-out matching fails, such as with *wǒ-men* 'I.PL', the Spellout Algorithm (Caha 2021) functions as a rescue mechanism. Assuming the validity of the Spellout Algorithm, the Mandarin personal pronoun undergoes movement triggered by the [pl] feature for independent spellout. Adopting this analysis, the present study posits that the [pl] feature triggers movement in the Korean personal pronouns. These structures, adapted from Caha (2021), show the structure of the first-person plural pronoun in the humble environment.

(2)



→

(3)



In this environment, Korean first-person plural pronoun is realized as separate lexical items. In such case, the presence of the [pl] feature may induce movement and results in the spell-out of a distinct lexical item corresponding to the phrasal node, which is independently lexicalized, namely, *ce-huy* 'I.HUM-PL'. Given that Nanosyntax targets phrasal spell-out, the sequence of projections HUMP>SPRKP>PARTP is spelled out as /ce/, corresponding to the first-person singular form in the humble environment. When the PLP is present in the structure, the plural exponent /huy/ is spelled out. The single morpheme *wuli* does not require this rescue operation, as it contains the [pl] feature within a larger structure.

In this regard, this paper proposes that the [hum] feature may be structurally closer to the root than previously assumed. Specifically, by positioning the syntacticopragmatic feature right above the SPRKP and PARTP in a c-commanding position, the [hum] feature still maintains the locality condition with the root. This assumption does not violate prior assumptions regarding the structural adjacency required for contextual allomorphy but provides a more precise location for the [hum] feature, namely, right above the SPRKP node.

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[1] The abbreviations used for the features in this study are as follows: PERS (person), SPKR (speaker), and PART (participant), PL (plural) following the conventions adopted in Caha (2021), which builds on Vanden Wyngaerd (2018) (cf. Harley and Ritter 2002). Additionally, P stands for phrase, and HUMP refers to humble phrase.

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Diachronic Syntax and Chomsky's Third Factors: The Dream of the Rood

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The Dream of the Rood (Cross) was originally composed in Old English with heroic diction and Christian imagery, preserved in the *Vercelli Book* (10th century), though parts of it appear earlier as inscriptions on the *Ruthwell Cross* (8th century). Its poetic idiom reflects the highly inflected and synthetic character of Old English. This paper examines four major syntactic domains in *The Dream of the Rood* that exemplify the diachronic development of English into a more Present-day English system: (1) impersonals and the null-subject parameter, (2) pronouns functioning reflexively, (3) pre-modals, and (4) BE perfects. The central claim is that these changes are not arbitrary historical accidents but follow naturally from the Third Factors of Chomsky's Minimalist Program—general cognitive and computational principles such as Efficient Computation, Minimal Search, Determinacy, and Feature Economy (Chomsky 2005, 2022; Chomsky et al. 2019, 2023; van Gelderen 2022, 2024).

1) Impersonal constructions

Old English permits impersonal null-subject syntax, as in *Þūhte mē þæt* ('(it) appeared to me that'). PE, by contrast, requires an overt expletive subject: *It appeared to me that* …. This shift illustrates the elimination of optional null arguments. Under a Third Factor account, the change is motivated by **Efficient Computation**: silent expletives introduce unnecessary complexity for learners and parsers. The PE innovation of obligatory *it* reduces optionality, simplifies Minimal Search operations, and yields uniform clause structure.

2) Pronouns and reflexives

In Old English, personal pronouns could serve reflexive functions, as in *Onġyrede hine þā ġeong hæleð* ('stripped him[self] the young hero'). Present-day English requires dedicated reflexives: *The young hero stripped himself.* This innovation reflects the principle of **Determinacy**, which requires structural descriptions to yield unique interpretations. The Old English system was ambiguous between pronominal and reflexive readings, whereas PE reflexives guarantee unambiguous binding. The emergence of distinct reflexives thus reflects a universal pressure toward structural clarity rather than language-specific stipulation.

3) **Pre-modals and modals**

Old English pre-modals such as willan 'will', *magan* 'may', *sculan* 'shall', *durran* 'dare', and *cunnan* 'can' functioned as lexical verbs, fully inflected and combined with other verbs, as in *Hwæt, iċ swefna cyst secgan wylle…* ('Listen! The choicest of visions I wish (want) to tell …'). Present-day English has reanalyzed these as a closed set of modal auxiliaries with restricted morphology (*will, may, shall, must, can*). This development illustrates **Feature Economy**, whereby redundant morphological features are eliminated over time. The shift from fully inflected verbs to invariant auxiliaries reduced morphological load, streamlined agreement, and established a simpler functional category. This reanalysis also enhanced processing efficiency by minimizing feature complexity in clause structure from [volition, expectation, intention] to [future].

4) Perfect auxiliaries

Old English permitted BE as a perfect auxiliary, especially with unaccusatives, as in *Is nū sǣl cumen* ('Is now the time come'). PE, however, has standardized the HAVE-perfect: *Now the time has come.* This development reflects **Minimal Search** and **Feature Economy**. In Old English, learners had to acquire verb-specific auxiliary choice (BE vs. HAVE), a computationally costly system. Standardization on HAVE eliminated this split, simplifying auxiliary selection and yielding a more uniform grammar.

Taken together, these developments exemplify the **synthetic-to-analytic drift** of English: from the inflection-rich, flexible structures of Old English to the periphrastic, rigid structures of Present-day English. Crucially, these changes need not be explained by ad hoc historical rules. Instead, they emerge from general design conditions on language:

- **Efficient Computation** eliminates costly null elements.
- **Minimal Search** drives uniform auxiliary selection.
- **Determinacy** favors unambiguous reflexive forms.
- **Economy** reduces redundant morphology and streamlines functional categories.

By applying Third Factor principles of the Minimalist Program to diachronic syntax, this paper provides a theoretically principled account of English historical change. *The Dream of the Rood*, as both a literary masterpiece and a syntactic data source, serves as a microcosm of these developments. Its Old English constructions, contrasted with their Present-day English counterparts, demonstrate how language change is guided not only by internal grammatical mechanisms but also by broader cognitive and computational pressures. Thus, the diachronic trajectory of English is revealed as a natural outcome of universal language design rather than a sequence of arbitrary historical contingencies.

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Complementizers as cues to control: Evidence from Korean

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Since the introduction of control phenomena into generative linguistics, two major accounts have been proposed: Syntactic accounts (Chomsky & Lasnik 1977; Rosenbaum 1967) argues that when multiple potential antecedents are available, the antecedent of the empty subject Ø is identified as the closest c-commanding NP to the infinitival empty subject. In contrast, lexical-semantic accounts treat control as a lexical phenomenon determined by the inherent semantic properties of verb predicates (Culicover & Wilkins 1986; Sag & Pollard 1991). Despite extensive theoretical work, relatively little research has examined real-time processing of empty subjects in Korean control. Korean provides a unique testing ground because verb information is delayed until the sentence-final position (unlike SVO languages such as English), and its rich verb morphology allows various suffixes to attach to the embedded verb. Crucially, prior studies have noted that Korean control arises from the combination of a matrix control predicate and a specific embedded verb ending suffix (Yang 1984; Madigan 2008).

This study investigates whether such a combination is empirically attested and evaluates which of the two theoretical accounts better explains the interpretation of infinitival empty subjects, with a particular attention to the complementizers *-kilo* and *-tolok*. To this end, two experiments were conducted using timed and untimed tasks with a focus on Korean complement control constructions such as (1).

(1) a. John-i Mary-eykey [Ø cepsi-lul ssis-***kilo***] yaksokhae-ss-ta.
J.-NOM M.-DAT [Ø dish-ACC wash-COMP] promise-PST-DECL
'John promised Mary to wash the dishes.' **(subject-control; Ø = John)**

b. John-i Mary-eykey [Ø cepsi-lul ssis-***tolok***] myeongryeonghae-ss-ta.
J.-NOM M.-DAT [Ø dish-ACC wash-COMP] order-PST-DECL
'John ordered Mary to wash the dishes.' **(object-control; Ø = Mary)**

Method

Experiment 1 examined whether adult Korean native speakers are sensitive to the interaction between control verbs and complementizers. Thirty-nine adult Korean native speakers (age range: 21–56) completed a timed self-paced reading task and untimed acceptability and coreference judgment tasks. Two factors were manipulated: COMPLEMENTIZER (*kilo* vs. *tolok*) and CONTROL VERBS (subject-control vs. object-control). **Experiment 2** (N = 68, age range: 18–69) further examined whether complementizers alone can guide coreference resolution by replacing control verbs with a semantically light verb *ha-* 'do.' In addition to COMPLEMENTIZER, PLAUSIBILITY was manipulated (plausible vs. implausible), given evidence that comprehenders rely on discourse context or plausibility cues (Traxler & Pickering 1996). A timed stop-making-sense task (adapted from Boland et al. 1998) was employed alongside untimed judgment measures.

Results and Discussion

Experiment 1 revealed that Korean comprehenders are sensitive to the interaction between complementizers and control verbs. Sentences in which complementizers aligned with control verbs were read more quickly, rated as more acceptable, and yielded clearer interpretations of empty subjects than sentences with mismatches (Figure 1). **Experiment 2** demonstrated that complementizers alone can drive proactive coreference resolution in the absence of a full-fledged control verb (Figure 2). Notably, subject-control sentences were judged more acceptable when control verb cues were present (Exp.1), whereas object-control sentences were judged more acceptable when those cues were absent (Exp.2). Taken together, these findings suggest that the interpretation of control dependencies in Korean reflects a dynamic interplay at the syntax–semantics interface. Complementizers serve as robust cues for coreference resolution, even when lexical information from control verbs is limited.

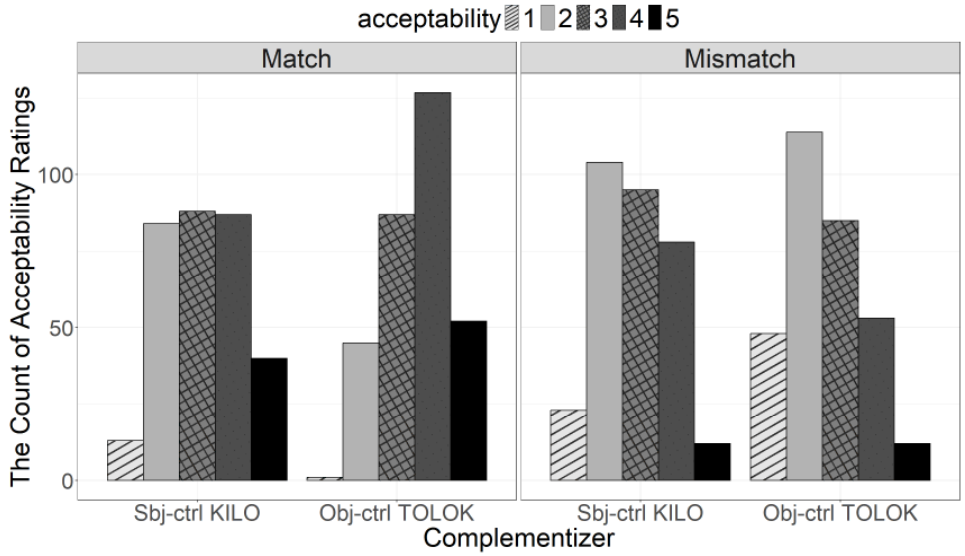

Figure 1. Distribution of acceptability ratings by condition in Experiment 1.

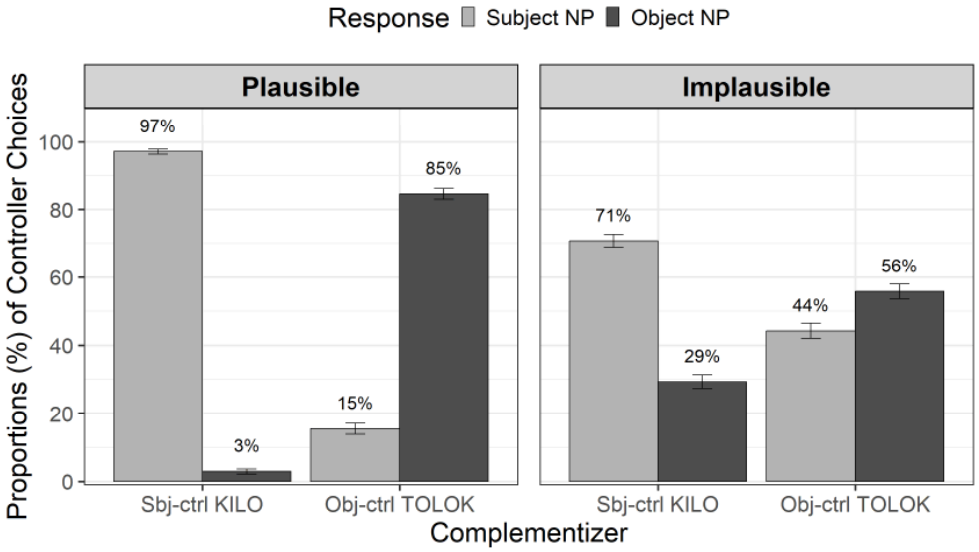

Figure 2. Proportions (%) of controller choices by condition in Experiment 2.

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Retrieval interference during the processing of null objects: ERP evidence for referential ambiguity in retrieval

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Background

(i) *Similarity-based interference effects*. The processing of long-distance dependencies, including the relation between an antecedent and an elided constituent, requires memory retrieval. A widely observed phenomenon during such retrieval is similarity-based interference, whereby syntactically illegitimate elements (so-called attractors) disrupt the retrieval process (McElree, 2006; Van Dyke & Johns, 2012). For example, in processing the elided VP in (1), the parser must retrieve the antecedent VP. Although the VP within the relative clause (*was sold*) is not a grammatically licit antecedent, its presence imposes a measurable processing cost.

(1) Because Jane got the meal [that was sold by the takeaway] that night, John did too, as usual. (Martin 2018; 6)

(ii) *Source of interference effects*. Most previous studies have manipulated **morphosyntactic features** (such as voice on auxiliaries or gender on determiners) to investigate interference in ellipsis resolution. These manipulated features are overtly marked on words immediately adjacent to the ellipsis site, such as the voice feature on the remnant auxiliary in (1), making them highly **relevant** to the searching process. However, what is retrieved at the ellipsis site likely extends beyond just the morphosyntactic properties of the elided phrase. While prior studies suggest that embedded elements within complex antecedents can be accessed during retrieval (Shapiro et al., 2003; Snider & Runner, 2011), the potential for similarity-based interference from **non-morphosyntactic, irrelevant features** (those not morphologically marked on the adjacent words) remains underexplored.

Aim of the current study

This study investigates the sources of interference effects in ellipsis resolution using event-related potentials (ERP). In particular, we conducted an experiment to explore whether non-morphosyntactic and irrelevant features can also induce interference effects.

Methods

Design and materials. The experiment had two conditions (see example (2)). Target sentences (Elliptical Sentences, ESs) were identical across conditions. The verb following the null object and the immediately following adverb were designated as the critical and spill-over regions for ERP analysis. In the one proper noun condition, the subject of the antecedent clause was a universal quantifier, and the object contained a reflexive possessor. Thus, the subject of the ES was the only proper noun encountered before the null object. In contrast, the multiple proper noun condition included two proper nouns in the antecedent clause (one in subject, one in object), resulting in three proper nouns being encountered prior to the null object. *Procedure*. Each of the 24 participants read 180 sentences (60 experimental and 120 fillers) in a rapid serial visual presentation (RSVP) paradigm. Each word was presented for 400ms, followed by a 200ms blank interval. A comprehension question followed each sentence, requiring a yes/no response via keyboard. The comprehension questions for experimental trials targeted interpretation of the null object (e.g., “What did Minki try to solve?”). Participants performed with high accuracy (one-proper noun: 96.96%; multiple-proper noun: 93.93%). EEG data

were recorded using the actiCHamp system (Brain Products GmbH, Munich, Germany) with 64 active electrodes. Preprocessing followed the recommended procedure in ERPlab Studio (Lopez-Calderon & Luck, 2014; Luck, 2014). For ERP analysis, we defined anterior (F3, Fz, F4, FC1, FC2) and posterior (CP1, CP2, P3, Pz, P4) regions of interest (ROIs) for further analysis.

(2) Design and Materials

a. One-proper noun condition

AS: Motwu-ka [caki-uy puzzle-ul] machwulyeko nolyekhayssta.
everyone-Nom self-Gen puzzle-Acc solve tried-to
Everyone tried to solve self's puzzle.

ES: **Minki**-to <e> machwulyeko$_{\text{critical region}}$ yelsimhi$_{\text{spill-over}}$ nolyekhayssta.
M-also solve hard tried-to
Minki also tried to solve <e> hard.

b. Multiple-proper noun condition

AS: **Jwunki**-ka [**Hauni**-uy puzzle-ul] machwulyeko nolyekhayssta.
J-Nom H-Gen puzzle-Acc solve tried-to
Jwunki tried to solve Hauni's puzzle.

ES: **Minki**-to <e> machwulyeko$_{\text{critical region}}$ yelsimhi$_{\text{spill-over}}$ nolyekhayssta.
M-also solve hard tried-to
Minki also tried to solve <e> hard.

Prediction

If retrieval interference arises due to the presence of a potential attractor with a non-morphosyntactic, irrelevant feature (i.e., the presence of proper nouns that cannot serve as the possessor of the elided object), a **sustained anterior negativity (Nref)**, a neural index of referential ambiguity or uncertainty (van Berkum et al., 1999, 2003; Nieuwland & Van Berkum, 2008), should be observed in the multiple proper noun condition, relative to the one proper noun condition.

Results

(i) 300–500 ms window: no significant main effect of Condition; No interaction between Condition and Anteriority. (ii) 500-800ms window: a marginal main effect of Condition ($\beta = 0.55$, SE = 0.21, $p < .01$); a significant Condition × Anteriority interaction ($\beta = -0.60$, SE = 0.29, $p < .05$). (iii) Post hoc tests for anterior and posterior ROIs in the 300–800 ms window: A significant difference between conditions in the anterior sites ($\beta = -0.45$, SE = 0.19, $p < .05$), no significant difference in the posterior sites.

➔ Observation of Nref in the multiple proper noun condition.

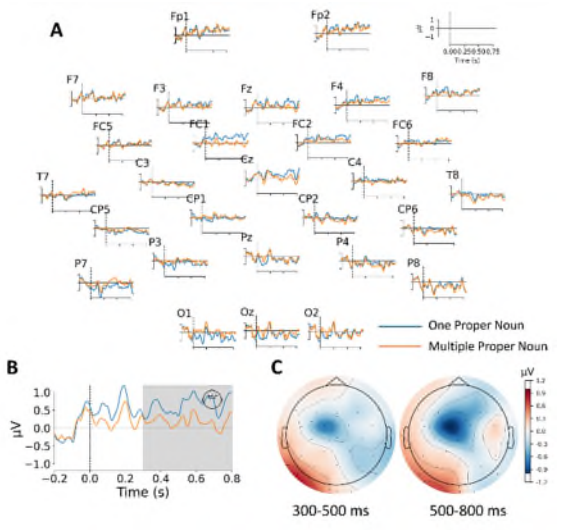

Figure 1. (A) Grand average ERP waveforms across all electrode sites (B) Grand average ERP waveforms at frontal electrodes (Nref). (C) Topographic maps

Discussion

(i) *Implications for the source of interference effects:* Retrieval interference is not limited to features that are morphosyntactic or directly relevant to the searching process; rather, irrelevant and non-morphosyntactic features can also give rise to interference effects. (ii) *Implications for the type of interference effects*: The nature of the manipulated feature influences how interference effects manifest in ERP data. This study makes a novel contribution by demonstrating that the Nref component can be elicited as a marker of interference, depending on the type of linguistic information involved.

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화자의 악센트가 영어 모음의 지각 단서 가중치에 미치는 영향: 원어민과 한국인 학습자 비교

소현정
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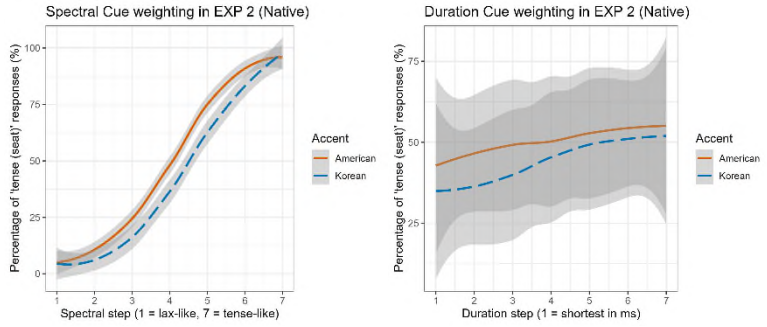
본 연구는 Zhang (2022)을 확장하여, 화자의 영어 악센트(American VS Korean accented English)가 영어 긴장-이완 모음 지각에 어떤 영향을 줄 수 있는지, 그 결과가 청자의 영어 숙련도(원어민 VS 한국인 상급 학습자)에 따라 어떻게 달라지는지를 연구하였다.

Exemplar theory(Drager & Kirtley 2016)에 따르면, 언어정보와 비언어적 정보(화자에 대한 사회적 정보)는 함께 묶여 exemplar 로 저장되고, 한번에 활성화된다. 따라서 청자가 Korean accented English 를 들을 때 '화자=한국인'이라는 사회적 정보와 이들의 긴장-이완 모음 변별 특징(spectral cue 보다 duration cue 에 더 의존)이 함께 활성화되어, 지각 시 duration cue 의존도는 증가하고 spectral cue 의존도는 감소할 것이라 예측하였다.

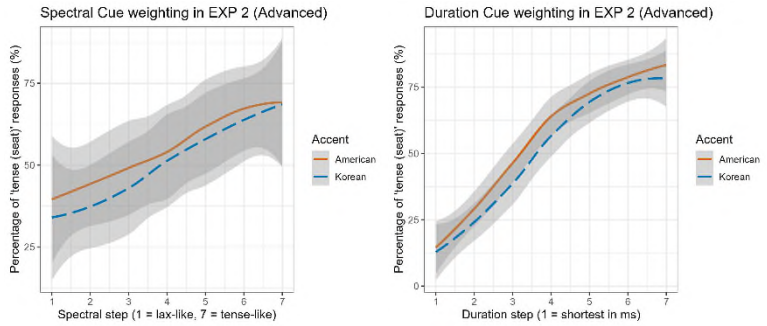
실험 1(2AFC)에서는 원어민 화자의 '*seat/i/–sit/ɪ/*'을 녹음 후 spectral, duration 7 단계 continuum 을 제작해 랜덤으로 제시하였다. 원어민 그룹은 Spectral(β=2.333, p<0.01), Duration(β=0.602, p<0.01), Spectral×Duration(β=0.130, p=0.005) 효과가 유의미했으나, 한국인 학습자 그룹은 Duration(β=1.440, p<0.01) 효과만 유의미했다.

실험 2(2AFC)에서는 한국어-영어 이중언어 화자 4 명의 *seat–sit*(American accent)을 실험 1 과 동일하게 조작하였다. 또한 문장을 American 또는 Korean accented English 로 제시해, 뒤따르는 자극의 단서 가중치가 악센트에 따라 어떻게 달라지는지 확인하였다.

(1) a. 그림 1(실험 2 결과: 원어민 그룹)



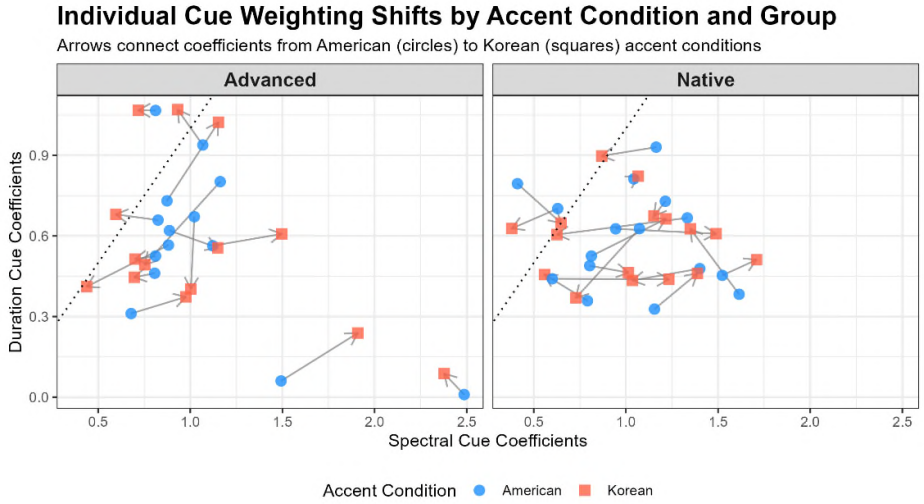
b. 그림 2(실험 2 결과: 한국인 상급 영어 학습자 그룹)



그 결과 원어민 그룹(1a)은 Spectral(β=1.575, p<0.01), Duration(β=0.283, p<0.01), Accent=Korean(β=-0.581, p<0.01), Duration×Accent=Korean(β=0.137, p=0.047)

효과가 유의미했으나, Spectral×Accent=Korean(p=0.622)은 유의미하지 않았다. 즉 원어민은 Korean accent 조건에서 duration cue 사용이 증가했음을 보여주었다. 반면 한국인 학습자 그룹에서는(1b) Spectral(β=0.495, p=0.03), Duration(β=0.882, p<0.01), Accent=Korean(β=-0.264, p=0.036) 효과만 유의미했으며, Spectral×Accent=Korean (p=0.182), Duration× Accent=Korean(p=0.482)는 유의미하지 않았다. 즉 한국인 학습자들은 화자의 악센트에 따라 cue-shifting 을 보이지 않았다.

(2) a. 그림 3(실험 2: 개인차)



(2)는 실험 2 각 참여자 그룹 개개인의 Accent 에 따른 Spectral, Duration cue 차이를 나타낸다. 한국인 학습자 그룹이 원어민보다 더 큰 변동성을 보였으며, 원어민은 Accent 조건에 따라 비교적 일관된 방향으로 의존도를 조정했지만, 학습자들은 cue-shifting 이 나타나더라도 전략이 불안정하고 개인차가 컸다.

종합하면, 원어민은 화자의 악센트만으로도 '한국인 화자는 duration cue 를 더 사용한다'는 사회적 정보가 활성화되어 신호 가중치를 조정한 반면, 한국인 학습자는 사회적 정보의 활성화가 제한적이거나 exemplar 축적량이 부족하여 일관된 전략을 보이지 않았다. 향후 연구에서는 영어 숙련도가 매우 높은 학습자가 원어민과 유사한 cue-shifting 을 보이는지 확인할 필요가 있다.

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Semantic and Pragmatic Annotation of Paraphrases in the Era of Large Language Models

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In the context of rapid innovation in the field of Artificial Intelligence (AI), tools such as Large Language Models (LLMs) have gained many users worldwide. LLMs are text generation tools based on deep neural network architecture and very big corpora. LLMs are used for a wide range of tasks, such as summarizing (Liu et al. 2024; Song et al. 2024), translation (Moslem et al. 2023; He et al. 2024), short stories writing (Tian et al., 2024; Simon and Muise, 2022), or question-answering (Kamalloo et al., 2023). In this study we focused on analyzing the linguistic "understanding" capabilities of LLMs when faced with a task of semantic and pragmatic annotation of paraphrases. Our main research goal is to evaluate to what extent LLMs can be effective tools for fine-grained linguistic analysis of complex levels such as *semantics*, which is focused on meaning, and *pragmatics*, which examines language in use, considering context and the speaker's intention.

Although these AI tools can generate different types of texts at different levels of performance, their linguistic "understanding" of language is still limited. Guo et al. (2024) evaluated the lexical, syntactic and semantic distribution of LLMs answers and showed that there is a significant difference in the quality of the LLM generated texts compared to the linguistic richness of human language for story generation tasks. Another study (Yu et al., 2024), demonstrated positive results, highlighting that GPT-4 can reach human performance when annotating pragma-discursive markers of apology. However, GPT-4 is a Very Large Language Model that requires high computational costs for conducting experiments, which cannot be easily reproduced by the large scientific community. We used open-source Small Language Models that allow easy reproduction of the results and have very low or zero computational costs (Schick and Schütze 2021).

In our study, we specifically addressed the concept of *paraphrases* in linguistics. The *paraphrase* was mainly defined as sentences or phrases that have the same meaning while using different words or syntactical structures (Fuchs 1980; Mel'čuk, 1988; Bhagat and Hovy 2013). We focused on a less studied type of paraphrase, the *subsentential paraphrase*, defined as words or sentence segments that have a similar meaning to another group of words (Bouamor 2012). Based on previous studies, we consider a broader definition of the *subsentential paraphrase*: an equivalence in the broad sense, based on a common semantic core, with a length shorter than one sentence (Buhnila, 2023).

The methodological framework of our study involves taxonomies of semantic relations and pragmatic functions, as previously defined by Eshkol-Taravella and Grabar (2017). We used an existing English subsentential paraphrase dataset, *RefoMed*, focused on medical paraphrases (Buhnila, 2023). The dataset was annotated by several linguist experts that obtained high Kappa inter-annotator agreement. The fine-grained annotation contained five types of semantic-pragmatic functions (*definition, exemplification, paraphrase, denomination, explanation*) (Buhnila, 2023).

Our experimental setup involved prompting LLMs with similar annotation guidelines as those followed by human linguists. We tested two open-source Large Language Models of relatively small size, *llama3.2-3b* (Dubey et al., 2024) and *gemma3-4b* (Team Gemma et al. 2025). We constructed a prompt (instruction given to a language model) that provided definitions of each semantic and pragmatic concept and asked the LLM to choose the right semantic and pragmatic label for each given paraphrase. We ran 100 experiments on English paraphrases previously annotated by human linguist experts. When comparing LLM to human annotations, results showed a very low accuracy of 30% correct *definition* labels for llama3.2, and 40% for gemma3. The two models misunderstood *definition* and *explanation* as semantic-pragmatic functions. For *explanation*, llama3.2 obtained the same accuracy (30%), while gemma3 had a much better performance (60%). The *exemplification* function was correctly classified by llama3.2 in 40% of the cases, while gemma 3 obtained 60% accuracy. These low to moderate performance results demonstrated that LLMs' annotations of semantic and pragmatic labels align poorly with human annotations.

This experimental study demonstrated that Large Language Models have a limited understanding of linguistics and a low performance when asked to annotate pragmatic aspects of paraphrases. Pragmatics

requires understanding that goes beyond the lexical or semantic level, having to connect to the real-world context in which a specific paraphrase was produced. Our study highlighted the challenges and risks associated with using LLMs for linguistic analysis, such as the risk of *hallucinations* (wrong or inaccurate generated content) (Huang et al. 2023). LLM *hallucinations* can have a high impact on how we understand language in present research environments where Generative AI tools and human linguistic expertise coexist.

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Do Large Language Models Possess Pragmatic Competence? A Methodological Approach

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Introduction

Pragmatic competence is essential for natural and reliable communication in large language models (LLMs). While many studies highlight LLMs' shortcomings in pragmatics, others report that specific prompt designs or task framings can make models appear successful in pragmatic reasoning. This raises a key question: do LLMs genuinely possess pragmatic competence, or do they only appear competent under certain conditions? To address this, the present study adopts Chomsky's (1965) competence–performance framework, using scalar implicature as a diagnostic tool.

Background

Hu and Levy (2023) introduced two complementary methods for evaluating LLMs' linguistic knowledge: direct probability measurement, which accesses internal probability distributions, and metalinguistic prompting, which elicits natural language judgments. Crucially, their study compared these methods within the same model, revealing that direct probability tends to provide more stable and reliable results, while metalinguistic prompting is highly sensitive to prompt format and task framing.

Scalar implicature (e.g., interpreting *"Some students passed the exam."* as *"Not all students passed the exam."*) is a classic phenomenon in pragmatics. However, implicature strength varies across lexical scales—a phenomenon known as scalar diversity (van Tiel et al., 2016). For instance, <some, all> reliably elicits strong implicatures, whereas <warm, hot> produces weaker ones. This variability provides a fine-grained diagnostic for probing pragmatic sensitivity in LLMs. Building on this, the present study examines whether LLMs' interpretations of scalar implicatures reflect genuine competence or merely task-dependent performance, by comparing direct probability measurement and metalinguistic prompting.

Experiment

This study evaluated three sizes of the Flan-T5 model (small, base, large) to test whether model scale influences pragmatic reasoning. The experimental materials were drawn from Ronai & Xiang's (2024) scalar diversity dataset, expanded to include 60 lexical scales (e.g., <good, excellent>, <warm, hot>) with 6,000 items in total. Two experimental conditions were designed:

- Experiment A (Sentence Judgment Task): the model judged each candidate sentence (pragmatic vs. logical interpretation) independently.
- Experiment B (Sentence Comparison Task): both candidates were presented simultaneously, requiring a relative choice.

Each condition was tested under four evaluation methods: direct probability measurement and three metalinguistic prompting (i.e., MetaSimple, MetaInstruct, and MetaComplex).

Findings & Conclusion

Across both experiments, direct probability measurement consistently showed low rates of pragmatic interpretation, indicating that scalar implicatures are not strongly embedded in the models' internal representations. In contrast, metalinguistic prompting produced more varied outcomes, with performance patterns differing by prompt type and model size. Specifically, larger models showed improved pragmatic responses under metalinguistic prompting, sometimes surpassing direct probability results. Task format also mattered: in Experiment A (sentence judgment) direct probability outperformed some prompts in smaller models, while in Experiment B (sentence comparison) all prompting methods outperformed direct measurement. These findings suggest that LLMs' apparent pragmatic abilities are highly sensitive to performance (e.g., prompt design, task framing, and model size), rather than reflecting stable underlying competence. This pattern contrasts with Hu & Levy (2023), where direct probability measurements consistently outperformed metalinguistic prompting in evaluating lexical and syntactic tasks.

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Table 1. Examples of direct probability and metalinguistic prompting in Experiment A

Type of prompt	Example
Direct	{**The movie is good**, **The movie is not excellent**}
MetaSimple	Can you conclude from {**The movie is good**} that {**The movie is not excellent**}? Respond with either Yes or No as your answer.
MetaInstruct	You are a helpful writing assistant. Tell me if you can conclude from {**The movie is good**} that {**The movie is not excellent**}. Respond with either Yes or No as your answer.
MetaComplex	Here is a sentence: {**The movie is not excellent**}. Can you conclude this from {**The movie is good**}? Respond with either Yes or No as your answer. Answer:

Table 2. Examples of direct probability and metalinguistic prompting in Experiment B

Type of prompt	Example
Direct	{**The movie is good**, **The movie is not excellent**}
MetaSimple	Which sentence can you conclude from {**The movie is good**}?: 1) {**The movie is not excellent**} 2) {**The movie is excellent**}. Respond with either 1 or 2 as your answer.
MetaInstruct	You are a helpful writing assistant. Tell me which sentence you can conclude from {**The movie is good**}: 1) {**The movie is not excellent**} 2) {**The movie is excellent**}. Respond with either 1 or 2 as your answer.
MetaComplex	Here are two sentences: 1) {**The movie is not excellent**} 2) {**The movie is excellent**}. Which sentence can you conclude from {**The movie is good**}? Respond with 1 or 2. Answer:

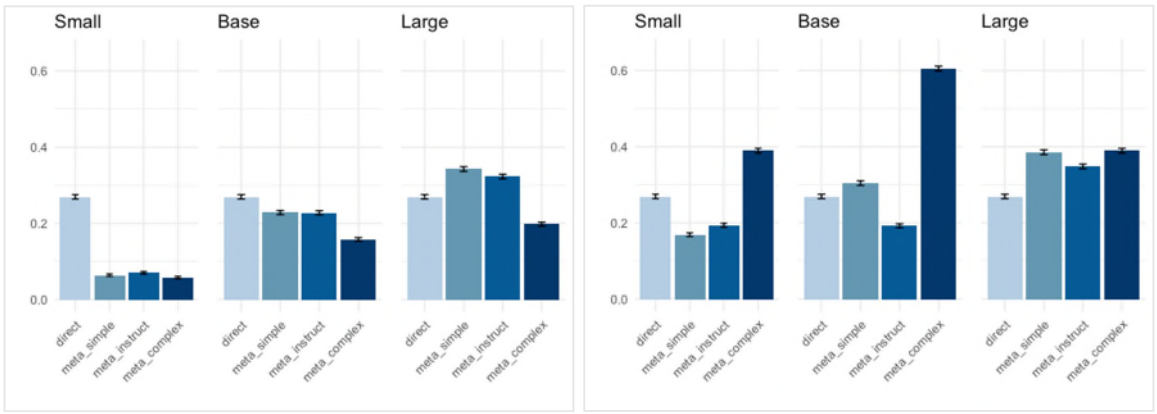

Figure 1. Mean accuracy across the measurement conditions for each model size from Experiment A & B

A Biblioshiny AI Study of Multimodal Analysis Research: Trends, Thematic Evolution, and Collaboration Networks

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Se-Eun Jhang
(National Korea Maritime & Ocean University)

This study presents a comprehensive bibliometric analysis and thematic evolution mapping of research on multimodal analysis, covering publications from 2002 to 2025. Using datasets encompassing 1,095 documents and multiple bibliometric indicators, the study identifies three distinct periods: foundational development (2002–2012); thematic diversification (2013–2018); and rapid technological integration (2019–2025). The third period, which is ongoing, has seen significant growth in publications and citations, with emerging topics including non-verbal behavior, multimodal discourse, machine learning, and artificial intelligence integration. The analysis also uncovers the collaboration networks of the authors, institutions, and countries that are contributing to the field, thereby illuminating the multidisciplinary nature of contemporary multimodal analysis research. Thematic maps and co-work networks illustrate the interconnections between new and established topics, providing valuable insights for linguists and scholars exploring multimodal analysis in language studies. This work highlights evolving research trends and offers outlooks for the future to guide further academic enquiry and collaborative efforts, using advanced bibliometric tools such as Biblioshiny AI.

Multimodal analysis has emerged as a dynamic interdisciplinary research area, integrating linguistics, communication, education, and advanced computational techniques (O'Halloran 2021; Kress and Bezemer 2023; Zhong et al. 2023; Liu et al. 2024; many others). This bibliometric study aims to answer three fundamental research questions regarding the development of multimodal analysis research from 2002 through 2025:

1. What are the major thematic transitions in multimodal analysis research over the past two decades?
2. How have publication and citation patterns evolved during these years?
3. What characterizes the collaboration networks among authors and institutions in this research?

Periodization for identifying the most appropriate major thematic transitions

Based on three key analytic dimensions —Annual Scientific Production, Average Citation per Year, and Analysis of Trending Topics— the research divides the 2002–2025 span into three distinct periods, as seen in Figure 1 and Figure 2 below. These periods reflect significant shifts in thematic focus, research productivity, and citation impact. This tripartite periodization is grounded in bibliometric indicators showing clear trends in production volume, citation averages, and evolving research topics, validated by thematic maps and topic trend analyses.

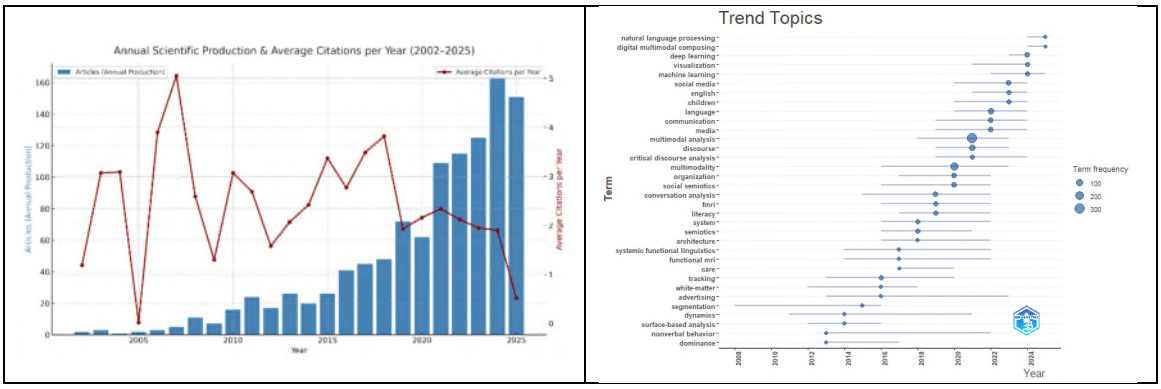

Figure 1. (Left) A combined line graph of annual scientific production and average citation per year
Figure 2. (Right) Analysis of trending topics over time

Publication and Citation Patterns

Over the three periods, annual scientific production increased from just a few articles yearly in the first period to a robust output peaking at 164 articles in 2024. Citation impact remains strong throughout; however, average citations per document show a recent decrease attributed to citation latency of newer papers. The overall quantitative and qualitative expansion reflects a rapidly growing and vibrant field.

Thematic Evolution

Thematic mapping and evolution matrices reveal the progression of key topics, as in Figure 3 below:

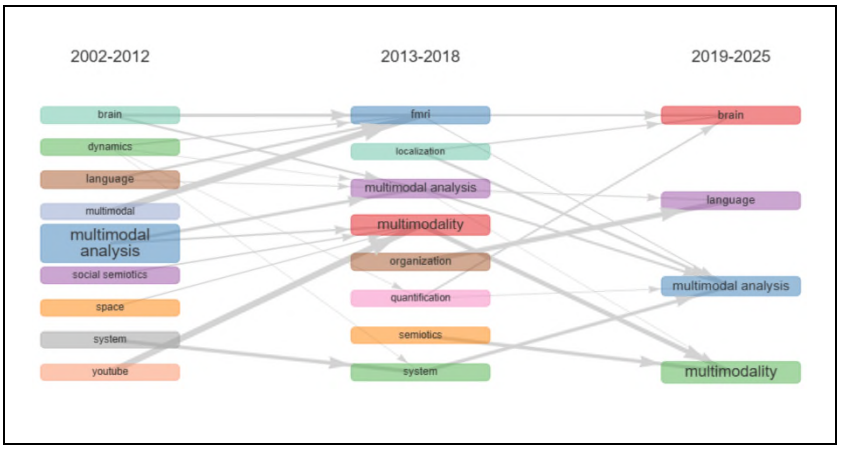

Figure 3. Thematic evolution across three periods

Early themes included segmentation and surface-based analysis, with a methodological exploration focus. The second period introduced dynamic and diversified topics such as dynamics, dominance, and the inclusion of disciplinary subfields in linguistics, communication, and education. The latest phase integrates technology-driven themes like non-verbal behavior, multimodal discourse, machine learning and AI integration. This signals a clear convergence of multimodal analysis with computational advances and artificial intelligence. We also display each thematic map for each period. Each map shows a clustering of key research themes, categorizing by centrality and density into four concepts: niche, motor, emerging or declining, and basic themes.

Collaboration Networks

Author and institution collaboration networks have become more complex and internationally diverse across the periods. Key indicators include (1) an average of approximately 3.8 co-authors per document, reflecting substantial collaboration, (2) around 24.9% of publications resulting from international co-authorship and highlighting the global and multidisciplinary nature of the field, and (3) the network analysis revealing active connectivity among research groups and leading to fruitful academic collaborations that accelerate innovation in multimodal analysis research.

Conclusion and Outlook

This bibliometric and thematic investigation provides insightful documentation of the multimodal analysis research landscape, revealing patterns of productivity, thematic shifts, and collaborative connectivity. The results provide a solid foundation for researchers and institutions looking to understand and engage with emerging trends, particularly in the areas of technological integration with machine learning and AI.

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A corpus-based approach to multimodal discourse analysis of the marine environment

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The protection of the marine environment has become an increasingly urgent global concern, and the International Maritime Organization (IMO), as the United Nations' specialized agency for maritime affairs, plays a central role in promoting sustainability within the shipping industry. In addition to publishing conventions, regulations, and written guidelines, the IMO has more recently turned to digital media, producing a wide range of videos that aim to raise awareness, foster compliance, and promote behavioral change among diverse audiences. These videos function not merely as supplements to textual documents but as independent modes of meaning-making, designed to engage viewers through combinations of visual, auditory, and verbal resources. Despite their growing prominence, scholarly research has tended to privilege IMO's legal instruments and written discourse, leaving a gap in our understanding of how multimodal communication is deployed in institutional maritime contexts.

This study addresses this research gap by conducting a multimodal discourse analysis of a curated corpus of IMO's marine environmental videos. The analysis is grounded in the frameworks of visual grammar and auditory grammar, which enable a systematic investigation into the semiotic choices that shape audience interpretation. Visual grammar (Kress & Van Leeuwen, 2020) highlights compositional structures such as gaze, framing, and salience, while auditory grammar (Van Leeuwen, 2006) brings attention to elements such as intonation, background music, sound effects, and vocal delivery. By integrating these perspectives, the study examines how multimodal resources co-construct meaning and how IMO strategically employs them to highlight urgent ecological issues, emphasize the gravity of maritime pollution, and appeal to the emotions and values of global audiences.

The research aims to identify patterns of persuasion and meaning-making that cannot be fully conveyed through written texts alone, such as the emotional resonance of imagery, the urgency encoded in soundscapes, and the persuasive force of synchronized multimodal cues. In doing so, the study contributes to the fields of maritime communication, multimodal discourse analysis, and environmental communication by expanding scholarly attention beyond text-centered approaches. Ultimately, the findings will shed light on the communicative strategies through which international organizations like the IMO mobilize multimodality to enhance advocacy, strengthen legitimacy, and shape global awareness of marine environmental protection.

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Language and politics of identity in the linguistic landscape of Seoul

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One of the popular narratives about South Korea stems from its long reputation as an ethnically and culturally homogeneous national society (e.g., Kymlicka and He, 2005). Ideas of nation and nationalism have been based upon the ethnic and cultural homogeneity of the Korean people (Schmid, 1997; Shin, 2006). Adopting a Linguistic Landscape Research (Scollon and Scollon 2003), this study asks how the linguistic landscape (LL) of Seoul can be contextualized within geopolitical and geoeconomic challenges. Thus, by focusing on the LL as a means to express concerns regarding social issues, this study aims to add to the understanding of the LL by drawing attention to language and politics of identity in the contexts of Korean society. The study suggests how the LLs could offer a varied account of and new insight into many issues, and how it relates to the broader and various ethnolinguistic communities worldwide in the face of globalization.

The present study involves widely available top-down and bottom-up public signs featuring Korean, English, other language texts and non-texts signage in contemporary Seoul. The linguistic and semiotic signage were captured via photos according to language (the degree of visibility of languages), domain (e.g., business, government, or tourism) and discourses (e.g., commercial, transgressive). Based on the above considerations, the following areas in Seoul were chosen:

(1) places with signage displayed in different language(s), e.g., Insadong, Sinchon, and Myeongdong;
(2) places with populations of different ethnicities and nationalities, e.g., Itaewon;
(3) places of business or government offices, namely, Gangnam-gu (business) and Jung-gu (government offices); and
(4) places with socio-cultural or historical attractions, e.g., Jongno-gu (Bukchon).

As a global city, Seoul shows much enthusiasm towards the characterization of its urban LL as multilingual and multicultural (Underwood, 2010). However, the present study gleaned via major perspectives on specific historical, political, cultural, and socioeconomic underpinnings that are sometimes in tension with or overlap each other indicate that the many multilingual signs in Seoul cannot be taken merely at face value. By interpreting the connotations of the signage displayed and relating them to the larger international context, the findings of this study shows that signs do not necessarily provide evidence of a city embracing multilingualism but instead are indicative of pragmatic intention, and may at times also demonstrates the potential 'global hegemony of English' (Park, 2009), the increasing impact of geopolitics and geoeconomics, and the difficulties and struggles of Koreans attempting to maintain their language, culture and identity in the context of global competition (Ding et al., 2020). Inherently, the LL reveals that the call for a common vision of 'multilingualism and multiculturalism' in traditionally homogeneous societies can be hegemonic and that maintaining identity in the face of pressures from internationalism can be difficult and challenging.

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A Corpus-Based Diachronic Analysis of *Now* as a Discourse Marker

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This study explores recent changes in the use of *now* as a discourse marker (DM) in spoken English, comparing two distinct corpora complied in the 1990s and 2010s. While *now* is typically recognized as a temporal adverb, previous research shows that it also serves a variety of pragmatic functions when it loses its temporal meaning (Aijmer, 2002; Schiffrin, 1987; Schourup, 2011). *Now* as a DM frequently signals shifts in attention or continuity in conversation (Fraser, 2009; Grosz and Sidner, 1986; Hirschberg and Litman,1993; Quirk et al., 1985; Schiffrin, 1987), functioning as a cue for topic changes, returns to earlier points, or the initiation of subtopics. Schiffrin (1987) emphasizes its role in marking progression through discourse, shifting orientation, and managing participation, while Aijmer (2002) classifies its pragmatic roles into textual and affective categories. Textual functions include signaling topic change, framing boundaries, managing turns, marking contrast, emphasis, or listing, and elaborating information. Affective functions involve stance marking, disclaimers, footing shifts in perspectives, affective intensity, and the introduction of direct speech. Building on these functions, the present study investigates the frequency, positional tendencies, social distribution, and functional distribution of DM *now* over the last two decades, in order to identify diachronic changes in its role as a DM.

The analysis is based on the demographically sampled spoken component of the British National Corpus 1994 (Spoken BNC1994DS) and the Spoken BNC2014 that represent everyday informal conversation in Britain across two different time periods. From each corpus, 8,000 tokens of *now* were randomly selected and identified for position, function, and speaker demographics such as age and gender. All tokens were classified as either temporal adverb or DM uses, with the latter further divided into textual and affective functions, based on a synthesis of functions identified in the previous research.

The results show that *now* occurs more frequently as a temporal adverb than as a DM in both corpora, but both uses increase in normalized frequency over time. These differences are statistically significant, indicating that *now* has become more frequent overall in the 2010s. The positional analysis demonstrates that *now* as a DM exhibits a strong preference for initial positions in turns and utterances. At the same time, however, a noteworthy increase is observed in utterance-medial positions, suggesting a developing flexibility in its syntactic position and may point to an ongoing process of pragmatic expansion whereby the DM *now* is recruited to manage local discourse within utterances rather than solely at boundaries.

The social distribution highlights notable generational differences. In the Spoken BNC1994DS, the highest frequency of DM *now* is found among middle-aged adults, particularly those in the 25–44 age group, while children and adolescents use it less often. In contrast, speakers aged 15–24 in the Spoken BNC2014 emerge as the most frequent users, with rates more than doubling compared to two decades earlier. This finding indicates that younger speakers are driving change in both frequency and positional flexibility, while moderate increases among older speakers suggest gradual diffusion across generations. The gender distribution, on the other hand, shows no statistically significant differences. Although women produce slightly more tokens in the Spoken BNC1994DS and men slightly more in the Spoken BNC2014, both genders display overall increases in the use of DM *now*.

The functional analysis provides further evidence of change. Across both corpora, the most frequent function of DM *now* is to signal listing within a cumulative sequence of events or actions, although this role has declined slightly in the Spoken BNC2014. The most notable shift is the threefold increase in marking contrast or comparison. Other functions, such as addition of information, topic change, and emphasis, remain stable in their relative shares, while turn management continues to represent a minor function.

In affective functions, the Spoken BNC 1994 shows that hearer-oriented footing shifts, such as urging or prompting the hearer, account for the majority of uses. In the Spoken BNC2014, this function decreases sharply, while the use of *now* to mark affective stance, such as expressing evaluation, attitude, or intensity, more than doubled. This reflects a growing tendency for the DM *now* to manage subtle interactions and express personal viewpoints. The function of introducing direct speech remains relatively rare but shows a modest rise.

Overall, the findings demonstrate that the DM *now* in spoken English is undergoing significant distributional and functional shifts. While it continues to serve its adverbial function as a temporal adverb, *now* is frequently used to manage various textual and affective functions, such as shifting topics, marking contrasts, and expressing stance. The diachronic analysis of the Spoken BNC1994DS and Spoken BNC2014 reveals that its pragmatic force extends beyond mere time-reference, highlighting an ongoing pragmatic drift that has positioned *now* as a multifunctional resource for speakers to manage discourse structure and interaction.

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Comparing Traditional and Key Lexical Bundle Extraction Methods in Maritime Legal English

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This study compares traditional, frequency-based methods with advanced, text-dispersion keyness approaches for identifying lexical bundles in maritime legal English. The research evaluates the ability of each method to identify distinctive, domain-representative lexical bundles by applying these approaches to a corpus of one million words spanning four genres: case law, documentary texts, legislation, and academic papers. The findings demonstrate the effectiveness of dispersion-based keyness in identifying expressions that are specific to the domain, and emphasize the importance of incorporating the recent methodological advances of Larsson et al. (2025) in order to enhance the analysis of lexical bundles in specialised fields.

Introduction

Lexical bundles—defined as recurrent multiword sequences generally comprising three or more words—play a significant role in shaping discourse and revealing characteristic patterns within specific genres and registers (Biber et al., 2004; Hyland, 2008). Traditional approaches to extracting lexical bundles primarily rely on frequency-based measures, which identify recurrent expressions based on raw counts within corpora (Cortes, 2004; Chen & Baker, 2010). However, such frequency-focused methods can overlook domain-specific expressions that, despite low frequency, carry critical discourse significance.

To address these limitations, corpus linguistics has developed a suite of methods centered on keyness, quantifying the distinctiveness of lexical items by comparing their frequency or distribution in a target corpus relative to a reference corpus (Baker, 2004; Gabrielatos, 2018). Keyness metrics highlight items that are characteristic of a given text collection, providing deeper linguistic insights beyond mere frequency ranking (Scott, 1997; Gries, 2008, 2021; Egbert & Biber, 2019).

Recently, Larsson et al. (2025) introduced two innovative methods tailored for lexical bundle analysis that operationalize keyness using texts as the fundamental unit rather than treating the corpus as a homogenous whole. These are text dispersion keyness, which prioritizes the distribution of bundles across individual texts, and mean text frequency keyness, which incorporates standardized measures of frequency dispersion using effect size calculations. Their study demonstrated that these methods effectively balance two critical desiderata for lexical bundles: distinctiveness—features that differentiate a target corpus from others—and generalizability—features that recur consistently across many texts within the corpus.

Methodology

Building on Larsson et al.'s framework, this study assembles a custom-compiled corpus of maritime legal English, totalling one million words distributed across four core genres salient in this domain: case law, documentary texts, legislation, and academic articles. Employing computational methods, two extraction strategies are compared:

- Traditional lexical bundles extraction, facilitated by software such as WordSmith Tools, relying on frequency thresholds and minimum text occurrence criteria, per established protocols (Scott, 2012; Biber et al., 2004).
- Keyword lexical bundles extraction, leveraging dispersion-based keyness measures—in particular, text dispersion keyness and mean text frequency keyness—as implemented in recent corpus analytic pipelines (Egbert & Biber, 2019; Larsson et al., 2025). This approach filters bundles through a keyness lens to emphasize domain-relevant and contextually salient expressions.

The extracted bundles are then analyzed quantitatively and qualitatively to assess their content distinctiveness and generalizability within the corpus, with reference to prior methodological recommendations (Egbert & Biber, 2019; Larsson et al., 2025).

Expected Contributions

By integrating the novel keyness techniques of Larsson et al. (2025) into the study of maritime legal English, this research offers several contributions:

- It enhances the methodological rigor of lexical bundle extraction in a specialized legal register, moving beyond frequency-based approaches prone to overemphasis of high-frequency yet less representative bundles.
- It provides empirical evidence about the efficacy of dispersion-based keyness in revealing both distinctive and generalizable lexical bundles that are vital for understanding genre-specific communication in legal contexts.
- It showcases the adaptability of cutting-edge corpus linguistic techniques to complex domain-specific corpora, thereby informing pedagogical strategies, translation practices, and legal document drafting.

Conclusion

The study predicts that advanced keyness-based approaches, particularly those focusing on text dispersion and mean text frequency, will be more effective than traditional frequency-based methods at capturing nuanced lexical patterns in maritime legal English. Adopting these methods promises improved detection of key multiword units tailored to the demands of the field, in line with contemporary linguistic research priorities. This alignment not only fosters a deeper understanding of professional language use, but also suggests a path forward for future corpus-based linguistic enquiry in specialized fields.

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현대 신어에 대한 말뭉치 언어학적 연구
- 신어 정착 양상에 대한 단기 통시적 분석을 중심으로 -

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본 연구는 다수의 신어 중 일부만이 한국어 어휘 체계에 정착한다는 전제하에, 어떤 신어가 살아남는지와 그 과정에 영향을 미치는 언어 내·외적 요인을 밝히고자 한다. 이를 위해 최근 10 여 년간의 단기 통시적 시간 범위에서 신어의 생성과 사용을 중심으로 분석하였다. 먼저 어휘 생성 측면에서는 2012~2021 년 신어 목록을 대상으로 조어법, 원어 구성, 의미 범주 등의 변화를 살폈고, 사용 측면에서는 2012 년 신어 441 개가 등장한 기사문을 추출하여 약 1,277 만 어절 규모의 말뭉치를 구축·분석하였다.

분석을 위해 '신어', '공인화', '정착'과 같은 핵심 개념을 정리하고, 공인화를 어휘가 언어 공동체 내에서 일반적으로 사용되기까지의 점진적 과정으로 정의하였다. 특히 신어 정착 정도를 파악하기 위해 빈도와 함께 화용적 표지(인용부호, 소괄호, '이른바' 등)를 기준으로 삼아 공인화 단계를 제시하였다. 그 결과 구 단위 신어의 증가, 합성과 파생의 감소와 축약·혼성의 증가, 외래어·한자어 중심의 원어 구성 등 뚜렷한 경향을 확인하였다. 또한 지속적으로 사용되는 신어와 일시적으로 사라지는 신어 사이의 차이를 검토하여 언어 내적 특징과 외적 요인이 공인화 수준에 영향을 미침을 밝혔다.

본 연구는 최근 신어 자료를 단기 통시적으로 체계화하고, 신어의 생성·정착 과정에서 빈도와 화용적 지표의 역할을 면밀히 논의함으로써 한국어 어휘 변화 연구 및 신어 자료의 보존과 활용 기반 마련에 기여할 것으로 기대된다.

Phonological and morphological constraints on affixed reduplication in Banjarese

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This study investigates reduplication in Banjarese (Austronesian, Indonesia) based on a large-scale corpus and provides a formal analysis. Like many other Austronesian languages, Banjarese employs various reduplication processes. However, previous studies (Suryadikara et al. 1984; Rafiek et al. 2022) have been restricted to limited data and have not offered a detailed formal account. For the current study, a corpus is compiled from 300 short stories of Si Palui, a popular character in Banjarese folklore. The corpus consists of 686,740 words in total, including 720 instances of reduplication, encompassing full and partial reduplications. While Banjarese reduplication applies to both bare and affixed roots, this study focuses on the affixed reduplication, which involves more complex structural patterns.

Affixed reduplication in Banjarese exhibits five distinct patterns. First, both the root and the affix may undergo full reduplication. As shown in (1a), the entire word is copied, including the prefix /pam-/ and the suffix /-an/. Second, only the root may be fully reduplicated, with the affix remaining outside the reduplication process. In (1b), for example, the root is reduplicated, while the prefix /baː/ is not. Third, the root may be fully reduplicated, and the affix undergoes partial reduplication. As shown in (1c), the entire root is copied in the reduplicated form, and /ŋa/, a part of the prefix /maŋa-/, is also reduplicated. Fourth, when the prefix-final nasal fuses with a root-initial stop, the resulting nasal is included in the reduplicant. In (1d), the prefix-final nasal /N/ fuses with the root-initial consonants /t/ and /p/, and surfaces as [n] and [m], respectively, in both the base and the reduplicant. Fifth, the reduplicant may precede the stem to indicate reciprocal action. In this case, the root-initial, which is simultaneously reduplicant-initial, consonant resists nasalization even though it is nasalized in the base. In (1e), the redeplicant precedes a base prefixed with /maN-/, where the root-initial obstruent is nasalized as [n] or [ɲ]; however, the reduplicant preserves the original obstruent.

We analyze the patterns of Banjarese affixed reduplication based on two principles: (i) positional faithfulness for nouns and word-initial segments, and (ii) the minimality requirement for the reduplicant as a prosodic stem. The key difference between examples in (1a), which allows full reduplication of the whole constituent, and those in (1b), which allows only full reduplication of the root, is that the affixed bases in (1a) are nouns, while those in (1b) are verbs. We argue that the noun category in Banjarese constitutes a strong position, similar to patterns observed in several other languages (Smith 2001), and that base-reduplicant faithfulness is more strongly required for nouns than for verbs. In particular, MAX-BR_N is higher ranked than general MAX-BR, as well as ALIGNPROSODICSTEM, which requires the base of a reduplicative morpheme to be the prosodic stem itself and not an affix (Downing 2006). As a result, the entire noun, including its affix, is fully reduplicated as in (1a), since MAX-BR_N outranks ALIGNPROSODICSTEM. In contrast, only the root, excluding the affix, is reduplicated for verbs as in (1b), as ALIGNPROSODICSTEM outranks MAX-BR. The verb bases in (1c) involve partial reduplication of the affix, along with root reduplication, and these verbs are all monosyllabic. Banjarese words typically consist of two or three syllables (Hapip et al. 1981), and the limited number of monosyllabic words are loanwords from Dutch and Arabic (Rafiek et al. 2022). We assume that this minimality requirement for words also applies to reduplicants, requiring the reduplicant to consist of at least two syllables, and part of the affix is copied to satisfy this constraint (RED=σσ). The nasal in (1d), which is simultaneouly prefix-final and root-initial, is preserved to satisfy IDENT-BR(nasal) and MAX-BR, despite violating ALIGNPROSODICSTEM. In contrast, the reduplicated root-initial obstruent surfaces unchanged when the reduplicant precedes the base as in (1e), to satisfy another positional faithfulness constraint, $_{word}$[IDENT-IO(nasal), which prohibits changes in nasality at the beginning of a word. The crucial constraint ranking is given in (2).

This study shows that Banjarese affixed reduplication is shaped by an intricate interplay of morphological and phonological constraints. The current findings not only fill a significant gap in the

documentation of Banjarese morphophonology but also contribute to broader theoretical discussions about the role of lexical categories and prosodic constriants in reduplicative systems across languages.

(1)		*Root*	*Affixed Word*	*Reduplicated Word*
	a.	/basmi/	/pam-basmi/	[pambasmi**pambasmi**]
		‘exterminate’	NOMINALIZER-exterminate	NOMINALIZER-exterminate-RED
			‘exterminator’	‘exterminators’
		/sambut/	/sambut-an/	[sambutan**sambutan**]
		‘greet’	greet-NOMINALIZER	greet-nominalizer-RED
			‘celebration’	‘celebrations’
	b.	/darah/	/baː-darah/	[baːdarah**darah**]
		‘blood’	PASSIVE.VERBALIZER-blood	PASSIVE.VERBALIZER-blood-RED
			‘to bleed, bleeding’	‘bleeding continuously’
		/ŋalih/	/baː-ŋalih/	[baːŋalih**ŋalih**]
		‘difficult’	PASSIVE.VERBALIZER-difficult	passive.verbalizer-difficult-RED
			‘struggling’	‘struggling continously’
	c.	/lap/	/maŋa-lap/	[maŋalap**ŋalap**]
		‘wipe’	ACTIVE.VERBALIZER-wipe	ACTIVE.VERBALIZER-wipe-RED
			‘wipping’	‘wipping repeatedly’
		/pam/	/maŋa-pam/	[maŋapam**ŋapam**]
		‘pump’	ACTIVE.VERBALIZER-pump	ACTIVE.VERBALIZER-pump-RED
			‘pumping’	‘pumping continously’
	d.	/tiŋkiŋ/	/maN+tiŋkiŋ/ → [ma-niŋkiŋ]	[maniŋkiŋ**niŋkiŋ**]
		‘yell’	ACTIVE.VERBALIZER-yell	ACTIVE.VERBALIZER-yell-RED
			‘yelling’	‘yelling repeatly’
		/panciŋ/	/maN-panciŋ/ → [ma-manciŋ]	[mamanciŋ**manciŋ**]
		‘fishing rod’	ACTIVE.VERBALIZER-fishing.rod	ACTIVE.VERBALIZER-fishing.rod-RED
			‘fishing’	‘to fish repeatedly’
	e.	/tiŋkiŋ/	/maN+tiŋkiŋ/ → [ma-niŋkiŋ]	[**tiŋkiŋ**maniŋkiŋ]
		‘yell’	ACTIVE.VERBALIZER-yell	RED-ACTIVE.VERBALIZER-yell
			‘yelling’	‘yelling to each other’
		/surat/	/maN+surat/ → [ma-ɲurat]	[**surat**maɲurat]
		‘letter’	ACTIVE.VERBALIZER-letter	RED-ACTIVE.VERBALIZER-letter
			‘mailing’	‘corresponding’

(Note: Reduplicants in bold face)

(2) MAX-IO$_N$, MAX-BR$_N$, RED=σσ >> ALIGNPROSODICSTEM >> $_{word}$[IDENT-IO(nasal), MAX-IO, MAX-BR >> IDENT-BR(nasal) >> IDENT-IO(nasal)

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Tracing Lifespan Language Change: Attenborough and Vowel Shifts in Received Pronunciation

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Overview

This study presents acoustic evidence of longitudinal vowel changes of Sir David Attenborough, a nature documentary narrator who speaks with Received Pronunciation (RP). Previous studies have shown that the RP monophthongs are undergoing diachronic changes, with DRESS (/ɛ/) and TRAP (/æ/) shifting to a lower and more central location, while GOOSE (/u:/) and FOOT (/ʊ/) fronting and LOT (/ɑ/) and THOUGHT (/ɔ/) raising as seen in Figure 1 [1-5]. These vowel changes are seen as a part of a broader change in the RP vowel system where monophthongs shift in an anticlockwise direction around the vowel quadrilateral. This study examines whether Attenborough participates in these ongoing changes (*lifespan change*), rejects the changes in favor of the conservative norms (*retrograde change*) or simply maintains the patterns he acquired earlier.

Methods

A total of 16,871 stressed vowels were extracted from Attenborough's public speech between 1950 and 2020. Audio was transcribed and aligned, using the Montreal Forced Aligner [6]. Vowel formants were extracted and normalized using the Lobanov procedure [7]. Linear mixed-effect models were employed to assess changes in F1 and F2 across three time points (Attenborough's thirties, sixties, nineties).

Results and Discussion

The results reveal that Attenborough's vowels mostly shifted to reflect ongoing changes, while he also exhibits retrograde change in TRAP and FOOT at a later stage (see Table 1 & Figure 2).

From his thirties to sixties, he showed significant lowering and retraction of DRESS (F1: $p < 0.001$, F2: $p < 0.001$) and TRAP (F1: $p < 0.001$, F2: $p < 0.001$), and significant fronting of GOOSE ($p < 0.001$), which resemble the vowel shifts of Queen Elizabeth II in that some of his vowels approximated towards the modern RP vowel system vowels [8-10].

The changes observed from his sixties to nineties include significant fronting of GOOSE ($p < 0.05$) and significant raising of LOT ($p < 0.01$), which align with the community developments. It is notable that GOOSE-fronting that began earlier continued into the later period, although its magnitude decreased over time. Also, it is striking that LOT-raising was actuated when Attenborough was past sixty, indicating that significant phonetic changes can begin in one's later years, despite reduced malleability characteristic of later life [11].

Meanwhile, he also exhibits significant raising and retraction of TRAP (F1: $p < 0.05$, F2: $p < 0.01$) and significant retraction of FOOT ($p < 0.001$) from his sixties to nineties, which can be considered a return to more conservative vowel realizations. These retrograde changes align with previous findings of aging speakers becoming more conservative in the face of community changes in the opposite direction [12-15]. While TRAP remained modern due to a smaller retreat from TRAP-lowering after significant change in line with the community, he registered retrograde change towards retracted FOOT later in life, without any earlier evidence of FOOT-fronting.

These findings not only underscore the flexibility of adult speakers' linguistic system [15-17] but also add to the growing body of literature demonstrating retrograde change later in life.

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Figure 2 An anticlockwise shift in the Received Pronunciation (RP) vowel.

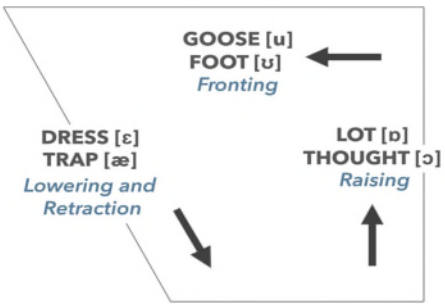

Figure 3 Attenborough's vowels across time period.

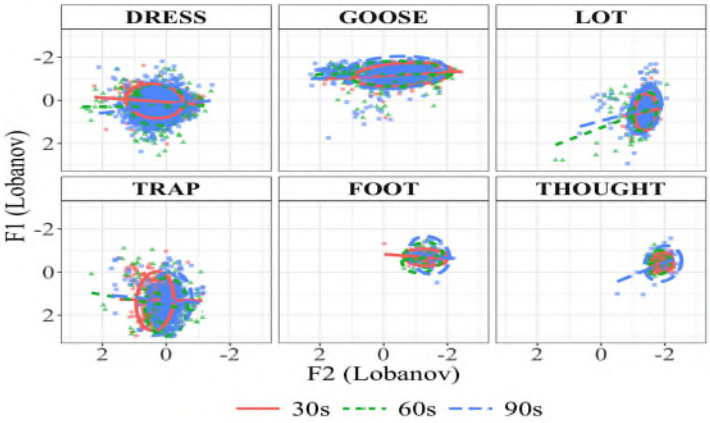

Table 1 Coefficient and significance level of each predictor (*p < 0.05; **p < 0.01; ***p < 0.001).

		30s – 60s			60s – 90s			30s – 90s		
		Estimate	**p-value**		**Estimate**	**p-value**		**Estimate**	**p-value**	
DRESS	F1	0.221	< 0.001	***	0.023	0.20		0.244	< 0.001	***
(n = 3890)	F2	-0.108	< 0.001	***	0.004	0.78		-0.105	< 0.001	***
TRAP	F1	0.297	< 0.001	***	-0.129	< 0.05	*	0.168	< 0.01	**
(n = 1364)	F2	-0.334	< 0.001	***	-0.079	< 0.01	**	-0.414	< 0.001	***
GOOSE	F1	0.005	0.81		-0.044	< 0.05	*	-0.039	0.17	.
(n = 1735)	F2	0.237	< 0.001	***	0.069	< 0.01	**	0.306	< 0.001	***
FOOT	F1	-0.009	0.86		-0.086	0.11		-0.094	0.07	.
(n = 218)	F2	0.013	0.75		-0.209	< 0.001	***	-0.197	< 0.001	***
LOT	F1	-0.006	0.86		-0.094	< 0.01	**	-0.099	< 0.01	**
(n = 1516)	F2	0.049	< 0.001	***	0.026	0.17		0.024	0.12	
THOUGHT	F1	-0.024	0.56		0.055	0.29		0.031	0.55	
(n = 278)	F2	0.095	< 0.01	**	-0.069	< 0.05	*	0.025	0.47	

AI는 공시적 음성 변이를 반영하는가?

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본 연구는 공시적 변이로서 관찰되는 세대간 말소리 변화를 인공지능이 반영하는 정도를 살펴보기 위해, AI 기반 TTS(text-to-speech)가 생성한 한국어 파열음을 인간 발화와 비교한다. 1990 년대부터 젊은 세대가 주도한 말소리 변화로 인해, 어구 초에 위치한 격음과 평음을 구분하는 주요 음향단서는 VOT 에서 F0 로 변화 중이다. 현재 고령층에서는 여전히 격음의 VOT가 평음보다 긴 반면, 젊은 화자들은 VOT를 병합하고, 대신 F0 를 변별 자질로 활용한다(Choi et al., 2020).

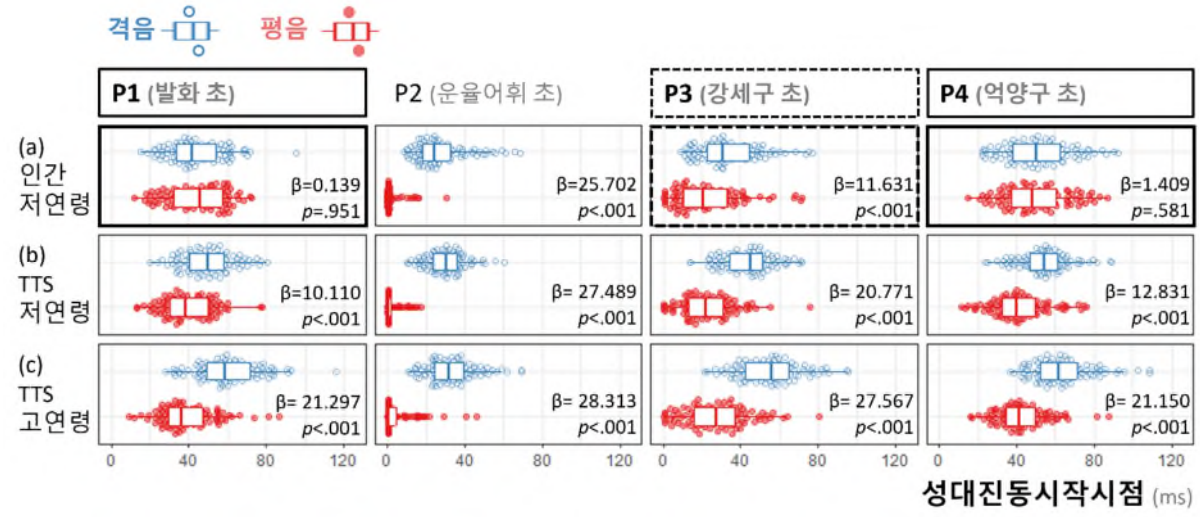
첫 번째 연구 목적으로, 국내 상용 온라인 TTS 플랫폼에서 제공하는 AI 음성들이 시스템마다 자체 설정한 화자 연령에 따라 격음과 평음 간 VOT 실현을 조정하는지를 확인하고자 한다. 둘째, 만약 그렇다면 젊은 AI 화자의 병합이 인간 젊은 화자들과 유사한 정도로 나타나는지 비교한다. 이를 위해, 세 개의 TTS 플랫폼(Naver CLOVA Dubbing, Typecast, We Make Voice)에서 총 60 개 AI 음성을 선정하여(고령 30 명, 저연령 30 명), 6 개 문장의 발화를 생성하였다. 각 문장에는 네 개의 서로 다른 운율 위치에서 파열음이 등장하였다.

(1) a. 펄렁펄렁 펄렁이, 펄렁거려요 b. 벌렁벌렁 벌렁이, 벌렁거려요
P1 P2 P3 P4 P1 P2 P3 P4

P1은 발화 초, P4는 억양구 초로, 이를 반영하기 위해 TTS 시스템에는 P4 앞에 쉼표를 입력하였다. P2 와 P3 는 각각 운율어휘 초와 강세구 초에 해당하여, P3 앞은 띄어 쓰고 P2 앞은 붙여 씀으로써 운율경계 차이를 반영했다. 따라서 어구 초에 해당하는 P1, P3, P4 에서 VOT 병합이 예상된다. 나머지 네 문장에서는, 위 예시에 포함된 양순음 최소대립쌍을 치조음(털, 덜)과 연구개음(컬, 걸)으로 교체하여, 운문 형식의 문장 자극을 사용하였다. 인간 발화 데이터는 21-26 세 한국인 화자 15 명이 동일한 문장을 4 회 반복하여 읽게 하며 얻었다. 이렇게 하여, 인간 화자로부터 720 개, TTS 로부터 1,440 개의 파열음을 수집하였으며, 화자 집단 별(인간 저연령, TTS 저연령, TTS 고연령), 운율위치별로 분석한 혼합효과 회귀모형을 통해, 격음과 평음의 VOT 가 유의미한 차이를 보이는지 검정하였다.

아래 그림과 같이, 인간 저연령 화자들은 발화 초(P1)와 억양구 초(P4)에서 격음과 평음의 VOT 가 거의 동일한 범위에 분포하여, VOT 가 완전히 합병되었음을 나타낸다. 어구 초이긴 하나 운율경계가 상대적으로 작은 강세구 초(P3)에서는, VOT 분포가 다소 겹치기는 하지만 유의미한 VOT 의 차이를 보여(p<.001), 합병이 운율 요인에 의해 완화되었음을 드러낸다. 반면, TTS 저연령 조건에서는 발화 초(P1)와 억양구 초(P4)에서 각각 격음과 평음 간 유의미한 VOT 차이가 나타나고(p<.001), 강세구 초에도 인간 화자에 비해 두 배 가까운 β-기울기 값이 측정되어, 인간보다 VOT 차이를 많이 사용함을 알 수 있다.

(2)



마지막으로, TTS 고연령 조건에서도 모든 위치에서 격음과 평음의 VOT 가 유의미하게 달랐다(p<.001). 그러나 TTS 의 저연령 조건과 비교하면, 세 곳의 어구 초 환경(P1, P3, P4)에서 모두 월등히 높은 β-기울기 값을 보여, TTS 내에서는 젊은 층과 고령 층의 차이가 반영되고 있음을 알 수 있다. 추가로, TTS 저연령 조건을 참조 수준으로 하는 별도의 혼합회귀 모형을 통해, 이 세 집단이 어구 초 파열음의 VOT 를 합병하는 정도가 모두 유의미하게 다름을 확인하였다.

이러한 결과는 TTS 시스템이 언어 변화의 음향적 특성을 일부 모사함을 시사하며, 이는 대규모 훈련 데이터에도 분명 포함되었을, 인간 발화 내 연령 간 음향 자질 차이를 반영하기 때문에 가능한 것으로 해석할 수 있다. 그러나 동일한 조건에서 인간이 발화한 파열음만큼 VOT 합병을 보이지 않았기에, 이에 대한 재검증과 이론적 해석이 필요해 보인다. 한 가지 가설로, 사회언어학적 화자 정체성과 관련된 이유일 수 있다. 즉, 연령 등의 사회정보가 강하게 색인된 음성형의 실현은 화자 정체성을 드러내는 사회적 행위이며(Eckert, 2008), 이와 같은 행위 주체성이 AI 음성에 결여되어 있기 때문일 수 있다. 이 해석에 대한 검증 또한 다양한 사회언어학적 변이를 변수로서 활용한 AI 발화 및 지각 연구를 통해 이어질 수 있을 것이다.

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DISCOG Sessions

사건 도식(event schema)의 중국어 구문 형성 패턴

김윤정
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본 연구는 사건 도식(event schema)이 구문 형성에 영향을 미치는 시각에서 중국어 문법의 유연성을 규명하는데 목적을 두고 있다.

서구 언어에 기반을 둔 문법 규칙으로 중국어 구문을 설명할 경우, 적지 않은 혼란과 불편함을 겪는다. 이 때문에 중국어의 문법 규칙이 매우 유연한 것으로 여겨지거나 심지어 '중국어에 과연 문법이 있는가'라는 물음이 제기되기도 한다. 대표적으로 아래의 (1)을 그 예로 들 수 있다.

(1) 吃 食堂
chī(먹다) shítáng(식당)
'식당에서 먹다'

(1)은 비문으로 간주되지 않지만 규범적인 문법 규칙에는 부합하지 않는다. 왜냐하면 동작이 이루어지는 장소는 아래의 (2)와 같이 전치사 '在'와 함께 전치사구를 이루어 동사 앞에 출현하기 때문이다.

(2) 在 食堂 吃
zài(-에서) shítáng(식당) chī(먹다)
'식당에서 먹다'

(1)의 현상은 이미 '의합법(意合法)'이라는 술어로 명명되며 중국어의 고유한 구문 특징으로 정착되었다. 그러나 의합법의 본질이 무엇인지에 대해서는 명확하게 규명되었다고 보기 어렵다. 특히 중국어에서는 위의 (1) 외에도 동일한 맥락으로 간주할 수 있는 구문들이 여전히 다수 존재한다. 이에 따라 본 연구에서는 위의 (1)과 같이 '유연한 구조'가 발생하는 원인으로, 사건 도식이 구문에 영향을 미치는 패턴에 초점을 맞추어 중국어에 보이는 특징을 규명하고자 한다. 그리고 이 논의를 아래 (3)의 구문에도 확대 적용함으로써 본 연구의 시각에 대해 객관성을 확보하고자 한다.

(3) a. 住进来 vs. 进来住
b. 坐过来 vs. 过来坐
c. 走出门外 vs. 走到门外
d. 请往邻柜办理业务 vs. 请到邻柜办理业务

Keywords: event schema, serial-verb construction, Chinese complement, Chinese preposition, Chinese character

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A Study on Physical Contact Constructions in English: A Construction Grammar Approach

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Prepositional constructions involving body parts—such as *hit him in the chest* or *grabbed her by the arm*—have drawn increasing attention in linguistic theory and pedagogy. Although a number of prepositions appear more frequently than expected in English physical-contact expressions, the criteria governing their selection remain unclear. Previous studies have addressed the issue, but concrete results are still lacking. Therefore, this study seeks to clarify the principles underlying prepositional choice in such constructions. Despite their frequency, these expressions are often taught as unanalyzed idioms, leaving learners without a clear understanding of how prepositions interact with body-part nouns. This study examines the semantic and syntactic patterns of five key English prepositions (in, on, by, around, and to) in these constructions. Based on the analysis, five types of inter-physio constructions are identified: (1) momentary slight contact, (2) momentary strong contact, (3) durational contact, (4) durational circular contact involving cylindrical body parts, and (5) metaphorical or emotional contact. Cross-linguistic data from Indo-European, Afro-Asiatic, and Niger-Congo languages reveal consistent spatial-cognitive schemas: containment, surface contact, proximity, envelopment, and directionality. These findings contribute to Construction Grammar and suggest that Universal Grammar may encode abstract spatial principles relevant to embodied language.

Prepositional constructions involving body parts—such as “hit him in the chest” ‘or “grabbed her by the arm”—have received increasing attention in linguistic theory and pedagogy. Although certain prepositions occur with greater-than-expected frequency in English physical-contact expressions, the principles guiding their selection remain unclear. Previous studies have addressed this issue, but concrete findings are still lacking. This study therefore seeks to clarify the factors underlying prepositional choice in such constructions. Despite their prevalence, these expressions are often taught as unanalyzed idioms, leaving learners without a principled understanding of how prepositions interact with body-part nouns. The analysis focuses on the semantic and syntactic patterns of five key English prepositions (in, on, by, around, and to). On this basis, five types of inter-physio constructions are identified: (1) momentary slight contact, (2) momentary strong contact, (3) durational contact, (4) durational circular contact involving cylindrical body parts, and (5) metaphorical or emotional contact. Cross-linguistic data from Indo-European, Afro-Asiatic, and Niger-Congo languages reveal consistent spatial-cognitive schemas: containment, surface contact, proximity, envelopment, and directionality. These findings contribute to Construction Grammar and suggest that Universal Grammar may encode abstract spatial principles relevant to embodied language.

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텍스트형 밈(meme)의 인지적 구성과 담화적 함의

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본 연구는 한국어 디지털 담화에서 텍스트형 밈(meme)이 짧은 발화 자극(ostensive stimulus)으로 제시되어 의미를 인지적으로 구성하고 담화적 함의를 산출하는 과정을 관련성 이론(Relevance Theory)에 근거하여 분석하는 것을 목적으로 한다. 기존의 논의가 이미지 결합형 밈에 편중되어 문자만으로 성립하는 텍스트형 밈의 인해 절차(comprehension procedure)를 충분히 설명하지 못한 경향이 있다.

이에 따라 본고는 텍스트형 밈이 담화 맥락에서 어떻게 최소한의 표현으로 최대한의 인지적 효과를 이끌어 내는지에 주목한다. 분석 대상은 '-겠냐', '카페인 수혈', '할말하않'으로 한정한다. 이들은 SNS 댓글, 실시간 채팅, 메신저, 웹툰 등에서 이미지 보조 없이도 밈으로 기능하며, 주로 부정적이고 곤란한 상황을 완충하고 태도를 간결하게 표명하는 데 사용된다. 또한, 구체적으로 1)발화 자극(ostensive stimulus)에 의해 활성화되는 2)맥락적 전제(contextual assumptions)를 포착하고, 이를 거쳐 형성되는 3)명시(explicature)와 그로부터 도출되는 4)함축(implicature)을 단계적으로 구성한 뒤, 담화 참여자에게 발생하는 5)인지적 효과(cognitive effects)를 확인한다.

한국어 디지털 담화가 다양한 플랫폼을 통해 세계적으로 확산되는 오늘날, 텍스트형 밈의 이해는 상호문화적 소통에서 필수적이다. 본고는 관련성 이론에 입각하여 한국어 텍스트형 밈의 인지적 구성 메커니즘과 담화적 함의를 체계화했다는 점에서 의의가 있으며, 연구의 결과는 한국어 교육이나 통·번역 분야의 기초 자료로 활용될 수 있다.

Keywords: Relevance Theory, test-based memes, Korean digital discourse, explicature-implicature, interpretive resemblance

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온라인 커뮤니티 여성 혐오표현의 은유 분석: [여성은 상품] 은유를 중심으로

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본 연구는 온라인 커뮤니티 담화에 나타나는 여성 혐오표현을 개념은유 이론의 틀에서 분석하여 [여성은 상품] 은유와 그 하위 체계 및 기저 사고 구조를 규명하고자 한다. 이를 위해 디시인사이드 '주식갤러리'를 대상으로 2024 년 한 해의 게시글 81,806 건을 수집하고, 이 중 여성 혐오표현이 포함된 14,845 건(18.1%)을 선별하였다. 텍스트마이닝과 워드임베딩 기법을 적용해 은유적 특성을 도출하였다.

텍스트마이닝 분석 결과, '한녀', '노괴', '아줌마'와 같은 명사와 '한녀 안 사' 등의 표현이 빈번하게 나타났다. 이는 여성을 상품 가치에 따라 사고팔 수 있는 대상으로 이해하는 [여성은 상품(WOMAN IS MERCHANDISE)] 은유가 일관되게 재현됨을 보여준다. 워드임베딩 분석에서도 '여성'이 상품 및 상거래 관련 단어들과 밀접하게 결합하는 양상이 드러났다. 이 과정에서 여성의 나이·재생산성·순결성은 상품 가치로 환원되며, [결혼은 구매 행위], [처녀는 새 제품], [기성세대는 판매자] 등 하위 은유 체계가 실제 언어 표현으로 확인되었다.

이러한 은유는 여성을 소비·거래의 대상으로 환원하여 젠더 갈등을 심화시키는 담화 전략으로 기능한다. 본 연구는 온라인 혐오 담화에 내재된 은유적 구조를 실증적으로 규명함으로써, 혐오표현 화자들이 여성에게 부여하는 가치관을 논의하고 한국 사회에서 혐오표현 연구의 필요성과 언어학적 함의를 제시한다.

Keywords: conceptual metaphor, hate speech, misogyny, DCinside Stock Gallery

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The Role of the Contrastive Pitch Accent in L2 Speakers' Interpretation of Pragmatic Alternatives

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In English, the contrastive pitch accent, which is transcribed as L+H* in the ToBI system, is often used to signal the selection of the referent among a set of salient alternatives. For example, upon hearing the pair of instructions "Click on the purple mittens. Now click on the IVORY…", listeners assume that the upcoming item must be a mitten, as the contrastive pitch accent on the color implies that the new referent only differs in color. Although L1 speakers have shown understanding of the contrastive function of the L+H* accent consistently (Dahan et al., 2002; Ito & Speer, 2008; Watson et al., 2008), it remains unclear whether L2 speakers are also able to utilize this contrastive function, with mixed results in literature (Takahashi et al., 2018; Hwang et al., 2022).

Therefore, this study examined whether Korean learners of English can make use of the contrastive function of the L+H* accent to rapidly select the upcoming referent in the visual context. Fifty-five L1 Korean speakers and 31 L1 English speakers participated in the experiment, where they were given a two-step picture selection task asking them to select the picture that matches the sentence in the audio. Following Hwang et al. (2022), the instructions were given in pairs (e.g., Click on the silver curtains. Now click on the CHERRY curtains.") with four experimental conditions, based on pitch accent location (noun/adjective) and felicitousness of the pitch accent. L2 proficiency was also measured using LexTALE (Lemhöfer & Broersma, 2012) and Cambridge General English Test.

Results revealed that unlike L1 English speakers, Korean learners showed no significant difference in reaction time between felicitous and infelicitous conditions, suggesting that the use of contrastive pitch accents in comprehension remains a challenge for L2 speakers. Proficiency did not play a modulating role, which further indicates that prosody–pragmatics mappings are not easily acquired even at advanced proficiency levels. Taken together, these findings suggest that L1 prosodic transfer may constrain L2 listeners' ability to draw pragmatic inferences from pitch accents, while also pointing to the role of learners' language background and acquisition context in shaping second language processing.

Keywords: L2 processing, pitch accent, contrastive meaning, pragmatic inference

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(A BLACKPINK) Rosé's Global Hit Song, "APT.": why the world cannot help loving it?[1]

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A BLACKPINK, Rosé, made a global sensation with her first full-length solo album, "Rosie," which comes out on Dec. 6 from Atlantic Records (New York Times, Nov. 23, 2024). The album's first single, "APT." a collaboration with Bruno Mars, is a true *bop* and has made history as the first track by a female K-pop artist to break into the Top 10 on the Billboard Hot 100 (New York Times, Nov. 23, 2024). While summarizing the general characteristics of the 'Korean Wave' like below, Puchner claimed that it gives the image of "clean fun" (2023: 300).

> The 'Korean Wave' was able to reach such a large audience because, from the beginning, it was based on a mixture of styles including rock, jazz, reggae, and *Afrobeat*. Its musical signature relies on R&B dance tracks with heavy beats, melodic bridge sections, and "soft" rap interludes, mostly sung in Korean with occasional English phrases (like "*Gangnam* style"). The videos often feature synchronized dance moves, which are less common in US-produced popular culture though well known in other traditions, including *Bollywood*. Also notable is what's not there: the violence and obscenity that often feature in US- and UK-based pop and rap culture. (Puchner 2023: 299-300)

In this vein, Rosé's "APT." is a paragon. The lyrics are a blending of Korean and English, actually, the majority is English this time. The song is funny and devoid of any obscenity and violence. The official 'music video' starred with Bruno Mars, which, as of this writing, on Sep 6, 2025, recorded a whopping 1,971,410,861 views, is even cleaner and funnier. Here, what draw our attention are two things: the song starts with "채영이가 좋아하는 랜덤 게임, 랜덤 게임 Game start" immediately followed by the repetition of "APT(아파트).", an (maybe Korean) deletion of "apart[-ment]", not in the [əˈpɑɹt-], but in that of *Konglish*, the pseudo-English used in Korea, [a̲pʰa̲tʰ-i-], and Rosé dyed her hair blonde. [a̲pʰa̲tʰ-i-] is ubiquitous in Korea. [아파트] is quite different from [əˈpɑɹt-mənt] in essence. The former everybody wants to live in, in Korea, but the latter everybody leave out, in the English-speaking countries. We can notice that Rosé enhanced her natural beauty artificially with dyeing at least. This general artificial exaltation of beauty also happens to be widespread in Korea. If we apply Forceville (2016), multimodal metaphor, meaning a metaphor that draws on two or more modes/modalities to activate mapping between the tenor and the vehicles [Richards (1936)], we find that not only the lyrics but also Rosé's blonde-dyed hair and the flashed black letters of "APT." on the screen in the music video imply the modern Korea-ness, being unnatural but advanced. That is, if we speak metaphorically, "Korea is 아파트[a̲pʰa̲tʰ-i-] and artificial enhancement of beauty." This Korea-ness helps Rosé's "APT." to captivate the world signifying an alternative to the traditional western economic development model conforming to nature more.

In addition, this approach could shed a new light on the question why K-pop? Many have challenged the puzzle but mostly focused on the indirect or supply-side factors. For example, Messerlin and Shin (2017), Koo and Koo (2022) and Lee (2024) commonly emphasized that the past cultural policy by the Korean government was pivotal. Only when we solve what distinguishes K-pop to make it intrigued to non-Korean-speaking foreigners, that is, complement their findings with more direct or demand-side factors, we can have a more tangible answer to the question.

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[1] The You-tube video of "APT." will accompany the presentation later.

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어미 상당 구성 '-어 가지고'의 전경성

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본 연구는 어미 상당 구성 '-어 가지고'가 어미 '-어서'에 비해 사태의 전경성을 유표적으로 나타내는 현상을 기술하고 그 이유를 설명하는 것을 목적으로 한다. '-어 가지고'는 선행하는 용언 부류의 제약이 거의 없고 종결형으로 출현하는 빈도가 높아 탈종속화 단계에 있는 어미 상당 구성이다. '-어서'와 '-어 가지고'는 거의 모든 의항을 공유하고 있어 유의한 문법 요소인데, 두 요소가 공유하는 의항 중 [시·공간적 배경]에 있어서는 '-어 가지고'의 출현 빈도가 상대적으로 낮다. '-어서'는 선·후행절의 비대등성을 하는 '서'를 포함하지만 '-어 가지고'는 '서'를 포함하지 않는 까닭에, '-어 가지고'가 결합한 절은 주절과의 독립성이 높고 때로는 주절이 생략되어 탈종속화된 채로 발화된다. 이러한 쓰임이 반복되면 화자는 발화하고자 하는 사태의 전경성을 강조하기 위해 무표적인 '-어서' 대신 유표적인 '-어 가지고'를 선택하게 된다.

주제어: '-어 가지고', '-어서', 어미 상당 구성, 탈종속화, 시·공간적 배경, 전경성, 표현론

한국어의 중동태(middle voice) 표현과 판결문 분석

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본 연구는 한국어에서 의미적으로 실현되는 중동태(middle voice) 표현을 탐구하고, 이를 판결문 분석에 적용하는 새로운 시도를 하고자 한다. 특히 사회적으로 큰 반향을 일으킨 '보라매 병원 사건' 판결문을 대상으로, 문법적 태(voice)의 선택이 법적 판단과 책임 귀속에 어떠한 영향을 미치는지를 분석한다.

중동태는 능동태와 수동태의 이분법을 넘어, 주어가 행위의 주체이자 동시에 그 결과의 영향을 받는 복합적 지위를 갖는 경우를 포착한다. 즉, 행위가 주체 내부에서 발생하거나 주체를 통해 발현되며 결과적으로 다시 주체에게 귀결되는 자기-귀결적 성격을 지닌다. 고대 그리스어에서는 명확히 구분되지만, 한국어에서 이를 별도의 문법 범주로 인정할 수 있는지는 여전히 논쟁적이다.

본 연구는 한국어에서의 중동태적 구문을 두 가지 유형으로 제안한다. 첫째, "-하게 되다"와 같은 표현은 '하다(능동)'와 '되다(피동)'의 융합을 통해 중동태적 의미를 드러낸다. 둘째, "이 종이는 잘 접힌다"와 같은 구문은 외부 행위자 없이 행위와 결과가 순환적으로 배치되는 자기-귀결성을 보여준다. 이를 바탕으로 "누구에게서 무엇이 어떻게 ~되다"와 같은 구조를 중동태 구문으로 제시하고, 실제 판결문에 적용하여 분석한다.

중동태적 시각의 실천적·철학적 의의는 크다. 법적·도덕적 책임이 문제되는 사건에서 지금까지 해온 대로 능동/피동이라는 단일 프레임만을 전제할 경우, 복잡한 행위의 맥락은 축소되거나 왜곡될 수 있다. 반면 능동/중동이라는 또 하나의 프레임을 도입하면, 주체를 행위의 내부에 위치시킴으로써 사건과 책임을 보다 입체적이고 다층적으로 파악할 수 있다. 본 연구는 판결문 분석을 통해, 중동태적 서술이 사건의 규범적 평가와 책임 귀속을 극적으로 전환할 수 있음을 예증한다. 이를 통해 한국어 문법 연구가 법학, 철학, 윤리학에까지 어떤 파급력을 갖는지를 평가할 수 있을 것이다.

Keywords: middle voice, responsibility attrubution, action assessment

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자료를 근거한 관형사형 어미 '-을' 혹은 '-는'의 선택

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본고의 목적은 관형사절의 하위 범주, 동사유형 · 부류에 주목하여 '-을' 혹은 '-는'을 선택하는 방법이 여러 말뭉치 자료를 이용하더라도 일치하거나 유사한 결과를 도출할 수 있는지 확인한다. 마에무라카즈아키(2017), (2019)는 「깨어라!」를 이용하여 관형사절의 하위 범주, 동사유형 · 부류가 '-을' 혹은 '-는'을 선택하는 방법을 설명하였다. 그러나 관형사절의 하위 범주, 동사유형 · 부류가 '-을' 혹은 '-는'을 선택하는 방법은 「깨어라!」 이외의 말뭉치 자료 특히 한국어 교육 현장과 밀접한 자료를 이용해도 일치하거나 유사한 결과를 도출하는지 불분명하다. 마에무라카즈아키(2017), (2019)의 연구 결과는 한국어 교육 현장과 밀접한 자료를 이용하여 관형사절의 하위 범주, 동사유형 · 부류가 '-을' 혹은 '-는'을 선택할 결과와 일치하거나 유사해야지 '-을' 혹은 '-는'을 선택하는 방법이 한국어 교육에서 효과적이라 할 수 있다.

국립국어원이 발행한 「(외국인을 위한) 한국어 문법」에서 「주어 / 목적어 – 동사 + '-을, -는' - 명사범주」를 수집한 후 마에무라카즈아키(2017), (2019)의 연구에 「한국어 문법」을 이용하여 관형사절의 하위 범주, 동사유형 · 부류가 '-을' 혹은 '-는'을 선택하는 방법을 맞춰서 일치한다, 일치하지 않는다를 판단한다. 일치 · 불일치의 판단은 마에무라카즈아키(2017), (2019)의 연구를 기준으로 한다. 「한국어 문법」에서 '-을, -는'을 포함한 주어, 목적어, 부사어 – 관형사절 및 '-을, -는'과 결합한 心理動詞、行為動詞、完成·変化動詞、瞬間動詞、移行動詞 그리고 주체 비변화 / 변화 동사, 주체 비변화 / 변화 – 객체 비변화 / 변화 동사를 수집하여 관형사절의 하위 범주가 포함하는 '-을, -는'의 출현 빈도, '-을, -는'이 결합하는 동사유형 · 부류의 출현 빈도를 고찰한다. 이를 마에무라카즈아키(2017), (2019)에 맞추면 일치하거나 유사한 경우와 불일치하거나 유사하지 않은 경우로 분류할 수 있다. 전자는 관형사절의 하위 범주, 동사유형 · 부류가 '-을' 혹은 '-는'을 하나 선택한다. 후자는 관형사절의 하위 범주, 동사유형 · 부류가 '-을' 혹은 '-는'을 하나 선택하지 못한다. 이때, 한국어 교재를 참조하여 관형사절의 하위 범주, 동사유형 · 부류가 '-을'을 쓸지, '-는'을 쓸지 확인한다. '-을' 혹은 '-는' 중 하나를 선택하지 못하면 한국어 교재가 쓰고 있는 것을 선택해서 쓴다.

한 관형사절을 형성할 적에 어느 학습자가 '-을'을 쓰고 다른 어느 학습자가 '-는'을 쓰면 의사소통 장애가 발생한다. 의사소통 장애가 발생하지 않도록 공통적으로 '-을'을 쓰거나 '-는'을 쓰거나 하기 위해 「깨어라!」뿐 아니라 한국어 교육 현장에서 이용 가치가 있는 「한국어 문법」, 한국어 교재를 이용한 '-을' 혹은 '-는'을 선택하는 연구가 필요하다.

Keywords: noun-modifying ending, the choosing of '-을' or '-는', corpus data, Korean education

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It's Giving: The Emitting Give Construction As an Instance of NULL INSTANTIATION

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This paper examines the emergent colloquial use of *give* in English from a construction grammar perspective. It specifically investigates an SNS-based construct *It's giving X Y vibes*, where the indexically accessible referent *it* is predicated by present progressive *is giving* with RECIPIENT (X) and THEME elements (nominal compound of modifier Y + a set of head noun such as *vibes*, *energy*, or *feels*). Considering that either of the complements—even both—can be suppressed (see below), this study argues that unlike the canonical account of DITRANSITIVE construction (Diessel 2015, Dixon 2005), the emitting GIVE construction inherits from the NULL INSTANTIATION (NI) construction (Ruppenhofer, 2005).

This paper collects 472 relevant tokens from the *Twitter100m_tweets* dataset (Enryu, n.d), an open large-scale Twitter dataset for NLP purposes such as training LLMs, etc. The variants are shown in (1):

(1) a. It's giving me Middle Earth vibes!
b. It's giving Judas Iscariot vibe!
c. It's giving me Mrs. Doubtfire.
d. It's giving power trio.
e. It's giving!

As illustrated above, the emitting GIVE construction ranges from fully elaborated forms to maximally reduced forms. With the form of a canonical ditransitive, (1a) conveys that *it*—an image of a map—evokes a classic fantasy aesthetic of *Middle Earth*. (1b) omits the RECIPIENT and conveys the speaker's abhorrence of someone's insincere apology, as the element Y, *Judas Iscariot* stands for betrayal. Having the head noun suppressed, (1c) conveys the message that a drink order evokes feelings of warmth and comfort much like "Mrs. Doubtfire." In (1d) both head noun and RECIPIENT are omitted. In this utterance, *power trio* refers to the three judges on a TV contest show, implying that they form an impressive team like three instruments in a great band. Finally, the most reduced form (1e) conveys a positive evaluative stance in the context of a luxury soap advertisement.

These patterns of NI resist a strict binary classification into anaphoric or existential categories. Although there is no antecedent of for RECIPIENT in (1b), the communicative context of SNS implicitly suggests there is a specific, understood recipient—the speaker, which implies a partial anaphoric quality. In addition, head noun suppressions as in (1c), would suggest existential NI due to the absence of the explicit antecedent, although according to Ruppenhofer (2005), suppressed head nouns can have anaphoric readings since they are implicitly referenced by the construction itself. Semantically, this construction idiosyncratically requires an EXPERIENCER/RECIPIENT who metaphorically "receives" the THEME element (via the metaphor ATTRIBUTES ARE POSSESSIONS) with the modifier Y encoding affective or aesthetic evaluation. Taking a usage-based approach, this paper investigates the constructional variants, and argues that the emitting GIVE construction deserves an entry in the construct-i-con, distinct from the canonical ditransitive construction.

Keywords: *It's giving X Y vibes*, emitting GIVE construction, construction grammar, null instantiation, usage-based

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A Unified Theta Marking Approach to Extraction from Adjuncts in English

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The aim of this thesis has been to provide a new theoretical approach to wh-extraction from adjuncts in English. Rather than relying on Sakumoto's (2021) phase-based analysis, this study proposes an extended theta-marking approach to account for extraction phenomena in adjunct domains. Specifically, I argue that adjunct opacity or transparency is not determined by the Phase Penetrability Condition but rather by whether the adjunct positions from which wh-elements are extracted are properly theta-marked. This approach reframes the extraction problem as a matter of satisfying Huang's (1982) Condition on Extraction Domain within the extended theta-marking framework. Under this revised framework, wh-extraction is permitted only if the adjunct positions from which wh-elements are extracted are properly theta-marked.

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고대 이집트어, 동부 수단어, 그리고 코르도판어의 술어 논항 구문 유형 비교, 사용-기반 구성문법(네트워크 모델)을 중심으로

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계통이 다르고, 분포 지역이 다르지만 인접해 있는 언어들의 유형을 비교하는 것은 언어의 본질을 이해하는 과정에서 중요한 동기를 부여한다. 고대-이집트어는 아프리카 대륙 북부 나일강 하류에 분포한 아프로-아시아어족 언어로 지구상 기록 문헌 역사가 가장 긴 언어이다(Störk 1981, Schenkel 1990, Loprieno & Müller 2012, Grossman & Richter 2014). 한편 동부 수단어는 나일-사하라 어족 언어의 핵심으로(Greenberg 1963) 나일강 중류, 상류에서 탄자니아 리프트 계곡에 이르는 지역에 분포된 언어들이다. 마지막으로 수단 남부 누바산 지역에 모여있는 일연의 잔류어들인 코르도판어는 니제르-코드로판 어족의 한 분파로 본 그룹인 니제르-콩고와 분리되어 섬처럼 떨어져 있다(권명식 2004, 3 장 §1). 이들 세 분파의 언어적 특징을 유형 차이라는 시점에서 다가가되 특히 정태적 접근을 탈피하여 역동적 시스템을 강조하는 새로운 접근법인 사용-기반 구성 문법(Bybee 1985, 2006, Langacker 1988, Goldberg 1995)을 중심으로 비교 분석하고자 한다. 특히 언어가 복잡한 역동 시스템(de Bot et al. 2017, Schmid 2020)으로 그 특성을 이해하기에 적절한 네트워크 모델(Barabási 2016, Diessel 2019, 2020, 권명식 2024a, 2025a)을 염두에 두고자 한다.

언어 구조가 영역 및 구조 층위가 다양하지만(Lehmann 2024:15), 그중에서도 특히 문장 층위의 술어와 논항 구문(권명식 2024, 2024a)을 분석 초점으로 하고자 한다. 술어가 없는 논항이나, 논항이 없는 술어만의 발화 패턴이 구조 이전의 언어 표현이지만(권명식 2017) 술어 논항 구문은 어느 정도 구조화된 최초의 발화 시스템으로 언어 보편적으로 나타나고, 그리하여 이를 비교 대상으로 하는 것이 가장 효율적인 언어 비교 방법으로 여겨진다.

이 논문은 주 관심사는 세 개 그룹의 언어들 사이 나타나는 술어 논항 구문의 유형 차이를 어떻게 하면 가장 언어 현실에 맞게 제시하느냐에 있다. 그러기 위해서 우선 기존의 전통 유형 비교 방법으로 논항과 술어의 구조를 단순성과 복잡성 척도에서 비교하고, 그리고 그다음으로 술어 논항 사이의 문법 관계가 어떤 전략으로 코딩되는지를 요약한 다음 이로써 커버 되지 않는 부분을 새로운 시각으로 조망해 보고자 한다. 여기에서는 역동적 시스템을 설명하는 네트워크 이론(Newman 2003, Solé et al. 2010)을 수용하되 객관적 언어자료의 분석으로 만족하지 않고 언어 사용자의 주관적 지식과 학습, 체험을 중시하는 인지 문법 선상에 있는 사용-기반 구성문법(Kapatsinski 2014, Diessel 2015), 특히 연결-학습(the associative learning, Kapatsinski 2018)이라는 개념을 적용하고자 한다. 언어사용은 수행으로써 일연의 처리와 소통, 그리고 인지 현상이 언어 구조에 투영된다는 점이 강조된다. 결론으로 가면 비록 술어 논항 구문의 유형 차이가 단어 및 구문 등의 차이점과 대조로 제각각 나타나지만, 궁극으로는 양립하는 서로 다른 힘의 조화와 균형으로 주어진 인지 소통 과제라는 문제를 해결하고자 고도로 진화된 최적의 역동 체계임(Steels 2000, Beckner et al. 2009)을 암시하고자 한다.

이와 같은 배경에서, 주 관심사를 구체화하기 위하여 3 장에서는 비교 대상인 세 그룹의 언어들을 개관하고, 4 장에서는 분석의 기반이 되는 새로운 시각의 구체적인 연구 배경과 핵심으로 정리하고, 5 장으로 들어가 보다 구체적으로 사례들을 바탕으로 술어 논항 구문의 패턴을 가장 단순한 것으로부터 복잡한 구문으로, 차례로 제시해 가면서 나타난 문제점들을 검토해 나가고자 한다. 그것은 담화표지, 자동, 타동 구문, 술어가 변동 및 할당 그리고 복잡한 구문으로 이어진다. 그다음 6 장에서는 종합과 토론이라는 제하에 사용-기반 구성문법 접근법이 갖는 장점에도 불구하고 나타나는 단점과

문제점이 무엇인지 고찰해 보고 이와 같은 문제점은 어떻게 해결해 나갈 것인지를 전망해 가면서(7 장) 이 논문을 마무리하고자 한다.

Keywords: Old Egyptian, Eastern Sudanic, Kordofanian languages, Usage-based construction grammar, Predicate-argument construction, typology

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Developing Korean Telephone Interaction Studies: A Comparative Conversation Analysis of Mobile and Video Call Openings

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This study analyzes informal mobile and video call openings among three Korean family members who regularly communicate via both modalities. Although phone call openings have been the focus of Conversation Analysis (CA) research (e.g., Schegloff, 1986), Korean phone call openings have not been sufficiently researched, and no previous research has focused on video call openings in Korean. To address these gaps, this study applies CA method to analyze Korean mobile and video call openings. It examines established sequences in the CA literature, such as greetings, recognition, and location/activity sequences, as well as newly identified patterns, and aims to investigate how interactional patterns differ across modalities.

A particularly notable finding is the frequent meal-related inquiries in both mobile and video calls. Although specific to Korean culture, these inquiries appear to fulfill interactional roles comparable to canonical structures in other languages, and raise questions regarding one of the findings in canonical Korean telephone conversation organization (Lee, 2006). Additionally, location sequences occur in both modalities but vary in frequency and function, while visibility-based sequences in video calls not only resemble face-to-face interactions but also exhibit preference structures similar to those documented by Wong and Waring (2020); both of the findings were made possible through the detailed CA analysis, underscoring the value of this approach for capturing nuanced interactional patterns.

Incorporating informal video calls into the study of Korean interactional openings, this research extends the scope of CA in Korean linguistics, illustrates how medium-specific affordances and constraints shape interaction, and highlights the cultural grounding of conversational practices. These contributions not only address existing gaps but also open future directions for documenting Korean interaction in a rapidly evolving communicative landscape.

Keywords: Conversation Analysis (CA), Korean telephone openings, Video-mediated interaction

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A 'Wonyoung's Optimism' and 'Lucky Vicky' from the Perspective of Positioning Theory[1]

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Since 2021, the fixed expressions—or so-called memes—'Wonyoung's Optimism' and 'Lucky Vicky,' both associated with Wonyoung Jang, a member of the K-pop girl group IVE, have circulated widely in public media and popular discourse. Despite their extensive reproduction, reinterpretation, and diffusion—particularly in connection with Jang's distinctively hyper-optimistic persona—there has been little scholarly engagement with these expressions from a linguistic perspective. Addressing this gap, the present study analyzes the two expressions within the framework of Positioning Theory (Davies & Harré, 1990/1999), with a qualitative focus on the properties and modes of positioning observed in Jang's public posts and interviews, as well as in extended media discourse. The analysis reveals how Jang simultaneously positions herself (and others) within shared discursive spaces over time, exercising notable agency by selectively adopting certain positions while actively rejecting others. The study further identifies four predominant positioning modes (van Langenhove & Harré, 1999) evident in the data: second-order, performative, personal, and deliberate self-positioning. These findings demonstrate that the two fixed expressions function as conventionalized positioning triggers, substantially constraining the range of possible subject positions within the discourse (Kim 2020, etc.).

Keywords: Wonyoung's Optimism, Lucky Vicky, Positioning Theory, Conventionalized Positioning Trigger, Wonyoung Jang, IVE

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고대 무슬림 이주민 혐오에 대한 말뭉치 보조 담화 분석
- 대구 이슬람사원 건축 사건을 중심으로 -

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본 연구는 '대구 이슬람사원 건축 사건'을 중심으로 대한민국 사회에서 나타난 무슬림 이주민 혐오 담화를 말뭉치 보조 담화 분석의 방법론(Stubbs 1996; Partington 2006; Baker 2006)으로 분석하는 것에 목적이 있다. 본 연구의 목표 말뭉치로는 해당 사건과 관련된 유튜브 댓글과 네이버 기사 댓글을 수집하였고, 기구축 혐오 담화 말뭉치를 병합하여 참조 말뭉치를 구축하였다. 본 연구의 절차는 ㄱ) 핵심어 분석, 1 차-2 차 공기어 분석, N-gram 분석, ㄴ) 용례 색인 추출 및 분석, ㄷ) 담화적 운율 분석, ㄹ) 무슬림 혐오 담화의 1 차·2 차 확산 양상 분석의 절차로 이루어진다.

분석 결과는 다음과 같다. 첫째, 무슬림에 대한 혐오 담화는 2022 년 10 월 '돼지머리 방치 사건'을 기점으로 기존의 치안과 관련된 부정적 담화를 포함하며, 문화적 폭력(Galtung 1990)의 상징으로 '돼지고기' 등을 활용한 혐오 담화로 변화하였다. 둘째, 담화적 운율 분석 결과, 외집단인 무슬림 이주민에 대한 명시적 차별이 담화 공동체에서 고착화된 양상이 나타났다. 셋째, 무슬림 이주민에 대한 혐오 담화는 '무슬림 지지자', '타 종교', '지역', '정치적 성향' 등으로 확산되는 양상을 보였다.

결론적으로 본 연구는 말뭉치 보조 담화 분석의 단계적 적용을 통해 무슬림 이주민 혐오 담화의 언어적 양상과 확산 메커니즘을 실증적으로 규명하였다. 이는 개별 화자의 언어 윤리를 넘어 사회적·정치적 갈등과 긴밀히 맞물린 담화 구조를 밝히는 데 기여하며, 향후 다문화 사회에서의 혐오 표현 대응에 기초 자료를 제공할 수 있을 것이다.

Keywords: 말뭉치 보조 담화 분석, 대구 이슬람사원, 무슬림, 혐오 담화, 혐오의 확산

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KSLI Sessions

Comparing LLMs and humans in the gender classification of Korean names

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Male and female names have different phonotactic characteristics in many languages such as English (Slater and Feinman 1985, Cutler et al. 1990, Wright et al. 2005), Cantonese (Wong and Kang 2019), Japanese (Shinohara and Kawahara 2013), Mandarin (Chen and Kenstowicz 2022), French (Sullivan and Kang 2019, 2025), Korean (Cho 2021a, b, 2024), and Bengali (Kim and Go 2024). For example, female names tend to have more sonorants and likely end with vowels than male names in English, French (Sullivan and Kang 2019), Cantonese (Wong and Kang 2019), and Korean (Cho 2021a).

The gender-related phonotactic characteristics are not deterministic but probabilistic. For example, sonorants are more frequent in female names than in male names, but it does not mean that sonorants never appear in male names. The presence of sonorants merely increases the probability of a name sounding female. Therefore, gender-name relationships are more adequately modeled using probabilistic models, such as the maximum entropy model of phonotactics (Hayes and Wilson 2008). However, studies have shown that neural network models correlate better with human judgments on gender-name relationships than the maximum entropy model (Cho 2021b, 2024).

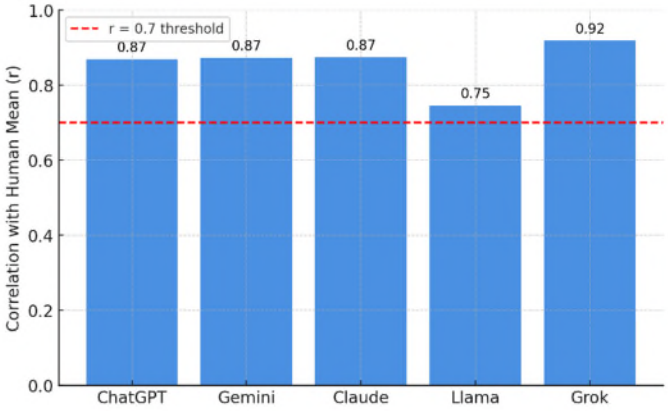
Large language models (LLMs) are large-scale deep neural networks built upon the Transformer architecture (Vaswani et al. 2017, Brown et al. 2020) and thus expected to exhibit human-like judgments to some degree. With the advent of LLMs, studies have compared the performance of different LLMs (e.g. Iannantuono 2024, Ji et al. 2025), as well as that of LLMs and humans (Oh et al. 2025, Wang et al. 2025). In this vein, the present study explores the question of whether, and to what extent, LLMs make judgements about the gender of Korean names, as humans do. The judgments of various LLMs about the gender of Korean names are compared with those of humans.

The LLMs compared in this study are ChatGPT, Gemini, Claude, Llama, and Grok (gpt-5-chat-latest, gemini-1.5-pro-latest, claude-Sonnet-4-20240514, Meta-Llama-3.1-8B-Instruct-Turbo, and grok-3). Test names were 50 low-frequency names from the Family Relations Registration Systems. Low-frequency names were used to prevent both models and humans from responding based on real people's names rather than on sound. Each model was asked to respond whether a name sounds male or female on a 5-point Likert scale (1: very likely female, 2: likely female, 3: likely male or female, 4: likely male, 5: very likely male). Each model answered the entire list 30 times, resulting in 1,500 responses per model (50 names × 30 iterations). It is intended that each iteration simulates a survey respondent (corresponding to 30 respondents). The process was automated through Python scripts in Visual Studio, using model-specific API keys. The temperature was set to 0.8 across all the models to induce variation in their outputs. The prompts were the same across the models.

The models' answers were compared with human subjects' judgments on the gender of the names. Fifty human respondents were surveyed on an online survey platform (Nownsurvey) and a Google Form posted on a university community board, 25 each. Human subjects judged the gender of the Korean names on a 5-point Likert scale, using the same prompt provided to the AI models.

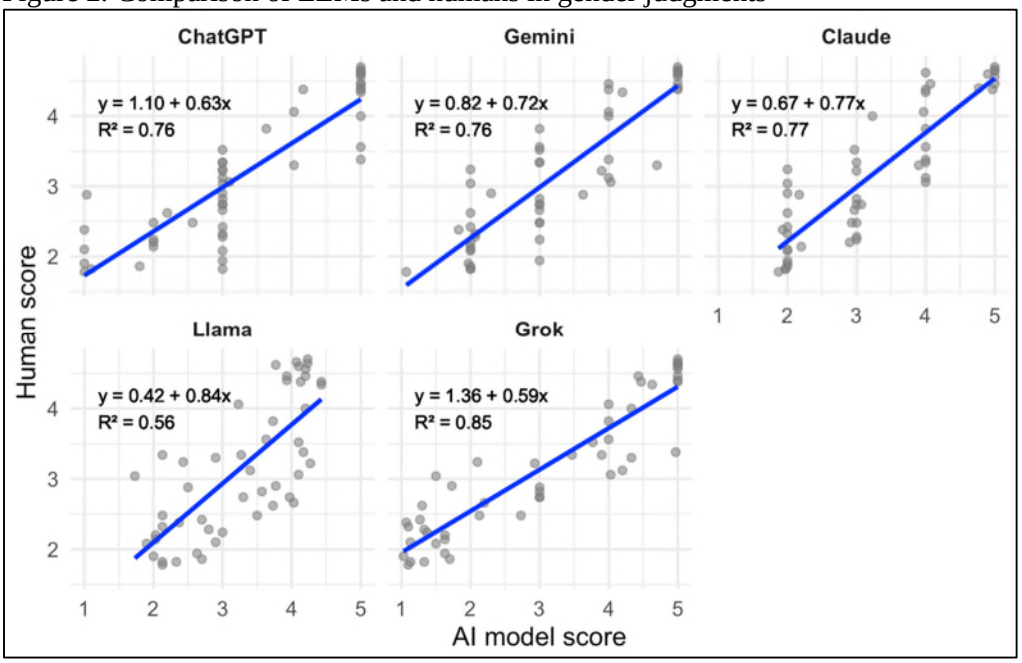
The results show that overall, LLMs correlate well with humans in the judgment of the gender of Korean names ($r=0.75\sim0.92$), as Figure 1 shows. The highest correlation is found with Grok ($r=0.92$), followed by Claude, ChatGPT and Gemini with the same performance ($r=0.87$), and the lowest correlation was found with Llama ($r=0.75$). Figure 2 shows the plot comparing LLMs' and human's judgments with the determination coefficients. Grok shows the highest correlation, followed by Claude, ChatGPT/Gemini, and the lowest is found with Llama. The results of the present study show that LLMs are able to make judgements about the gender of Korean names in ways similar to humans, although the strength of the correlation differs across models.

Figure 1. Correlation between each model and human mean judgments



Model	*r*	r^2
ChatGPT	0.87	0.76
Gemini	0.87	0.76
Claude	0.87	0.77
Llama	0.75	0.56
Grok	0.92	0.85

Figure 2. Comparison of LLMs and humans in gender judgments



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레벤슈타인 편집 거리 알고리즘을 이용한 법률 용어 오탈자 자동 교정 시스템 제안

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우리나라의 법률 용어는 한자어, 일본식 용어, 전문 용어 등이 섞여 있어 이해하거나 활용하기에 어려움이 있다. 이러한 문제를 해결하기 위해 법제처는 2006 년부터 '알기 쉬운 법령 만들기' 사업을 진행하고 있지만, 여전히 법률 문서와 판례에는 어려운 용어가 빈번하게 등장한다. 따라서 본 연구는 법률 용어에 대한 사용자들의 접근성을 높이고자 잘못 사용된 법률 용어를 자동으로 교정하는 시스템을 제안한다.

연구에 사용된 데이터는 크게 세 가지로 구성된다. 첫째, 한국법제연구원(KLRI)의 법령용어 사전, 둘째, 국립국어원의 '우리말샘'을 기반으로 한 약 100 만 개의 한글 단어 사전, 셋째, 대법원 종합법률정보에 공개된 "화제의 판례" 880 건으로부터 추출된 주요 단어들이다. 이렇게 구축된 방대한 말뭉치를 Levenshtein(Edit) Distance(이하 LD) 알고리즘에 학습시킴으로써, 잘못 사용된 법률 용어를 교정하는 알고리즘을 제안한다.

연구의 방법론적 특징은 한국어의 음소 단위 분리를 통해 LD 알고리즘의 한계를 보완한 점이다. (1)과 같이 "근누계약"이라는 잘못된 입력을 "근로계약"으로 수정하는 과정에서, 단순 음절 단위 비교가 아닌 자모 단위로 분리하여 편집 거리 계산을 적용하였다.

(1) a. 표 1

	오탈자 수정	
음절 단위	근누계약	근로계약
자모 단위	ㄱㅡㄴㄴㅜㄱㅖㅇㅑㄱ	ㄱㅡㄴㄹㅗㄱㅖㅇㅑㄱ

이를 통해 유사도가 높은 후보 어휘 중 정확한 법률 용어를 도출할 수 있었으며, 실험 결과 평균 96%의 정확도를 보여주었다. 또한, 실제 사용자 36 명을 대상으로 진행한 설문조사에서는 정확성, 용이성, 정보성, 사용성 등 네 가지 항목 모두에서 긍정적인 평가가 도출되었다.

본 연구에서 제안하는 LD 기반 자동 교정 시스템은 어려운 법률 용어를 일반인들도 쉽게 사용하기 위한 목적으로 진행되었으며, 법률 문서에 대한 사용자의 접근성을 높일 수 있는 토대를 마련한다는 점에서 의의가 있다. 또한, 정확해야 하는 법률 용어의 특성상 더 높은 정확도를 확보하기 위해서는 보다 많은 양의 어휘 정보가 필요하며, 인공지능 알고리즘을 병합하여 활용하면 오탈자 교정에 있어 더 높은 정확도가 도출될 것으로 사료된다.

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Experimental Evidence for the Base-Generation Analysis for *Kes*-Cleft in Korean

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The Korean kes-cleft construction in (1) has been analyzed either as involving NP movement as in (2) or as a base-generated structure as in (3). We report two online rating experiments supporting the base-generation account. In the movement analysis, the dislocated NP originates as an argument of the embedded verb and moves leftward with the remnant clause (Jo J.-M., 2005; Kim & Lee, 2008; Hiraiwa & Ishihara, 2002; Choi 2011, and many others). In contrast, the base-generation analysis posits that the NP is directly merged as the copula's complement (Hoji 1990, Sohn 2001, Kizu 2005, Kang 2006, and many others). A key diagnostic is case marking: if the NP is an argument of the verb, structural Case should be available; if it is generated as the copula's complement, Case assignment should be blocked.

(1) John-i manna-n kes-un [Mary]-i-ta.
John-$_{NOM}$ meet-$_{ADN}$ kes-$_{TOP}$ Mary-$_{COP}$-$_{DECL}$
Who John met is Mary.'

(2) [$_{TopP}$ [John-i t_i manna-n kes]$_j$-un [$_{CP}$ Mary$_i$ t_j]-i-ta.
John-$_{NOM}$ meet-$_{ADN}$ kes-$_{TOP}$ Mary -$_{COP}$-$_{DECL}$
Who John met is Mary.'

(3) [$_{Opi}$ John-i t_i manna-n kes]-un [$_{NP}$ Mary$_i$]-i-ta.
John-$_{NOM}$ meet-$_{ADN}$ kes-$_{TOP}$ Mary-$_{COP}$-$_{DECL}$
'Who John met is Mary.'

Experiment 1 (n = 96) tested the distribution of accusative case in a 2 × 2 × 3 design (NP case, Numeral Classifier case, and Construction Type: Declarative vs. kes-cleft vs. Copular) to test whether the assumption that accusative case for canonical arguments can be freely realized in Korean also holds in cleft and copular constructions. A sample set of items is shown in (4).

(4) a. Kyengsu-ka [sosolchaek(-ul) sey kwon(-ul)] ilk-ess-ta.
Kyengsu-$_{NOM}$ novel-$_{ACC}$ three CL-$_{ACC}$ read-$_{PAST}$-$_{DECL}$
"Kyengsu read three novels."

b. Kyengsu-ka ik-un kes-un [sosolchaek(-ul) sey kwon(-ul)]-i-ta.
Kyengsu-$_{NOM}$ read-$_{ADN}$ kes-$_{TOP}$ novel-$_{ACC}$ three CL-$_{ACC}$-$_{COP}$-$_{DECL}$
"What Kyengsu read was three novels."

c. Tatumchu junbimul-un [sosolchaek(-ul) sey kwon(-ul)]-i-ta.
next week supplies-$_{TOP}$ novel-$_{ACC}$ three CL-$_{ACC}$-$_{COP}$-$_{DECL}$
"The supplies for next week are three novels."

A linear mixed effects model revealed a significant three-way interaction, $F(2, 2174) = 688.20$, $p < .001$. Follow-up two-way analyses showed restricted accusative case marking in *kes*-cleft and copular constructions, with declaratives showing the smallest effect, as shown in Figure 1.

Experiment 2 (n = 96) examined genitive–nominative alternation for inalienable NPs in a 2 × 3 design (NP case: Genitive vs. Nominative; Construction Type: Declarative vs. kes-cleft vs. Negated kes-cleft). A sample set of items is given in (5).

(5) a. Pumonim-i [Chaewoni-**uy/-ka** nun]-i yeppeu-tako malsseumhasyass-ta.
Parent-NOM C-**GEN-NOM** eye-NOM beautiful-COMP said-DECL
"Parents said that Chaewon's eyes are beautiful."

b. Pumonim-i yeppeu-tako malsseumhasin-kes-un [Chaewoni-**uy/-ka** nun]-i-ta.
Parent-NOM beautiful-ADN said-kes-TOP C-**GEN-NOM** eye-COP-DECL
"What parents said beautiful was Chaewon's eyes."

c. Pumonim-i yeppeu-tako malsseumhasin-kes-un [Chaewoni-**uy/-ka** nun]-i an-i-ta.
Parent-NOM beautiful-ADN said-KES-TOP C-**GEN-NOM** eye-NOM NEG-COP-DECL
"What parents said beautiful was not Chaewon's eyes."

Results revealed a significant main effect of NP case, $F(1, 1610) = 1421.69$, $p < .001$, and an interaction, $F(2, 1610) = 55.99$, $p < .001$. Pairwise comparisons showed that nominative-marked inalienable NPs were most severly penalized in the two cleft constructions, as shown in Figure 2.

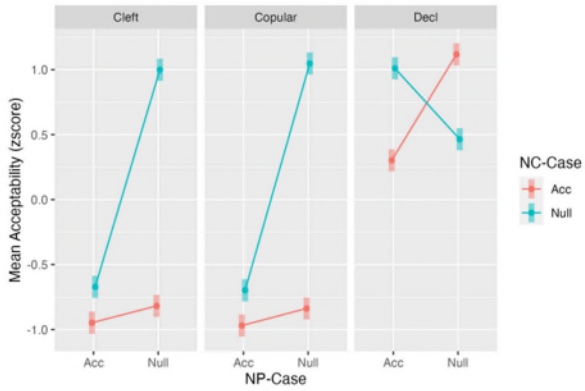

Figure1. Results of experiment 1

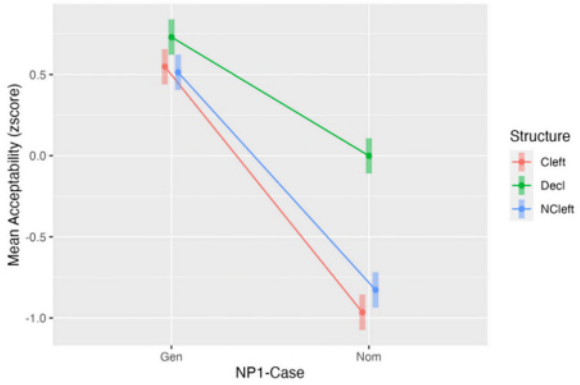

Figure 2. Results of experiment 2

Together, these findings provide empirical evidence for the base-generation analysis: dislocated NPs in kes-clefts lack structural Case, unlike canonical arguments. We discuss implications for the theory of structural Case, particularly the restriction that Case can appear when the NP is not linearly adjacent to the copula, and for related constructions cross-linguistically.

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Interpreting Indirectness in the Chungcheong Dialect: An Experimental Study

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This study examines how indirect speech acts are recognized and interpreted in the Chungcheong dialect of Korean. Since Grice's (1975) Cooperative Principle and Searle's (1975) seminal work on indirect speech acts, research has emphasized the central role of indirectness in pragmatics. Yet, little is known about how dialectal variation shapes the interpretation of indirect speech. Chungcheong dialect is often described as characteristically indirect and mitigated in everyday interaction, making it an ideal test case for investigating the interplay between dialect and pragmatic inference.

Building on recent experimental and computational work on indirect speech acts (Lee & Pinker 2010; Boux et al. 2023; Koo et al. 2025), this study addresses three questions: (i) to what extent can Seoul Korean speakers (out-group) successfully interpret Chungcheong indirect speech acts?; (ii) how do in-group (Chungcheong) and out-group (Seoul) speakers differ in accuracy and certainty when interpreting the same items?; (iii) do different subtypes of indirectness vary in their interpretability across groups?

To address these questions, we designed a mixed factorial experiment. Participants from Chungcheong and Seoul are presented with short dialogue containing target utterances in Chungcheong dialect. Target utterances vary by speech type, including declaratives used for acceptance/rejection, declaratives used for requests/suggestions, and interrogatives used for requests. For each item, participants are asked to identify the speaker's intended meaning and to rate their confidence on a Likert scale. Mixed-effects regression models will be used to analyze whether group membership and speech act type interact to affect accuracy and certainty.

Although the analysis is ongoing, the study is expected to provide new insights into how dialectal background influences the comprehension of indirect speech acts. More broadly, it contributes to the integration of classical pragmatic theory with experimental investigation of regional speech varieties, highlighting how dialect-specific indirectness shapes human interpretation and may also inform future work on AI modeling.

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Rhetorical questions with reportative evidentiality: a case study of Korean *-tani*

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Kang K.-Y. (2020) points out that Korean sentential ending *-tani* can have three different usages – rhetorical questions, echo questions, and exclamatives – and he further argues these three usages should be analyzed as three different homonyms. Among these three usages, this paper focuses on the first instance of *-tani*, that is *-tani* in rhetorical questions, which is exemplified in (1):

(1) a. Yocum nalssi-ka way ilehkey chwup-tani?
Nowadays weather-Nom why like.this cold-*tani*
(lit.) 'Why is it so cold nowadays?'
Implication: I don't know why it is so cold nowadays. (Chen 2016: 107)

b. Nen ettehkey kulen sayngkak-ul ha-n-tani?
You.Top how that.kind thought-Acc do-Pres-*tani*
(lit.) 'How can you think like that?'
Implication: I couldn't believe that you can think like that. (Park N. 2013: 66)

Many previous studies, including Kang K.-Y. (2020) himself, have analyzed *-tani* in (1) as unrelated to quotative constructions (and therefore unrelated to reportative evidentiality, which is known to be closely related in the process of grammaticalization), especially given that questions like (1) do not seem to require any reportative evidence, either from the speaker or the addressee. However, in this paper I try to show that, if we assume a (probably covert) reportative evidential we can explain the semantics and pragmatics of rhetorical questions like (1) in a compositional way. Specifically, I attempt to demonstrate that, with the reportative evidentiality, the standard semantics of questions (Hamblin 1973, Karttunen 1977, a.o.), the interrogative flip (Lim 2010, a.o.), the context where the speaker does not expect the addressee to have relevant evidence regarding the prejacent, as well as the at-issue variability with evidentials (Lim et al. 2025), the rhetorical meaning of questions with *-tani* like (1) naturally follow. Under this analysis, for example, the rhetorical question (1a) would roughly mean: 'The speaker expects the addressee to answer the question of why it is so cold nowadays, based on the addressee herself's reportative evidence, but obviously she does not seem to be able to do so.' Finally, I also try to formalize this idea in terms of inquisitive semantics (Ciardelli et al. 2019, a.o.), and consider the possibility where Kang K.-Y.'s (2020) three usages of *-tani* receives a unified analysis, as suggested by Lim (2023).

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Interjections as a negative/positive irony-operator in English

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1. Introduction

This paper proposes the *Interjectional Framing Theory (IFT)* for English, providing a systematic account of how interjections contribute to ironic meaning in spoken discourse. While irony has traditionally been explained through semantic incongruity (Searle 1979), echoic mention (Wilson & Sperber 1981), pretense (Clark & Gerrig 1984), or relevance (Wilson & Sperber 2012), little attention has been paid to the *pragmatic role of interjections*—small, seemingly peripheral tokens such as *oh, yeah, ah, well, huh.* IFT demonstrates that these interjections are not incidental fillers but purposeful choices as *stance-framing devices.* These interjections highlight a stance gap between the literal propositional content and the speaker's evaluative stance, thereby producing *negative or positive irony.*

2. Data analysis

Conversational data of five most frequently used interjections reveals systematic patterns, as summarized in Table 1 below: (i) *Yeah* and *well* often function in evaluative irony, shifting between feigned agreement (*Yeah, right*) or mock appraisal (*Well, aren't you smart*); (ii) *Oh* is the most versatile, toggling between exasperation (*Oh great*) and amazement (*Oh wow!*); (iii) *Ah* often conveys mock approval in negative irony (*Ah, lovely, it's raining again*) but also joyful disbelief in positive irony (*Ah, get out of town!*); and (iv) *Huh* expresses contemptuous surprise (*Huh, genius move*) or mild admiration (*Huh, look at that!*).

Table 1. English interjections as irony triggers

Interjection	Irony Type	Example	Function / Effect
yeah	Negative irony	*Yeah, right, that'll save us.*	Marks forced agreement → ridicule / disbelief
	Positive irony	*Yeah, sure, you "can't sing" — listen to you!*	Playful pseudo-doubt → hidden praise
oh	Negative irony	*Oh, great, another Monday deadline.*	Expresses disapproval through exaggerated "surprise"
	Positive irony	*Oh wow, shut up — you actually won?!*	Intensifies amazement, affectionate disbelief
ah	Negative irony	*Ah, lovely, it's raining again.*	Mock approval → discontent
	Positive irony	*Ah, get out of town, you're amazing!*	Laugh-like cue → joyful bonding
well	Negative irony	*Well, that was just brilliant… not.*	Frames mock evaluation, contrastive stance
	Positive irony	*Well, would you look at you, superstar!*	Mild teasing → supportive recognition
huh	Negative irony	*Huh, genius move—spill coffee on the laptop.*	Signals contemptuous surprise
	Positive irony	*Huh, look at that, you actually nailed it!*	Half-mock astonishment → friendly admiration

3. Prosodic patterns

We show how the prosodic dimension is crucial to achieve the intended irony stance: *flat or falling contours* (deadpan, sighing) are associated with negative irony, while *rising or playful contours* (exaggerated pitch span, laugh-like bursts) generate positive irony. Depending on prosodic contour and context, English interjections can yield *negative irony* (criticism, ridicule, dismissive sarcasm) or *positive irony* (playful bonding, affectionate disbelief). For example, (1) uses a flat, falling prosody on *yeah* to mark dismissive sarcasm, creating negative irony. By contrast, (2) employs a rising, playful prosody on *yeah* to convey mock doubt and admiration, producing positive irony. Similarly, (3) frames complaint through exaggerated surprise, while (4) dramatizes delight through widened pitch, expressing positive irony:

(1) *Yeah, right, that's going to fix everything.*
(2) *Yeah, sure, you "can't cook"—and then you serve this amazing meal!*
(3) *Oh great, the printer jammed again.*
(4) *Oh wow, shut up—you actually won the award?!*

The prosodic patterns of various interjections in ironic contexts can be summarized as follows.

(5) **a. Negative irony prosody**: flat intonation, downward final pitch, lengthening (*weeeell*).
b. Positive irony prosody: rising intonation, laugh bursts, widened pitch span (*oh woooow!*).

4. Main Proposal: Based on the observations, IFT proposes the following four claims: **First,** interjections can function as a device to index *speaker stance*. Second, the speaker stance of each interjection is *bivalent* between mockery and affection; the same interjection can flip to opposite irony depending on prosody and stance alignment. Third, *prosody* matters: flat or exaggerated downward intonation triggers negative irony; upward, laugh-like intonation triggers positive irony. Finally, *context* matters: negative irony thrives in conflict or complaint contexts, while positive irony thrives in friendship or play contexts.

5. Implications: The implications of the current study are both theoretical and practical. Theoretically, this account strengthens the argument that interjections are *stance operators* central to discourse organization, comparable to discourse markers but more affectively charged. It shows how irony can be systematically predicted from interjectional use, prosody, and context. Practically, IFT offers robust cues for *computational sentiment analysis and sarcasm detection*: sequences like *yeah right*, *oh great*, and *well aren't you* strongly predict negative irony, while *oh wow*, *yeah sure!* (with exclamatory intonation), and *ah get out!* predict positive irony. Modeling such interjectional cues can improve irony detection in spoken corpora, dialogue systems, and social media analytics.

By focusing on English interjections, this paper highlights how small, easily overlooked words serve as gateways to complex pragmatic nuance. We show how interjections systematically frame irony, bridging the lexical, prosodic, and interactional dimensions of speech, and demonstrate that irony is less about hidden meaning and more about *stance-framing through micro-pragmatic signals.*

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Korean Quantification in Abstract Meaning Representation

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Motivated by Lee et al. (2025) and especially Bunt and Lee (2025), this paper explores how the meaning of quantified sentences in Korean is represented in Abstract Meaning Representation (AMR, Banarescu et al. (2013)). AMR represents the meaning of sentences in language by abstracting away from syntactic variations, while focusing on predicates, such as events or properties. These predicates are represented as being supported by their arguments and adjuncts (modifiers) as predicate participants.

The overall phenomenon of quantification in Korean can be complex, just as it is in other languages. To address this complexity in quantification, we adopt AMR to be free of analyzing the syntax of quantification, as opposed to syntax-driven semantics like Montague semantics (Montague, 1974), which relies on categorial grammar for the prerequisite syntactic analysis. We also adopt Uniform Meaning Representation (UMR, 2022), an extension of AMR, to treat scope in quantification.

Quantifiers in Korean modify either nominal or verbal phrases with some syntactic variations.

(1) a. 어제 **모든** 사람이 **각자** 열심히 뛰었다. Yesterday **all** the people ran at their best.
b. 사람들이 어제 **모두** 뛰었다.
c. 어제 사람들이 **다들** 열심히 뛰었다.

Such syntactic differences are ignored in AMR or UMR, as their meaning is represented equally as in Representation (2):

(2) Quantification and Scope Relations

```
(s / scoping
   :case1 (n \ narrower
             :arg1 e
             :arg2 y)
   :case2 (w \ wider
             :arg1 e
             :arg2 x)
   :domain (e \ 뛰다 run
              :agent (x \ 사람 person
                        :quant (a \ all)
                                 :distributed yes)
   :time (y / 어제 yesterday)))
```

Representation (2) is interpreted as saying that an event of running (a Marathon) was held yesterday, in which everyone participated, but each at their own pace, distributively.

AMR constrains the detailed use of the PENMAN notation by appropriate logical forms. Otherwise,

PENMAN forms may be overloaded with every possible detail. Representation (2) derives its logical form, focused on the event *e* of running, as below:

(3) Logical Form in First-Order Predicate Logic
$\exists y \exists e$ [*instant*(*y, yesterday*), *instant*(*e, run*), $\forall x$[*instant*(*x, person*) $\rightarrow$[*agent*(*e, x*), *distributed*(*x*)]]

All the concepts, such as *yesterday, run*, and *person*, are instantiated or reified as strictly first-order objects by introducing the relation *instance*. The notion of distributivity over quantifiers implies that agenthood is distributed over the set of all runners, each involving a subevent of their own.

The PENMAN notation form is a linear string, but structured by bracketing with parentheses. Single-rooted, traversable, directed, acyclic graphs *validate* the formulation of structured PENMAN strings. This is an essential feature of AMR that enables computational scalability. AMR and its extended version, UMR, have thus three interactive representation formats, as briefly sketched in this paper.

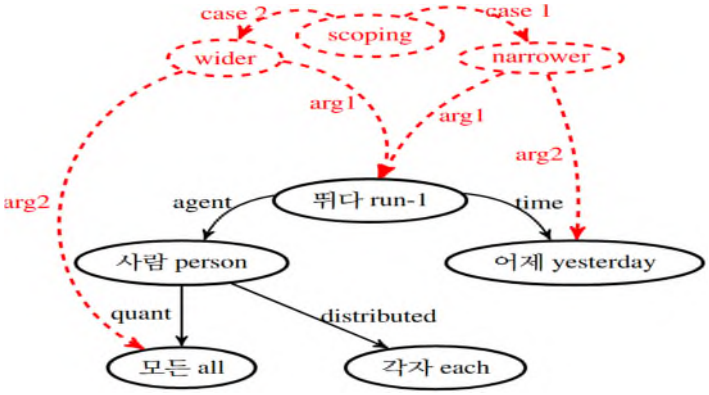

Figure 1: Graph Representation of Scoping

A question remains concerning how to interpret these representations. Logical forms can be submitted to a situation-theoretic interpretation, where each model is constrained to be a small world, called a *situation*. To interpret Logical Form 3, we may construct a situation in which a marathon contest was held yesterday, or a day before DCT, and fifty people applied to run. If fewer than fifty people had run, then what was represented by Logical Form (3) is considered to be false, and so on. We conclude that, given an appropriate interpretation model, much of the underspecified information in the representation is appropriately processed, thereby lessening the burden of creating complex representations.

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Honorifying without mentioning: The case of Korean *si*

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Introduction

Korean marks the verb with *si* when the grammatical subject is of 'high' status, as in (1a). Recently, a non-canonical usage of *si* has emerged as a hallmark of customer service contexts (Brown 2015). In (1b), the grammatical subject is *coffee*, but *si* appears to honorify the addressee.

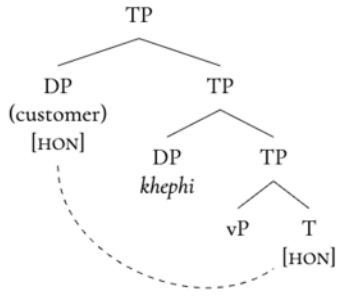
(1) a. sensayngnim-kkeyse o-**si**-ess-ta.
teacher-HON.NOM come-SI-PAST-DECL
'The teacher came.'
b. khephi nao-**si**-ess-supni-ta.
coffee come.out-SI-PAST-ADDR.HON-DECL
(To the customer) 'Your coffee is ready.'

Two questions naturally arise. First, how can *si* be licensed in the absence of an overt honorific nominal? Second, how does *si* end up honorifying the addressee, deviating from its standard usage?

Proposal

Our primary claim is that Korean *si* is uniformly subject honorification. We propose that (1b) is actually a Multiple Nominative Construction (MNC) (Yoon 2015), in which the higher subject position is occupied by a null DP referring to the customer. Importantly, this null DP is not in a syntactic dependency relation with a higher Addressee argument/head (contra Pak 2022).

We adopt Saito's (2016) analysis of MNCs, according to which multiple subjects occupy specifier positions of T. Following Kim & Sells (2007), we treat [HON] as a privative feature. For (1b), the null DP that refers to the customer undergoes Spec-Head agreement with T, thereby resulting in the spell-out of *si* (along with the relevant tense morphology).



(2)

Prediction

We now turn to a crucial prediction made by our analysis. Under the current proposal, non-canonical *si* occurs as the result of agreement between T and a (possibly null) subject bearing [HON]. Note that this subject need not necessarily refer to the addressee. Therefore, we predict occurrences of non-canonical *si* even when the addressee and the overt subject are both deprived of [HON] features. This prediction is borne out, as in (3).

(3) a. Context: A customer's coffee is ready, but the new server is slacking off.
The annoyed barista reprimands the server, pointing towards the customer.
khephi nao-**si**-ess-e. ppalli il-hay-la.
coffee come.out-SI-PAST-DECL.PLAIN quickly work-do-IMP
'(That customer's) coffee is ready. Hurry up and get to work.'

b. Context: Professors A and B are close friends. They are gossiping about Dr. Kang, a highly respected linguist and head of the department.
(kang.kyoswunim-i) atul-i seoultae tuleka-**si**-ess-e.
(Professor.Kang-NOM) son-NOM SNU go.in-SI-PAST-DECL.PLAIN
'(Professor Kang's) son got into SNU.'

In (3a), the overt subject *coffee* cannot be what is hosting *si*. The addressee (the lazy server) cannot be who is being honorified either, as evidenced by the speaker's (the annoyed barista) use of the imperative *la* (cf. Portner et al., 2019). The only viable candidate is the *customer*, the null higher subject. The same reasoning applies to (3b), where the overt subject *son* and the addressee are both ineligible to host *si*, which nonetheless surfaces to honorify *Dr. Kang*. Here as well, the plain speech-style particle *e* is employed. *e*, just like *la*, is incompatible with honorific addressees.

Embeddability

The current analysis has important implications for our understanding of honorific markers, particularly with respect to their embeddability. Two types of honorific markers have been distinguished in the literature — 'referent' vs. 'addressee' honorifics (Comrie 1976) or 'propositional' vs. 'performative' honorifics (Harada 1976) — with only the referent/propositional type being embeddable. As pointed out by Ye & Ahn (2025), non-canonical *si* challenges this traditional distinction, since it can occur in embedded environments while apparently honorifying the addressee as in (4). This issue does not exist under our proposal, which maintains that *si* is uniformly subject honorification.

(4) [cwucha-nun mwulyo-**si**-la-ko] cenhay-tallay-yo.
parking-TOP free-SI-DECL-COMP relay-give-DECL.POLITE
'They wanted me to relay [that parking is free].'

Comparison to prior analyses

Kim (2019) analyzes non-canonical *si* as allocutive agreement, while Pak (2022) has an MNC structure akin to ours, but with the higher DP bound by the Addressee argument, projected higher in the syntax. A shared consequence of their proposals is that non-canonical *si* necessarily honorifies the discourse addressee. In light of (3), we have already shown that this idea is untenable.

Ye & Ahn (2025) take a semantic approach, arguing that *si* identifies a relevant thematic argument as a free variable and contributes a use-conditional meaning that it is higher-ranked than the speaker. Their analysis shares with ours the core insight that instances in which *si* appears to honorify the addressee should be analyzed as cases of coreference. However, the notion of 'identifying a salient thematic argument' is not sufficiently clear, leaving unexplained why *si* cannot appear in (5). Our intuition is that the customer bears no less significance to the event as a recipient/affectee in (5) than in (1b). For us, the ungrammaticality of *si* in (5) follows straightforwardly: MNCs are known to occur only with stative predicates (Yoon 2018), so the *customer* cannot be a higher subject in (5).

(5) khephi tuli-(***si)**-lkey-yo.
coffee give.HON-SI-FUT.INT-DECL.POLITE
Lit. '(I) will give (you) coffee.'

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Specificational *kes*-Clefts as Focus-Background Structures in Korean

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Following Higgins (1973), copular clauses are typically classified into equative, predicational, and specificational types. Specificational clauses, unlike predicational ones, do not attribute a property to the subject; rather, they identify the value of a variable introduced by the subject (Mikkelsen 2005). In Korean, specificationals frequently feature *kes*-headed expressions, which give rise to distinctive syntactic and interpretive patterns not found in English. This paper offers a detailed analysis of Korean specificational *kes*-clefts, with particular attention to sentences such as (1b).

(1) a. *[$_{XP1}$ 이 여자]는 [$_{XP2}$ 철수가 만난 것]이다. (predicational, $\lambda P_{<e,t>}\lambda x_{<e>}[P(x)]$)
b. [$_{XP1}$ 철수가 만난 것]은 [$_{XP2}$ 이 여자]이다. (specificational)

The pre-copular *kes*-phrase is referential (Jhang 1994), denoting [-HUMAN] individuals. The ungrammaticality of (1a) thus results from a feature clash between [+HUMAN] and [-HUMAN]. The presence of *kes* in XP1 poses several analytical questions. Should *kes* be analyzed as a complementizer (Kang 2006) or as a pure nominalizer (Kim & Sells 2007, 2013)? Furthermore, why are certain apparent specificational sentences ungrammatical, as in (2), despite satisfying the GIVEN–NEW requirement on information structure—an issue left unresolved by Kim & Sells (2007, 2013)?

(2) [철수가 이 책을 산 것]은 *[이 서점]이다/[이 서점에서]이다.

Building on insights from information-structure theory (Rooth 1992; Jacobs 1991; Krifka 2008), we argue that specificational *kes*-clefts instantiate a focus–background structure (FBS): XP1 supplies the background (presupposed) proposition, whereas XP2 functions as the focus, introducing a set of contextually relevant alternatives. We exemplify the specificational *kes*-cleft in (1b) as an FBS in (3) and formalize this FBS in (4), following Jacobs' (1991) representation.

(3) a. Background = Chelswu met x = **B** & Focus = this woman = **F**
b. Ordinary meaning: Chelswu met this woman = **B**(**F**)
= {MEET(THIS_WOMAN)(CHELSWU)}
c. Focus-induced alternatives: {MEET(x)(CHELSWU)|$x \in$ ENTITY}
= {MEET(THIS_WOMAN)(CHELSWU), MEET(MARY)(CHELSWU), ...}
d. Presupposition (existential): Chelswu met someone = $\exists x$**B**(x)
e. Felicity conditions: The sentence is uttered felicitously if its presupposition matches with the presupposition of the question.

(4) a. [$_{CP}$ [$_{CP}$ [철수가 만난] 것]은 [이 여자]$_{F}$ 이다].
b. ASSERT(#λX_{NP}[CHELSWU(λx[X(λy[MEET(y)(x)])])], THIS_WOMAN#)
c. ASSERT (#λX_{NP}[CHELSWU_MEET X], THIS_WOMAN#)

The XP1 phrase is best analyzed as a CP denoting a proposition rather than as a referential NP, whereas XP2 serves as the focused element.

Several pieces of evidence support this analysis. First, XP1 fails to trigger honorific agreement, which would be expected if it were a referential NP (e.g., [CP 선생님께서 만난 것]은 우리 어머님이시다/*우리 어머님이다). Second, focus-inducing particles such as *ppwun* 'only' occur exclusively in XP2 and are ungrammatical in XP1, as shown in (5). This distributional restriction follows naturally if XP2 is the designated focus position.

(5) a. [철수가 산 것]은 [그 책 뿐]$_F$ 이다.
b. *[그 책 뿐]$_F$ 은 [철수가 산 것]이다.

Third, certain expressions that independently require a clausal environment—such as temporal clauses marked with *-ci* or conditional constructions—occur exclusively in XP1, providing additional support for the CP analysis. Moreover, multiple-cleft and so-called amalgam cleft constructions, which allow multiple foci, are straightforwardly accounted for under the FBS approach, as illustrated in (6).

(6) a. [CP [CP [철수가 이 책을 산] 것]은 [작년]$_F$ [LA 에서]$_F$ 이다]
b. ASSERT(#λX_{AdvP}λY_{PP}[CHELSWU_BUY_THIS_BOOK X Y], LAST_YEAR, in_LA#)

Taken together, these observations indicate that Korean specificationals are not merely instances of GIVEN–NEW articulation but instantiate a distinct syntactic configuration that pairs a CP background with a focused constituent. The proposed analysis offers a unified account of simple specificationals, multiple clefts, and amalgam clefts, and further explains the ungrammaticality of otherwise possible combinations.

Tellingly, this approach reinforces the view that *kes* is not a nominalizer but a complementizer that selects a sentential complement. This move not only resolves longstanding debates over the categorial status of *kes* but also advances a unified account of Korean copular constructions. By modeling specificationals as FBSs, the analysis captures the syntax–semantics–pragmatics interface and provides a principled explanation for word-order alternations, the distribution of focus-sensitive elements, and the contrast between felicitous and infelicitous configurations.

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한국어 읽기 관련 LLM attention과 인간 시선추적 데이터 비교

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국내에는 다양한 형식의 언어 자원이 존재하지만, 영어나 일본어와 달리 안구 운동 및 뇌파 정보가 포함된 인지신경학적 코퍼스는 전무하다. 안구운동 추적 데이터는 인간의 언어 처리 과정에서 작동하는 인지적 요인을 규명할 수 있다는 점에서 큰 의의를 가진다. 남윤주(2023-2028)는 한국연구재단 보호연구지원사업의 지원으로 한국어 처리 관련 인지신경데이터베이스 구축(뇌파 및 시선추적 데이터베이스)을 진행 중이며, 본 연구에서는 이 중 일부 데이터를 활용하여 연구를 진행하였다.

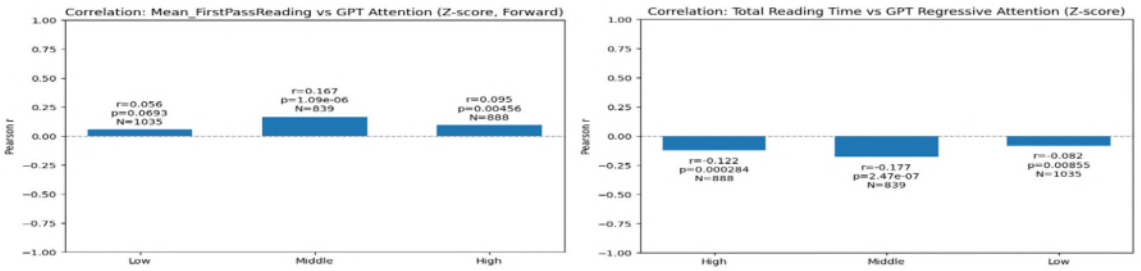
문장을 읽는 동안 어디에 주의를 할당할 것인가는 인간의 읽기뿐만 아니라 LLM의 언어 처리에 있어서도 매우 중요한 문제이다. 지금까지 진행된 알파벳 언어에 대한 연구들에 따르면 독자는 문장이나 절의 마지막 단어를 처리하는 데 더 많은 시간을 할애하는 경향이 있으며, 이를 흔히 '마무리 효과(wrap-up effect)'라고 한다(Rayner et al., 2000). 그러나 최근 중국어 안구운동추적연구에 의하면 자연스럽게 띄어쓰기가 없는 표의어인 중국어에서는 wrap-up effect가 보고되지 않았으며, 이는 문자 및 언어적 특성에 따라 초점이 맞춰지는 어휘 혹은 언어 성분이 달라질 수 있으며, 마지막 어휘에서 읽기 시간이 길어지는 wrap-up effect의 발생 여부 역시 달라질 수 있음을 의미한다. 그리고 만약 그렇다면, transformer model의 attention 역시 언어에 따라 달라져야만 효과적인 자연어 처리가 가능할 것이라고 유추할 수 있다.

이러한 문제의식을 바탕으로 본 연구에서는 한국어로 구성되고, 사전 난이도 검증을 걸친 텍스트를 처리하는 70명의 한국인 모국어 화자의 안구운동을 수집·분석하여 인간의 시선 처리 지표와 언어 모델의 Attention 값을 비교·분석함으로써, 1) 한국어에서의 wrap-up effect 발생 여부 및 2) 인간 및 LLM의 Attention 일치 여부를 검증하고자 하였다. 단방향 모델의 경우 회귀 과정이 없으므로 초기 읽기 시간과의 상관을 비교하였고, 회귀 유사 모델의 경우 회귀 과정이 있으므로 전체 읽기 시간과의 상관을 비교하였다.

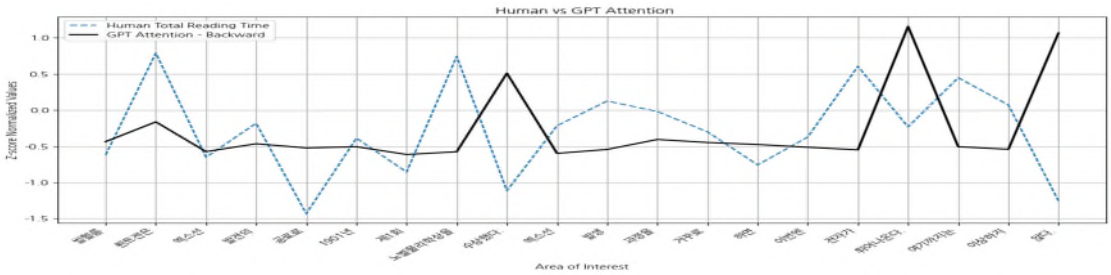
실험 결과, 단방향 방식의 “KoGPT2”는 인간의 읽기 관련 안구운동 중 초기 읽기 시간과 약한 양의 상관 관계를 보였으며((1a) 그림 1 참고), 회귀적 시선을 모사한 “KLUE-BERT(masking 기반 회귀 유사 처리로 일부 변형)”는 전체 읽기 시간과 약한 음의 상관 관계를 나타냈다((1b), 그림 2 참조). 세부 문장 단위 분석에서는, 인간의 시선은 “아인슈타인”, “노벨물리학상” 등 고유명사*전문 용어에서 읽기 시간(Fixation time)이 길게 나타나 낯선 단어 처리 과정에서 인지 부하가 발생하였음을 확인할 수 있다. 반면에 GPT attention은 해당 구간에서 뚜렷한 변화가 없고, 오히려 “튀어나온다/않다”와 같은 문장의 끝 부분에서 급격히 값이 증가하는 술어 중심 attention 혹인 wrap-up effect와 유사한 패턴을 보였다((2) 그림 3). 이는 곧 한국어 독자가 보여주는 읽기 중 주의 할당 혹은 처리의 중요성 부여와 GPT 모델에서의 attention이 상반되고 있음을 의미한다.

추가적으로, 회귀 지표를 활용하여 비교한 결과, 모델의 회귀 빈도와 인간의 시선 고정 횟수 간에는 중간 수준의 양의 상관 관계가 나타났으며, 모델의 회귀 강도와 인간의 총 읽기 시간 간에는 유의한 양의 상관 관계를 확인하였다. 이는 앞서 비교했던 attention 분석과는 달리 모델의 회귀 유사 행동은 인간의 회귀와 유사하게 작용을 하고 있음을 시사한다.

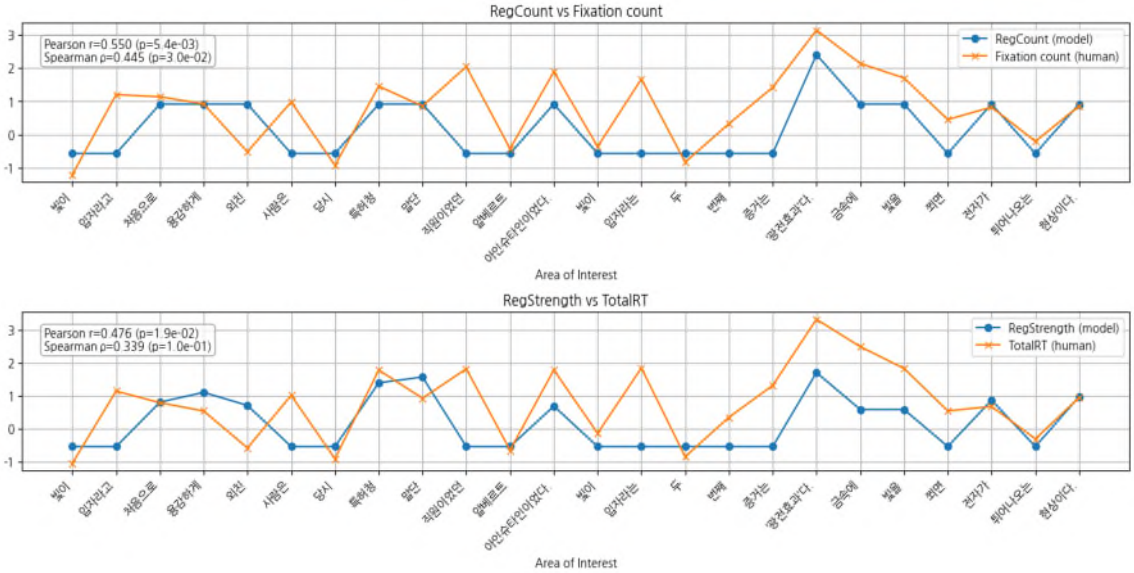
본 연구는 현재까지 텍스트 전체 단위의 상관 비교에 초점을 두었기에 향후 구문 정보나 의미적 빈도 등을 고려하여 더욱 세부적인 분석을 진행할 예정이다. 나아가 인간의 시선 처리와 GPT attention 간 차이를 규명함으로써, 한국어 기반 인지 특성을 반영한 새로운 언어모델을 개발하는데 있어 기반을 마련할 수 있을 것이다.



(1) a. 그림 1. KoGPT2 attention과 인간 초기 읽기 시간의 상관관계
b. 그림 2. KLUE-BERT attention과 인간 전체 읽기 시간의 상관관계



(2) 그림 3. 문장별 인간 시선과 GPT attention 패턴 비교



(3) 그림 4. 모델 회귀 지표와 인간 시선 지표의 상관관계

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A Comparative Study of Empathy Strategies in Spanish-Language Human-Chatbot Interactions: The Cases of GPT-5, GPT-4o, Gemini, PiAI, and LuzIA

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Empathy is the ability to recognize and respond to another person's feelings. It can be divided into cognitive empathy, which involves understanding another's perspective or mental state, and affective empathy, which entails sharing or resonating with another's emotional experience. In conversational contexts, empathy becomes observable through specific linguistic strategies.

This study adopts a framework of nine strategies, grouped into cognitive and affective domains. Cognitive strategies include: (1) Perspective-Taking (*"Entiendo que debe ser difícil para ti." / "I understand this must be difficult for you."*), (2) Shared Sense-Making (*"La pérdida de alguien es dura." / "Losing someone is hard."*), (3) Sharing Similar Experiences, (4) Help & Advice, and (5) Subjective Assessment. Affective strategies include: (6) Empathic Concern (*"Espero que te sientas mejor pronto." / "I hope you feel better soon."*), (7) Reporting Own Reaction, (8) Encouragement, and (9) Humor.

The analysis draws on a Spanish-language corpus of 50 scenarios (2,772 responses; 7,310 sentences), comparing human interactions with chatbots including GPT-5, GPT-4o, Gemini, PiAI, and LuzIA. Six native Spanish evaluators classified responses according to these strategies, with majority-vote ensuring inter-annotator reliability.

Results show that humans and chatbots share similar tendencies in the most frequently used strategies, but humans employ both cognitive and affective strategies in a more balanced and diverse way. By contrast, chatbots concentrate on a narrower set, mainly cognitive strategies such as help, advice, and subjective assessments, while affective strategies like empathic concern, encouragement, and humor remain less frequent. Among the systems analyzed, GPT-5 demonstrates partial improvements in variety and affective expression compared to previous models, yet a clear empathy gap with human performance persists. Results show that humans and chatbots share similar tendencies in the most frequently used strategies, but humans employ both cognitive and affective strategies in a more balanced and diverse way. By contrast, chatbots concentrate on a narrower set, mainly cognitive strategies such as help, advice, and subjective assessments, while affective strategies like empathic concern, encouragement, and humor remain less frequent. Among the systems analyzed, GPT-5 demonstrates partial improvements in variety and affective expression compared to previous models, yet a clear empathy gap with human performance persists.

The findings contribute to understanding empathy in human–AI interaction and provide resources for empathetic chatbot design, evaluation frameworks, and cross-linguistic discourse analysis.

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한국 인문사회과학 학술 글쓰기의 새로운 지형: KCI 초록 데이터 기반 언어적 분석(2004~2024)

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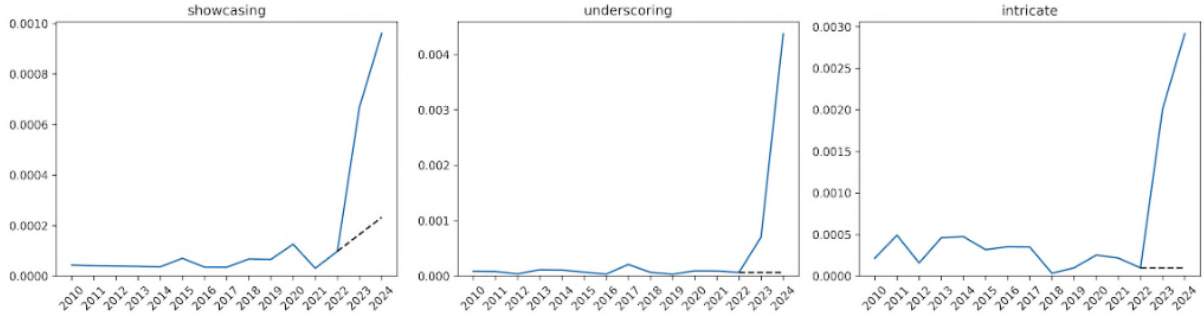
본 연구는 대형언어모델(LLM)의 상용화가 한국 인문·사회과학 학술 글쓰기에 미친 영향을 추정하는 것을 목표로 한다. 이미 해외에서는 PubMed 등 대규모 말뭉치를 대상으로 특정 단어가 예상치보다 얼마나 자주 쓰였는지를 계산하여 LLM 사용 정도를 추정한 연구(Kobak et al., 2025)등이 활발하게 보고되고 있다. 그러나 아직 한국의 경우 LLM 상용화 이후 연구자들의 학술 글쓰기에 나타난 변화를 정량적으로 분석한 사례는 드물다. 이에 본 연구는 한국학술지인용색인(이하 KCI 라 한다.) 인문·사회과학 초록을 대상으로 단어 빈도를 벡터화하고 2021 년 및 2022 년 추세에 기반한 예측치와 2024 년 실제 빈도를 비교하는 통계적 방법을 적용하여 한국적 맥락에서의 LLM 사용 흔적을 살피고자 한다.

연구는 크게 세 단계로 나눌 수 있다. 1) 2004 년부터 2024 년까지 KCI 인문학 34 만 건, 사회과학 53 만 건, 총 88 만 건의 논문 서지 데이터를 수집하여, 영문 및 국문 초록을 각각 추출하였다. 이후 영문 초록은 단어–문서 이진 행렬을 구축하였고, 국문 초록은 교착어인 한국어의 특성상 추가 형태소 분석 및 복합명사·수사적 표현 복원 과정을 거쳐 동일한 행렬을 생성하였다. 2) 초록에서 2021 년 및 2022 년에 사용된 단어 빈도의 선형 추세를 토대로 2024 년 예측치를 산출하고 이를 2024 년도 실제 빈도와 비교하여 영문 및 국문 초록 각각에서 과잉 어휘를 추출하였다. 이 과정에서 단어를 내용(content) 단어와 문체(style) 단어로 구분하여 비교함으로써 LLM 이 주로 문체적 측면에서 영향을 미쳤음을 확인하였다. 3) 마지막으로 2024 년 과잉 사용된 단어의 등장 빈도를 통해 LLM 활용률의 하한선을 추정하였다.

분석 결과, 영문 초록에서는 사회과학 및 인문학 분야 모두에서 해외 선행연구와 마찬가지로 LLM 활용이 두드러지게 나타나 한국 연구자들이 영문 초록 작성 과정에서 LLM 을 적극적으로 사용하고 있음을 확인하였다. 예컨대 아래와 같이 사회과학 분야 영문 초록에서 showcasing, underscoring, intricate 와 같은 문체 단어는 2010 년부터 2022 년까지 빈도가 일정하게 유지되다가 2023 년 이후 급격히 사용 빈도가 증가함을 확인하였다.

Figure 1: Word frequency over time with 2024 projection



또한 국문 초록에서도 '주목한다', '제시한다', '모색한다'와 같이 LLM 사용을 시사하는 단어들이 눈에 띄게 증가하였는데 이는 한국어 학술 글쓰기 또한 LLM 이 활용되고 있음을 보여주는 증거이다.

본 연구는 영문과 국문 초록 모두에서 LLM 이 남긴 언어적 흔적을 실증적으로 보여줌으로써 한국 학술 글쓰기가 LLM 의 영향권 속에서 재편되고 있음을 드러낸다. 이러한 변화는 단순한 어휘적 현상을 넘어 LLM 이 학술 글쓰기의 언어적 관행을 변화시키며 새로운 지형을 형성하고 있음을 시사한다. 향후에는 학문 분야별 차이를 정밀하게 탐색하여 분야별로 나타나는 LLM 의 활용과 그 함의를 살펴보고자 한다.

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Telicity in L2 Acquisition of Spanish Double Object Constructions with Optional *se*

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Spanish *se* serves a variety of functions (Fábregas, 2021; Mendikoetxea, 2012), which presents challenges for L2 learners. Much of the literature on the acquisition of clitic *se* has mainly focused on either the acquisition of *se* as a detransitivizer or on the acquisition of obligatory *se* via aspectual feature checking. However, few studies have explored the acquisition of optional *se* constructions that denote telicity (García-Tejada et al., 2023) and even fewer studies have examined the acquisition of optional *se* by L2 learners from typologically unrelated language backgrounds, such as Korean and Spanish (cf. Lee, 2020).

Empirical evidence from corpus analysis, Google search patterns, and experimental tasks reveals that, despite surface similarities, the Korean auxiliary *a/e pelita* diverges considerably from Spanish optional *se* in both syntactic and semantic constraints. These divergences involve semantic restrictions on eventualities (eventive vs stative), the requirement for incremental themes, and compatibility with *for*-phrases. Specifically, *a/e pelita* does not require the scalar constraints or stative predicate restrictions typically observed with Spanish optional *se*. For example, stative predicates are acceptable in Korean, even without scalar entailments, whereas such usage is generally disallowed in Spanish. Furthermore, *for X time* diagnostics−commonly used to probe telicity−highlight further contrasts: Korean auxiliary verb constructions (AVCs) accommodate such diagnostics, while Spanish optional *se* constructions tend to resist them, especially in contexts requiring scalar entailment (Martin & Arunachalam, 2022:14-15). Building on Sohn (1973, 2001) and experimental data, this study assumes that *a/e pelita* functions as an aspectual marker, structurally adjoined above *v*P and that the syntactic and semantic properties of learners' L1 significantly influence their acquisition of Spanish optional *se*. In contrast, Spanish *se*, as a non-core argument, is analyzed as contributing to aspectual interpretations via a low applicative head in the syntax, yielding a resultative semantics.

Drawing on Montrul & Slabakova (2008), this study employed a comprehension task−comprised of an Acceptability Judgment Task (AJT) and an Elicited Choice Task (ECT)−to investigate a) whether and to what extent L1-Korean L2-Spanish learners are sensitive to Spanish optional *se* constructions, particularly in Spanish double object constructions (DOCs) with optional *se* and the resulting aspectual shifts.[1] Additionally, the study explores whether the distinct syntactic and semantic properties of L1-Korean affect the acquisition of optional *se* constructions crosslinguistically. We predicted that L2-Spanish learners would struggle to acquire Spanish DOCs with optional *se* and the resulting aspectual shifts, and that learners would be influenced by the distinct syntactic and semantic properties of their L1-Korean in the acquisition of Spanish optional *se* constructions.

Fifty Korean-speaking L2 learners of Spanish and 50 Spanish monolingual speakers participated in the study. The AJT tested sensitivity to aspectual mismaches in Spanish DOCs with and without optional *se*. The ECT assessed L1-Korean learners' proferences among competing constructions, and compared their choices with those of native speakers, focusing on DOCs with optional *se* and other optional *se* constructions with intransitive predicates. In the AJT, L1-Korean learners exhibited significantly different acceptance patterns compared to native Spanish speakers. Native speakers assigned significantly lower ratings than both intermediate and advanced learners ($p<.01$), particularly in the ([+se, -mod]) condition

[1] For clarity, we refer to examples (2a)-(2c) as examples of *Spanish optional se constructions*: (2a) Julio se comió una manzana. 'Julio ate an apple.' (2b) Julio se supo la lección. 'Julio came to know the lesson.' (2c) Julio se vino de Alemania para siempre. 'Julio came back from Germany forever.' Constructions such as (2a) and (3) typically involve eventive predicates, including consumption verbs (e.g., *comer* 'eat,' *beber* 'drink'), psychological consumption verbs (e.g., *leer* 'read,' *mirar* 'watch), and creation or change of state verbs (e.g., *pintar* 'paint,' *abrir* 'open'). Certain stative predicates (e.g., creer 'believe,' saber 'know,' conocer 'know') can also occur with optional *se*, as in (2b), though in more constrained contexts. We specifically refer to constructions like (2a) and (2b) as Spanish *DOCs with optional se*.

(DOCs with optional *se*), where they showed a distinct evaluative pattern. In contrast, both intermediate and advanced L1-Korean learners accepted both infelicitous sentences in the ([+se, -mod]) condition and felicitous sentences in the ([-se, +mod]) condition, as shown in Figure 1. A linear mixed-effects model (fitted effects: condition, group, and interaction; random intercepts: participant) revealed a significant main effect of condition. The [-se, +mod] condition received higher raitings than the reference ([-se, -mod]) condition. The [+se, -mod] condition was rated significantly lower ($\beta = -0.49$, SE = 0.18, $p = .0075$, 95% CI [–0.85, –0.13]). No proficiency effect was observed: both intermediate and advanced groups struggled to detect aspectual shifts in Spanish DOCs with optional *se.* These AJT results confirm learners' difficulty with Spanish DOCs with optional *se* and support the predicted influence of L1 structure.

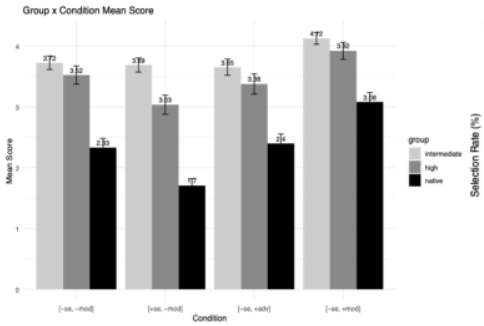

Figure 1. Mean acceptance of scores per Condition

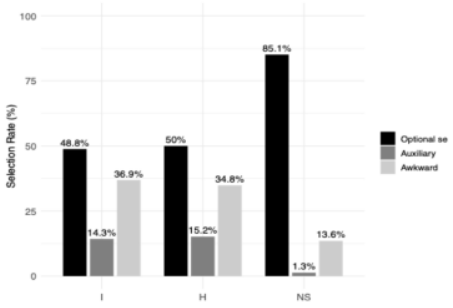

Figure 2. Acceptance rates by groups in ECT

In the ECT, learners frequently selected auxiliary constructions over Spanish optional *se* constructions at rates of 14.3% for the intermediate group and 15.2% for the advanced group. Additionally, both groups frequently chose semantically awkward Spanish expressions that had acceptable Koren equivalents (36.9% and 34.8%, respectively). Learners over-accepted sentences whose Korean equivalents were accepted by native Korean speakers, even when these Spanish structures were judged unacceptable by native Spanish speakers. This pattern provides strong evidence for L1 influence in L2 acquisition.

Overall, results from both tasks revealed Korean learners face persistent difficulty identifying aspectual shifts in Spanish DOCs with optional *se*, a challenge likely rooted in the syntactic and semantic differences between their L1 and L2. These findings indicate that acquiring aspect in a typologically distinct L2 inolves not only feature reassembly difficulties but also strong crosslinguistic influence. These conclusions contrast with previous studies, which have argued that L1 influence in the L2 acquisition of Spanish DOCs is either absent or limited to the early stages of acquisition (Escobar and Teomiro, 2016; Slabakova and Montrul, 2002, 2008).

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Persuasive Americans vs. brutal Brits? A collostructional approach to the transitive out of *-ing* construction

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The transitive *into -ing* construction in English has been widely examined in the literature, as illustrated in (1) (Rudanko 1991, 2006; Gries and Stefanowitsch 2003; Wulff et al. 2007; Kim and Davies 2016):

(1) a. Rebekah talks him into inventing a fake online profile, … (GloWbE US General)
b. Sadly, our track record clearly shows that we regularly try to pressurize people into confronting to our expectations. (NOW 17-02-05 GB)

This construction encodes causation by inducing someone to begin an action, where the subject causes the object to do something they were not already doing. Wulff et al. (2007) argue that the construction exhibits a dialectal divide: American English tends to favor communication and persuasion verbs (e.g., *talk*), while British English favors forceful or negative emotion verbs (e.g., *pressurize*), leading to the generalization that Americans are "persuasive" whereas Brits are "brutal."

By contrast, the transitive *out of -ing* construction has received far less attention (Gawlik 2013; Sim and Kim 2015; Kim and Sim 2024). Like its *into -ing* counterpart, it encodes causation, but expresses prevention or extraction, where the subject causes the object not to do something, or to stop doing it, as in (2).

(2) a. But I do want to talk you out of believing that you have to choose a private school, if you want the best for your children's education. (NOW 11-10-09 US)
b. Football fans of my age will never forget the time in 1986 when Diego Maradona cheated England out of winning the world cup by punching the ball in the net past Goal Keeper Peter Shilton and knocking England out. (GloWbE GB General)

Previous work (e.g. Kim and Sim 2024) shows that in American English, the transitive *out of -ing* construction is statistically strongly associated with force/negative emotion verbs, complicating the stereotype of "persuasive Americans" However, the British English side of the construction has remained largely unexplored. This study therefore asks: does the "persuasive Americans vs. brutal Brits" generalization extend to the transitive *out of -ing* construction, or do the two constructions reveal different cross-variety tendencies?

To address this question, we analyzed 2,436 American English and 1,385 British English examples of the transitive *out of -ing* construction drawn from GloWbE (Davies 2013) and NOW (Davies 2016-). Using collostructional methods—collexeme, distinctive collexeme, and covarying collexeme analyses—we examined verbs and semantic verb classes occurring in the V1 slot.

Our collexeme analyses show that while both varieties share most of the strongest collexemes, British English shows a stronger preference for force verbs (e.g., *take*, *freeze*, and *lift*), whereas American English displays a more diverse range of semantic classes (e.g., *opt*, *weasel*, and *trick*). Distinctive collexeme analysis reinforces this: six of the seven distinctive British English verbs are force-related (e.g., *rule*, *price*, *take*, *throw*, *lift*, and *force*), while American English displays greater diversity, with *talk* emerging as the most distinctive. Covarying collexeme analyses confirm this contrast: British English strongly favors force-based V1-VP2[-*ing*] pairs, while American English emphasizes a wider range, including communication (*talk*), trickery (*cheat*), and negative emotion verbs (*scare* and *intimidate*).

Taken together, our findings suggest that while the "persuasive Americans vs. brutal Brits" generalization broadly extends from the transitive *into -ing* construction to its *out of -ing* construction counterpart, the

details diverge. Strikingly, non-force verbs such as negative emotion and trickery verbs, which were more salient in British English in the transitive *into -ing* construction, appear as distinctive in American English in the transitive *out of -ing* construction. These results refine our understanding of how American and British English conceptualize causation, revealing both parallel tendencies and subtle divergences across related constructions.

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본 학술대회는 대한민국 교육부와 한국연구재단이 지원하는
대학혁신지원사업 서울대학교 인문학 역량강화 프로그램의 일환으로 개최합니다.

This Conference is held as part of the Initiative for Seoul National University College of Humanities' Research and Education, supported by the Ministry of Education of the Republic of Korea and the National Research Foundation of Korea.