# 한국영어학회
## 2018년도 추계 학술대회

## 영어학 : 전통과 미래가 만나다

# 발표논문초록집

일시 및 장소: 2018년 10월27일 오전 9시 ~ 오후 5시 30분
장소: 동국대학교 만해관/법학관 세미나실

주최기관: 한국영어학회
후원: 동국대학교 영어.통번역학과/
(재)대산장학문화재단

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# 2018년도 추계 학술대회

대회장 : 김선웅 (광운대학교)

조직위원회
  위원장: 박명관 (동국대학교)

  위원: 김용범 (광운대학교)    문귀선 (한성대학교)
     김종복 (경희대학교)    김효영 (국민대학교)
     백경숙 (한양여자대학교)  심창용 (경인교육대학교)
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     지인영 (한국체육대학교)
     한은주 (서울여자대학교)

프로그램위원회
  위원장: 정채관 (KICE)

  위원: 강은경 (상명대학교)    윤영도 (동국대학교)
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     문안나 (인하대학교)    채서영 (서강대학교)
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     김인영 (한양여자대학교)

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# 한국영어학회 2018 가을 학술대회

## 주제: 영어학, 전통과 미래가 만나다

일시: 2018년 10월 27일(토) 오전 09:00 ~ 오후 5:30/ 장소: 동국대학교 법학관 1층 B162(모의법정)

주최: 한국영어학회 / 후원: 동국대학교 영어·통번역학과/ (재)대산장학문화재단

| 시간 | 순 서 | | | |
|---|---|---|---|---|
| 08:30~09:20 | 등 록 | | | |
| 09:20~09:30 | 개회식<br>개회사: 김선웅(한국영어학회 회장) / 환영사: 박명관(학술대회 조직위원장) | | | |
| | 음성학·음운론<br>좌장: 윤영도(동국대)<br>B260호 | 통사론·형태론<br>좌장: 황주현(한양대)<br>B259호 | 의미론·화용론<br>좌장: 지인영(한국체대)<br>B257(PBL)호 | 응용언어·영어교육<br>좌장: 황종배(건국대)<br>B162(모의법정)호 |
| 09:30~09:55 | Vowel changes across Noam Chomsky's lifespan<br>권수현(서울대) | On labeling of movable adjuncts<br>유용석<br>(해군사관학교) | Korean English Learners' Comprehension of the Semantics of Disjunction<br>김재준, 정필립(동국대) | 4차 산업혁명과 영어교육<br>안성호(한양대) |
| 09:55~10:20 | Prosodic Marking of Second Occurrence Focus in Korean<br>박성은(이화여대) | The (un)availability of English plural allomorphy<br>이수환<br>(서강대) | The Complementarity of Intentionality and Affectedness: Evidence from English Verbs of Killing<br>이주원(경희대) | 4차 산업혁명과 초등 영어과 교육과정<br>홍선호(서울교대) |
| 10:20~10:45 | Infant-directed speech might be most beneficial at the onset of speech production: Evidence from Korean infants<br>고언숙(조선대) | Probing L2 learners' syntactic knowledge by prosodic sensitivity<br>강초롱, 송상헌, 오은정<br>(서울대, 인천대, 상명대) | On the role of emphatic/attenuating NPI *kulehkey* in Korean<br>강아름, 김소희 (고려대) | 4차 산업혁명 시대 중등 영어과 교육과정 개발 방향<br>정채관(KICE) |
| 10:45~11:10 | Prosodic focus for Korean learners of English<br>유군, 이용철(청주대) | Adjunct Ellipsis in English<br>이우승 (건국대) | Stance expressions in Korean college students' English writing<br>이혜경(아주대) | 4차 산업혁명과 초등영어교과서<br>심창용, 이재희<br>(경인교대) |
| 11:10~11:20 | 휴 식 | | | |
| 11:20~12:00 | 초청 특강(1), B162호: 좌장 정채관(KICE)<br>2015 영어과 개정교육과정 검토 및 미래 교육과정 모색<br>이완기(서울교대) | | | |
| 12:00~13:00 | 점심 | | | |
| | 음성학·음운론<br>좌장: 손가연(광운대)<br>B260호 | 통사론·형태론<br>좌장: 윤정희(경상대)<br>B259호 | 의미론·화용론<br>좌장: 김용범(광운대)<br>B257(PBL)호 | 응용언어·영어교육<br>좌장: 심창용(경인교대)<br>B162(모의법정)호 |
| 13:00~13:250 | Patterns of Text-setting in Korean and English<br>손가연(광운대) | Island-escaping Effects and Choice Functions in (Non)contrastive Fragments<br>문귀선(한성대) | The Syntax-Semantics Interface of English Gapping<br>박상희<br>(SUNY at Baffalo) | 4차 산업혁명과 영어 전공자의 미래<br>김선웅(광운대) |
| 13:25~13:50 | Phonological CorpusTools를 이용한 코퍼스 기반 음운 현상 연구<br>윤태진(성신여대) | Negative stripping in English and Korean: a contrastive analysis<br>김정수(경희대) | Multimodality as viewpoint phenomenon: Introduction and case studies<br>권익수(한국외대) | L2 Acceptability Judgments on *Wh*-Island Sentences and Processing Difficulty<br>한혜령(서원대) |
| 13:50~14:15 | A comparative study on | Resolving the | Conjunctive '-(i)na' and | 챗봇을 활용한 딥러닝 기술 |

| | prosodic focus in English and Korean 오정, 이용철(청주대) | Ambiguities of Negative Stripping Construction in English: A Direct Interpretation Approach 김소지, 조세연 (강원대) | a missing scalar alternative 김지은(울산대) | 기반 영어 말하기 도구 설계: 구문문법을 중심으로 김낙훈(서울대) |
|---|---|---|---|---|
| 14:15~14:40 | Phonetic Properties of /l/-darkening: Effects of lexicality, gender and phonological contexts 안미연(한경대) | Rerooting the Clause Michael Barrie, Sihun Jung(서강대) | Do so and do it anaphora revisited 위혜경(단국대) | Corpus Analysis of Verbs in English Drama 유성현, 최만규, 민주영 (광운대) |
| 14:40~14:50 | 휴 식 | | | |
| 14:50~15:00 | 우순논문상 시상, B162호 사회: 황종배(한국영어학회 편집위원장) | | | |
| 15:00~15:40 | 초청 특강(2), B162호: 좌장 김선웅(광운대) 딥러닝 방식의 워드벡터를 활용한 어휘 의미 표상 최재웅(고려대) | | | |
| 15:40~16:20 | 초청 특강(3), B162호: 좌장 이용철(청주대) Neurophonology: Now and Future 박해일(경희대) | | | |
| 16:20~16:30 | 휴식 | | | |
| 16:30~17:10 | 초청특강(4), B162호: 좌장 박명관(동국대) 전산언어학과 영어통사론의 접점 송상헌(인천대) | | | |
| 17:10~17:20 | 연구윤리: 부실 유사 학회 문제를 중심으로, B162호 정채관(KICE) | | | |
| 17:20~17:30 | 총회 및 폐회식, B162호 폐회사: 박명관(학술대회 조직위원장) | | | |

Alternates: [1] Processing Information Structure by Korean English L2ers: An ERP Study
정원일(동국대), 박명관(동국대)


**학술대회장소: 동국대학교 법학관 1층 찾아오시는 길 (아래 웹사이트 및 하단 지도 참고하십시오)**
https://www.dongguk.edu/mbs/kr/subview.jsp?id=kr_010701000000

(동국대학교 캠퍼스 맵 우상단 3호선 동국입구역 출구 6번에서 진입하시면 좋습니다.)

# 2015개정 영어과 교육과정: 미래 사회에 대비할 수 있는가?

이완기

(서울교대 명예교수)

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지금 우리는 '4차 산업혁명 시대'란 말에 익숙해져 가고 있다. 과연 어떤 시대일지 정확하게 예측하기는 어렵지만 현재의 지식정보화 사회보다는 더 나아간 사회일 것이다. 특히 인공지능(artificial intelligence)이라는 기술이 인간 생활의 거의 모든 부문에서 적극적인 역할을 할 것이라는 예측을 틀렸다고 하기는 어려울 것으로 보인다. 이러한 시대를 목전에 두고 '고비용저효율'의 대표 격인 영어교육 분야에서는 과연 대응 준비가 제대로 되어가고 있는가에 대해 관심을 갖지 않을 수가 없다. 구글 통/번역기나 파파고 등 아직 고도화 되지 못한 통/번역 기기를 사용해 보면서 드는 생각은, 이것들이 기술의 발전으로 고도화, 정교화, 정밀화 되어 간다면, 사람들이 학교나 학원 등에서 영어를 배우려고 할 것인가, 영어를 배울 필요가 있을 것인가 하는 것이다. 사실 실시간 통/번역이 가능한 인공지능 기반 고성능 통/번역 기기가 일상화 되면, 현재와 같은 학교 영어교육의 방식이나 체제는 그 효능을 잃게 되고, 그에 따라서 영어교육의 시장(?) 대부분을 포기할 수밖에 없을 것이다. 영어교육의 미래가 크게 우려되지 않을 수 없다.

본 발표는 우리 영어교육이 곧 맞이하게 될 4차 산업혁명 시대에 효과적으로 대응하기 위해서는 주도적인 혁신이 필요하다는 점을 주장한다. 특히, 현재의 영어 의사소통능력 신장 중심의 학교 영어교육의 목표가 과연 우리 현실에, 또 미래 사회에 맞는지에 대해 심각한 의문을 제기하고, 영어교육 관련자들이 같이 한번 생각해 볼 기회를 갖기를 희망한다. 4차 산업혁명 시대는 필연적으로 온다 해도 하루 밤새에 전격적으로 오는 것이 아니라, 알지도 느끼지도 못하는 사이에 어느 덧 와 있을 것이다. 흔히 보이던 공중전화나 우체통이 거의 사라진 것을 거의 의식하지 못하면서 이 시대를 살아가는 것처럼... 영어교육도 패러다임 자체가 바뀌는 큰 변혁을 마땅히 겪어야 할 것이다. 4차 산업혁명 시대의 특성을 영어교육 분야도 온전히 받아들일 수밖에 없을 것이기 때문이다. 발표자는 이런 맥락에서 4차 산업혁명 시대의 특성이 이 사회를 완전히 지배하기 전까지의 기간, 즉 과도기 동안에 현재의 영어교육 내용과 방식, 교육과정 등을 근본적으로 재구성해야 함을 역설하고, 그 방향을 제안하는 하고자 한다.

# 딥러닝 방식의 워드벡터를 활용한 어휘 의미 표상

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알파고로 상징되는 인공지능의 괄목할 만한 발전으로 산업계나 학계를 가리지 않고 수많은 분야가 직간접의 영향을 받고 있다. 자연언어처리 분야도 예외는 아니다. 워드임베딩(Word Embedding)에 기반한 벡터공간모형의 도입과 그러한 방식을 효율적으로 구현시켜 줄 수 있는 Word2vec(Mikolov et al. 2013) 같은 새로운 기계학습 도구의 개발과 공개로 고품질의 워드벡터(Word Vector) 도출이 가능해지면서 자연언어처리 분야가 한 단계 더 도약하였고, 이는 또 최근 유행하는 딥러닝(Deep Learning) 분야의 초석이 되고 있다.

본 발표에서는 언어학적 관점에서 이와 같은 최근의 발전을 몇 가지 구체적인 예를 통해 살펴본다. 우선 기존의 언어학적 어휘 의미론과 비교해서 워드벡터 방식의 의미처리 방식이 어떤 특징이 있는지를 검토해 본다. 또한 도출한 워드벡터를 R과 같은 통계패키지를 활용해 조작하는 법에 대해 간략히 살펴보면서 워드벡터 간의 공간적 거리를 측정하는 법에 대한 좀 더 깊이 있는 이해를 도모한다. 이어서 대표적인 영어 코퍼스인 BNC(British National Corpus)를 Word2vec의 입력자료로 사용하여 도출한 결과물을 일부 선별하여 논의의 대상으로 삼는다. 세부 논의 항목으로는 Word2vec 도출자료에서 이미 밝혀진 유사도, 클래스, 유추관계 등이 포함된다. 이러한 논의를 통해 워드벡터 방식의 의미처리가 언어학적으로 어떤 활용 가능성이 있고 어떤 의의를 띨 수 있는지 등을 살펴본다.

Mikolov, T., Chen, K., Corrado, G., and Dean, J.(2013), "Efficient estimation of word representations in vector space," *Proceedings of Workshop at ICLR* (https://arxiv.org/pdf/1301.3781.pdf).

# Neurophonology: Now and Future

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Recent advances in brain imaging techniques and neuroscience have given rise to neurophonology, an interdisciplinary subfield of neurolinguistics that attempts to test phonological hypotheses by exploring the brain. I aim to introduce experimental results related to neurophonology based on functional Magnetic Resonance Imaging (fMRI) and discuss the recent development and future direction of this field. fMRI is a technique that has been used most recently in neurological and cognitive science research in that it can enable us to localize brain areas that are performing information processing more accurately than other neuro-imaging techniques. I aim to account for recent neurophonological findings of fMRI studies that identify the neural correlates of phonological processing, using the well-touted predictive coding theory.

Predictive coding refers to the tendency of the brain to generate predictions about the future incoming stimuli, reflecting th brain's function in the auditory, visual and sensori-motor processing. The predictive coding theory (PCT) posits that sensory inputs are matched with top-down expectations or predictions generated by the hierarchically organized generative predictive models to minimize surprise or prediction error (Clark 2013; Friston 2005). In the hierarchical neural network, the predictive models are located higher in the hierarchy, sending predictions to lower processing levels. Inputs matching predictions will require less processing than mismatching inputs that generate a prediction error. The prediction errors are projected to higher levels of the neural network for updating the predictive models. The benefits of prediction are two-fold: First, it is not necessary to use full resources of our brain capacity to process predicted input; only unpredicted input are further processed in the higher levels. Second, these expectations enable us to have the mental speed that is needed for smooth cognitive functioning.

The predictions of the PCT with respect to phonological language processing are: First, frontal motor areas (higher in the neural network) will be active during phoneme perceptions in adverse or challenging conditions such as noise and variability in the input. Second, frontal sensori-motor areas including Broca's area and premotor cortex will be engaged to a greater degree for the seniors during the same perception task to minimize prediction error. Third, greater engagement of frontal speech motor ares will be observed during the perception of nonnative or phonologically more complex phonemes. These predictions will be argued to have been supported by recent fMRI studies (e.g., Du et al. 2016; Park et al. 2010; Park & Iverson 2008; Park et al. 2011), which provides strong evidence for the PCT.

# 전산언어학과 영어통사론의 접점

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　발표자는 향후 융합연구의 시대가 본격화되면 인문학의 여러 영역 가운데 가장 바탕이 되는 역할을 담당할 학문은 아마도 언어학이 될 것이라고 본다. 그리고 나아가 언어학이 융합연구 분야에서 성장해 가는데 중심축의 역할을 수행하는 것은 통사론이라고 확신하는 바이다. 이러한 생각은 단순한 당위가 아니라 최근의 전산언어학 그리고 기술의 발전 방향을 종합하여 얻게 된 소결이다. 인간언어에 대한 구조적 이해와 전산적 구현 능력은 미래 시장을 선점하고 기술적 동향을 선도하기 위한 필수적 요건이기 때문이다.

　현재 우리 사회에서 가장 주목을 받는 화두가 있다면 단연 '4차 산업혁명'일 것이다. 4차 산업혁명의 정의가 무엇인지 또는 그 실체가 무엇인지에 대해서 학자마다 견해가 다를 수 있을 것이나, 현재가 산업계는 물론 학계에 있어서도 거대한 변화의 시기라는 인식은 모두가 공유하고 있을 것이다. 그렇다면 4차 산업혁명의 핵심은 무엇인가? 관련 분야의 권위자로 손꼽히는 서울대학교 장병탁 교수는 '인공지능'을 4차 산업혁명을 이끌어낼 핵심 기술로 제시한다. 이러한 전문가의 식견이 아니라도 '알파고-이세돌의 대결'을 목도한 사람이라면 인공지능이 향후 변화될 세계에서 중차대한 역할을 수행할 것이라는 것을 예견할 수 있을 것이다. 그렇다면 다시 질문을 던져, 인공지능 기술에서도 가장 핵심이 되는 영역은 무엇인가? 현 세대 인공지능은 '영상처리'에 치우쳐있는 상황인데, 이러한 경향은 이미지가 비정형 데이터 가운데 상대적으로 학습 및 처리가 용이하고 당장의 가시적인 애플리케이션을 개발하기가 수월하기 때문이다. 그러나 인공지능 분야의 첨단을 걷고 있는 전문가들은 거의 공통적으로 '자연언어처리'를 인공지능 분야의 코어기술로 판단하고 있다. 구글 디렉터로 인공지능 기술개발을 총괄하고 있는 레이 커즈와일은 "자연어이해야말로 인공지능 기술의 핵심"이라고 방점을 찍었으며, 앤드류 응, 제프리 힌튼과 함께 딥러닝 연구 분야의 세계적 권위자로 손꼽히는 얀 르쿤(Facebook, NYU)은 "딥러닝의 다음 번 큰 도약은 자연어이해가 될 것이라"고 내다보았다. 이러한 관점은 인공지능이라는 기술의 목적을 고려하면 어쩌면 당연한 것이다. 인공지능이 존재하는 근본 이유는 '커뮤니케이션'에 있다. 다시 말해 인간과 인간 사이(Human-to-Human)의 커뮤니케이션의 장벽을 없애고, 나아가 인간과 기계(Human-to-Computer)의 커뮤니케이션까지 가능하도록 하는 장치가 인공지능이다. 따라서 인간의 자연언어를 다루지 않는 인공지능 연구는 반쪽짜리일 수밖에 없을 것이다. 예컨대, 로봇청소기에도 인공지능의 여러 기반 기술이 삽입되어 있으나, 인공지능이라 할 때 로봇청소기부터 떠올릴 사람은 없을 것이다. 무엇보다 언어적 인터페이스가 사용되고 있지 않기 때문이다. 요컨대, 커뮤니케이션의 매개체는 결국 언어로 수렴되고 특히 언어 구조에 대한 이해가 핵심적이기 때문에 언어 연구자가 지난 수십 년간 축적해 온 통사론 지식은 앞으로 전개될 시대에 더욱 절실히 요구될 것이다.

　이러한 맥락에서 우리의 실정은 어떠한지 살펴보도록 하자. 현 단계의 기계학습 차원의 자연어 처리 관련 연구 및 개발 동향은 공학계열에만 집중되어 있는 형편이다. 최근의 기

계학습의 흐름이 전문 지식을 크게 강조하지 않는 알고리즘에 기반하고 있다는 점을 고려하면 납득이 가는 현상일지 모르나, 인간언어에 대해서 오랜 기간 연구를 거듭해온 언어연구자 특히 통사연구자의 역할이 없다는 것은 자못 부자연스러운 일이다. 비유를 하자면 사람들의 병리자료를 바탕으로 환자의 건강상태를 진단하는 인공지능 환경에서 의사들이 아무런 기여를 하지 않는 것과 같다. 그 이유는 무엇일까? 이유가 진단된다면 대안을 모색할 수 있을 것이다. 문제 해결에 주안점을 두어 논의하자면, 내적인 이유와 외적인 이유 두 가지를 거론할 수 있다.

내적 요인으로는 무엇보다 전문가의 부족을 들 수 있다. 그렇다면 어떠한 전문가가 요구되는가? 자연어처리에서 언어지식을 활용한다는 것은 전형적인 융합학문의 성격을 지닌다는 점을 상기할 필요가 있다. 융합연구라 하였을 때 전통적인 시각은 서로 이종의 학문을 전공한 사람들이 한 테이블에 모여 하나의 주제를 놓고 의견을 나누는 형태를 떠올렸다. 이것 자체가 불필요한 일은 물론 아닐 것이나, 이러한 접근은 학문 영역간의 '물리적 결합'에 그치게 마련이다. 보다 진취적인 방법은 '화학적 결합'으로, 이는 이전까지 다른 분야로 여겨지던 복수의 학문을 개별 연구자 개개인이 함께 이해하고 접근할 수 있도록 하자는 것이다. 물리적으로 결합된 요소보다 화학적으로 결합된 요소가 응집력이 더 클 뿐만 아니라 응용가능성도 더 크다는 점을 떠올려보자. 즉, 통사론과 같은 지식 기반 환경과 딥러닝과 같은 지식 자유 체계를 넘나들 수 있는 발전된 융합형 연구자를 양성하는 것이다.

외적 요인으로는 언어적 지식이 현재 자연어처리의 발전에 실질적으로 도움이 되는가에 대한 검증이 채 이루어지지 않았다는 점을 들 수 있다. 2000년대 들어 기계학습이 핵심적인 자연어처리 방법론으로 부상한 이래, 언어학적 지식의 필요성은 점차 시장에서 외면을 받아왔다. 그 결과 최근에는 굴지의 자연어처리 개발팀에 언어학적 배경을 가진 인원이 단 한명도 존재하지 않는 현상이 발생하고 있다. 무엇보다 자신들이 오랜 기간 동안 구성해온 지식 체계가 현실세계의 문제를 해결하는 데 어떠한 기여를 할 수 있는가를 스스로 입증하고자 하지 않았기 때문이다. 다시 말해 자연언어에 대한 통사적 지식이 인공지능 시대에서 오히려 더 중요한 가치를 지니고 지속적으로 발전이 모색되어야 할 대상임을 연구자 스스로가 증명하여야 할 때이다.

# Vowel changes across Noam Chomsky's lifespan

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This study presents acoustic evidence of how an individual speaker's vowels change across their lifespan. Noam Chomsky was chosen as a speaker because he presents an excellent opportunity to study the effect of relocation to a different dialect area on adult phonology as he was born and raised in Philadelphia and moved to Boston at his age 26. Two linguistic variables that have different phonemic systems in Philadelphia and Boston were focused on in this study: 1) The /o/–/oh/ distinction in Philadelphia and /o/–/oh/ merger in Boston, 2) The split short-a system (a phonemic distinction between tense /æh/ and lax /æ/ with various phonological and lexical conditioning) in Philadelphia and the nasal short-a system (an allophonic alternation between tense /æh/ before nasals and lax /æ/ before non-nasals) in Boston [1]. Two sets of recordings of Chomsky's speaking publicly in 1970 and 2009 were transcribed and force-aligned, then F1 and F2 of /o/ and /oh/ (964 tokens) and short-a (844 tokens) were extracted using the FAVE suite [2] and analyzed using R [3].

Mixed effect regression analyses show that Chomsky's /o/ has significantly raised and backed over 40 years while /oh/ remained stable. Although his /o/ shifted significantly towards /oh/, the two phonemes remained distinct in 2009 (see Figure 1). The raising and backing of /o/ towards /oh/ in the direction of the Boston merger suggests that Chomsky was able to adopt features of a new dialect over time as a result of contact with this second dialect well past the critical period.

Chomsky's short-a patterns also provide an interesting picture of an adult speaker's accent shift. In 1970, almost all /æh/ tokens were lax, displaying neither a split nor nasal system. In 2009, in contrast, a pattern similar to a nasal system emerged: almost all non-prenasal tokens were lax while all prenasal tokens were raised except for ones in open syllable. Still, there is not a discrete alternation between tense and lax /æ/ (See Figure 2). It is also notable that most prenasal /æ/ tokens are raised but not fronted, which is a different pattern from the nasal system, strictly speaking.

We argue that this change resulted from increased coarticulatory nasalization effects. The proposed scenario is as follows: Chomsky abandoned his native split system after he left Philadelphia and the realization of his short-a was invariably lax in 1970. Over time, however, his phonetic realization of /æ/ could have changed due to coarticulatory nasalization effects on /æ/ [4]. The nasality of /æ/ in words that were lax in 1970 but raised in 2009 was measured in A1-P0, which indicates how oral or nasal a sound is. This showed that his nasality had increased significantly between 1970 and 2009 (t=6.7402, p<0.001). We propose that this may be a case of hypo-correction where Chomsky, when restructuring /æ/ produced by other speakers, may have attributed the coarticulatory nasality to raising of F1, failing to undo the coarticulatory effect. (487 words)
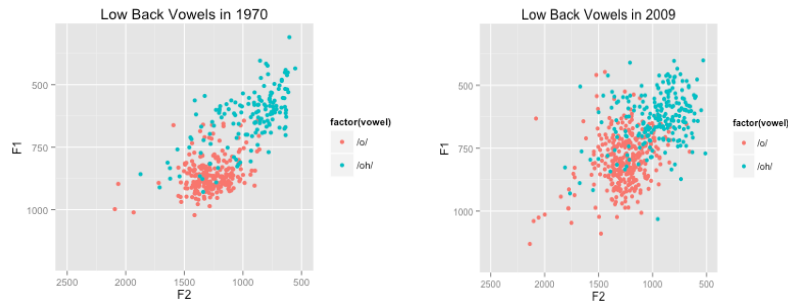
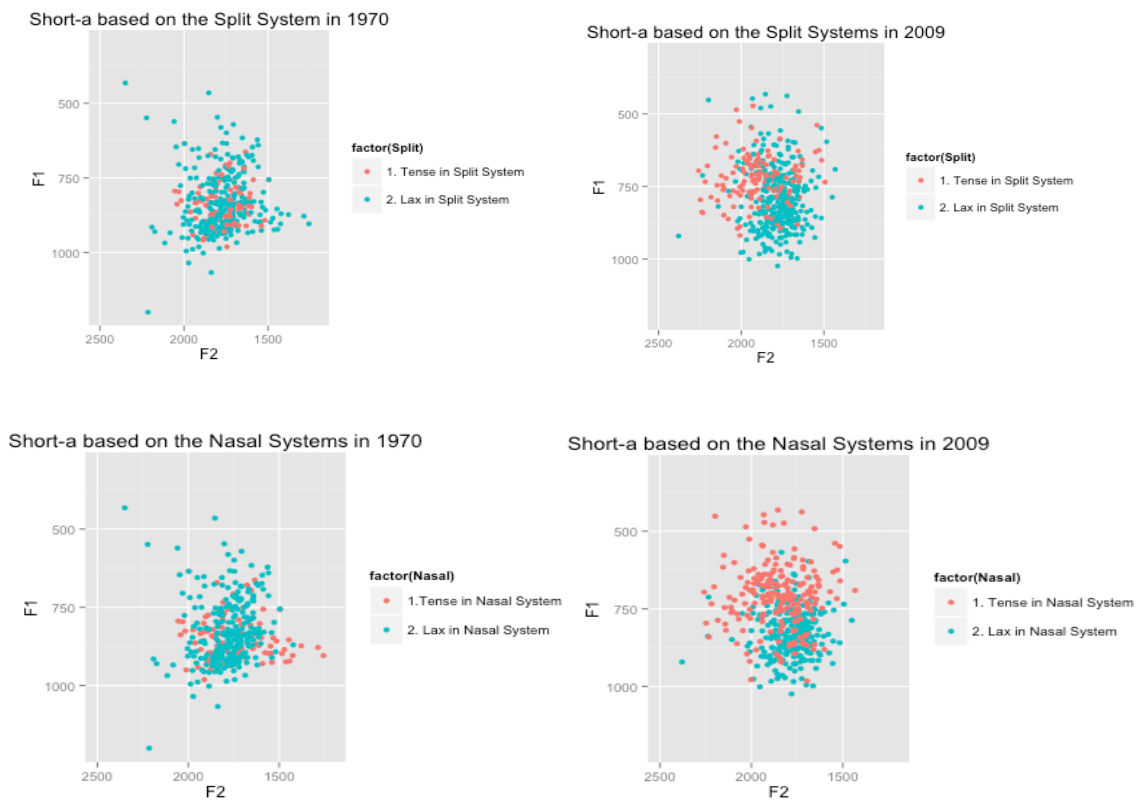Figure 1. Chomsky's low back vowels /o/ and /oh/ in 1970 and 2009.



Figure 2. Chomsky's short-a in 1970 and 2009 based on a split and nasal system.

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# Prosodic Marking of Second Occurrence Focus in Korean

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This paper investigates the intonational expression of second occurrence (SO) focus in Korean and its implications on the semantics-phonology interface. SO focus "is an expression [...] in the scope of a focus-sensitive operator, [⋯], and a repeat of an earlier focused occurrence" (Beaver and Clark 2008: 119). An example of SO focus is shown in (1), from Partee (1999: 215). In A, *vegetables* is in the scope of a focus-sensitive operator *only* and it is repeated in B, and thus a SO focus word; the SO focus is preceded by another primary focused item *Paul* which is in the scope of a focus-sensitive operator *even*.

(1) A: Everyone already knew that Mary only eats [vegetables]$_F$.
    B: If even [Paul]$_F$ knew that Mary only eats [vegetables]$_{SOF}$, then he
        should have suggested a different restaurant.

Strong theorists claim that interpretational effects for focus are exclusively from pragmatics, independent of phonological focus marking (Kadmon 2001, Schwarzschild 1997, Roberts 1996). They take SO focus as their evidence arguing that SO focus is an example of accentless focus. On the contrary, a weak theory of focus assumes syntactic mediation between semantics and phonology (Beaver and Clark 2008, Beaver et al. 2007, Selkirk 2002). Studies of acoustic correlates of SO focus in Englsh and German have supported the weak theory, showing that SO focus is prosodically marked: in English, SO focus is marked by longer duration and intensity, but F0 prominence is suppressed (Beaver et al. 2007). However, this is not a typologically justifiable claim.

To address this issue, a production experiment was conducted for SO focus marking in Korean. Among the 240 primary focus, 240 SO focus, and 240 nonfocus items produced from 10 native Korean speakers (five male, five female), 120 items for each focus type from 5 participants out of 10 were measured for duration. The results show that SO focus in Korean is not marked by duration although primary focus in Korean is significantly marked by duration, in which case Korean data in this study support the strong theory. If later analysis shows that SO focus in Korean is marked by significantly prominent pitch accents, this will support the weak theory. Also, the way SO focus is marked in Korean will provide insights on the interaction between prosodic features and the interaction between intonational phonology and interpretation.

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# Infant-directed speech might be most beneficial
# around the onset of speech production

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Infant-directed speech (IDS) is a descriptive term for the characteristic speech that caregivers in many cultures direct towards infants. Compared to adult-directed speech (ADS), IDS is often higher pitched, with greater pitch excursions, and shorter utterances, among other differences (Fernald et al., 1989). While caregivers across many different cultures and communities use IDS, the magnitude of the difference between IDS and ADS varies (Englund & Behne, 2006; Newman, 2003). Nevertheless, the general acoustic pattern of IDS is readily identifiable to adult listeners.

A substantial literature has observed infants' preference for IDS over ADS using a range of stimuli and procedures across a variety of ages and methods (e.g. Cooper & Aslin, 1990; Fernald, 1985; Kitamura & Lam, 2009; Singh, Morgan, & Best, 2002; Werker & McLeod, 1989). Infants' preference for IDS over ADS even extends beyond their native language (Werker, Pegg & McLeod, 1994). To date, however, developmental changes in infants'preference for IDS as a function of the identity of the language being exposed have not been systematically investigated. In this study, we investigate Korean infants' preference to the IDS as a function of language (English and Korean) and age (6-9 months and 12-15 months old).

We employed the head-turn preference procedure (HPP) to test Korean infants' preference for IDS or ADS in Korean and English. Korean-learning infants aged 6-9 (n=27) and 12-15 months (n=46) participated in the study. They participate in the English experiment first, and returned within one week for the Korean experiment. The English and Korean stimuli were both constructed based on spontaneous speech of mothers speaking to their infants and also to another adult. Samples of the speech were subjected to perception tests for their IDS- or ADS-likeness and the level of noise, and the final set of samples were used to construct 8 IDS and 8 ADS stimuli lasting 20 seconds in each language. The English stimuli were part of the ManyBabies project in which we participated.

The task consisted of a training phase (2 warm-up trials) and a test phase (8 IDS trials and 8 ADS trials). For the test phase, four pseudo-random trial orders were created; one trial order was randomly presented for each infant. Each trial order contained 4 blocks of 4 trials (2 IDS trials and 2 ADS trials). When the baby looked towards the stimuli, an experimenter blind to the condition of the stimuli recorded the looking time by using the keyboard outside of the experiment booth. The trial ended if the baby looked away for 2 seconds or longer, or when the 20-second trial has run through.

A mixed effect linear regression mode was constructed with the looking time as the dependent variable, Register (ADS and IDS), Language (Korean and English), and Age (Young and Old) as fixed effects, and Participants and Trials as random effects. There was a significant interaction between Register and Language (t=2.2). This interaction indicates that infants prefer listening to English over Korean in ADS though no such preference exists for IDS. There was also an interaction between Language and Age (t=-2.6). This interaction indicates that Korean infants prefer listening to English over Korean when young, but they prefer listening to Korean to English as they get older. Overall, then, there was a preference for IDS across age and language. Korean infants' preference for their native language, however, seems to increase towards the end of the first year of life, and this increase is greater for IDS than ADS (Figure 1).

The evidence suggests that IDS augments infants' attention to speakers (and presumably what speakers are saying) because of highly salient acoustic qualities such as frequency modulation (Cusack & Carlyon, 2003). Acoustic analysis shows that pitch was higher in IDS than ADS in all measures, i.e. maximum, minimum, mean, and range, in both languages. Further, these measures were greater in Korean than in English. It is, therefore, not likely that younger infants were drawn to English IDS more than Korean IDS because of pitch. A further analysis is underway to understand the factor in English IDS that attracted younger infants' attention more than Korean. Regardless of the reason behind younger infants' preference for English IDS, however, it seems that Korean infants are increasingly attracted to their native language more with the development of their perceptual learning.

These results support a language-universal account of infants' well-documented listening preference for IDS, while providing the first evidence for the presence of an IDS preference in Korean-learning infants. Older infants' increased preference to the native IDS hints at the possibility that they might exploit IDS more efficiently than younger infants. That is, IDS is known to help the segmentation of words (Thiessen et al., 2005), and such beneficial features of IDS might be maximally helpful for children at the stage of word production to scaffold their language development.
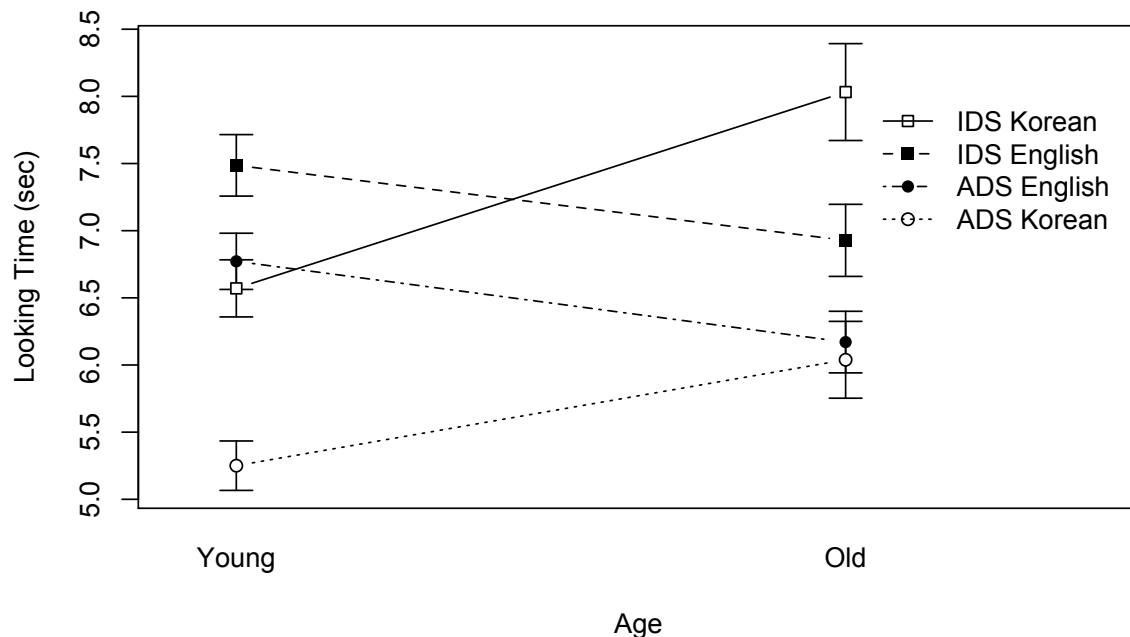


Figure 1. Korean infants' preference for IDS as a function of age and language

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# Prosodic focus for Korean learners of English

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This study investigates prosodic focus of Korean learners of English through a production experiment and a perception experiment. In the production experiment, three groups of Korean English learners of different English proficiencies (low level, intermediate level and high level) were recruited to produce the target stimuli both in broad focus and corrective focus situations. And in the perception experiment (not finished), 20 English native speakers were asked to identify the corrected digit representing corrective focus. Since English and Korean differ greatly in terms of prosody, it is interesting and important to see if Korean learners of English is able to acquire English prosody completely and to what extent their acquisition could reach.

In this research, we propose that (1) it is difficult for Korean learners of English to produce prosodic marking of focus in English, because the prosodic feature of their L1 (Korean) will negatively transfer to their prosodic acquisition of L2 (English); (2) The transfer effect becomes weaker as a result of their increasing English proficiency, but it still cannot be overcome utterly even by the advanced English learners because they already pass the critical stage of SLA and it is especially difficult to acquire L2 prosody. Among the intermediate and low levels, strong L1 negative transfer will be displayed. From observations of the production data, we find that there are no distinguishable differences between low level speakers and intermediate level ones, both failing to produce prosodic prominence in corrective focus and advanced speakers performed much better in realizing prosodic focus but still there are some failures. The observed results from the production experiment support our proposal. The perception data is not available so far.

# The (un)availability of English plural allomorphy

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## 1. Introduction

Traditionally, it is well known in literature that plurality within nominal structures are realized within a single projection namely the numeral phrase (#P). However, many recent investigations have demanded for an account which classifies morphological plurals with further precision (Borer 2005, Alexiadou 2011, Kramer 2016). By means of scrutinizing the typology of plurality, this work extends the recent discussions put forward by Kramer (2016) and provide additional findings of its own. Furthermore, the work deals with the morphological (ir)regularities of Swahili and English plurals so as to make cross-linguistic generalizations on the possible domains in which pluralization takes place. Here, the hierarchical structure in (1) is utilized:

(1)  $\sqrt{P}$ < $n$P < #P < DP < KP < PP

## 2. Swahili data

Exemplary cases of irregularity in morphological forms are observed in Swahili nominals which run on the basis of a rich gender system. The general principle of plural (as well as singular) inflections in Swahili entertains the notion of allomorphy governed by the mechanism of complementary distribution (Carstens 2008).

(2)  a.     m-tu ('a person')                → wa-tu ('people')
            SG-person [+αGender A]           PL-person [+αGender A]
      b.     ki-pima-joto ('a thermometer') →  vi-pima-joto ('thermometers')
            SG-measure-heat [+αGender D]     PL-measure-heat [+αGender D]

Swahili displays a type of morphology which patterns specifically to semantic properties. Thus, we see a dominant effect of allomorphy conditioning even within plural verb-noun (VN) compounds derived under the $n$P domain as shown in (2b).

## 3. English data

English, on the other hand, shows morphological mismatches between nominals

such as *wisdom teeth* (\**wisdom tooths*) and *sabertooths* (\**saberteeth*). Arguably, the (ir)regular plural forms of the two are created under separate rules governed by different domains. In fact, the search for such morphological asymmetry in English paves way to an unconventional way of handling plurality.

(3)  person  →  people
(4)  person  →  persons ('individuals of people')
(5)  person  →  people ('an ethnic group') →  peoples ('ethnic groups')
           irregular morphology (*n*P)    regular morphology (#P)

Observing (3) and (4), we realize that English plural nominals are subcategorized into two different sets. Significantly, this captures the notion that *n*s are sensitive to irregularities in form (e.g., *people*), whereas #s are not (e.g., *persons*). More significantly, the application of both regular and irregular inflections is possible as shown in (5). This suggests that the roles undertaken by *n*P and #P are clearly distinct from each other and that English exhibit double plurality (e.g., *peoples*) which is an additional finding previously unelaborated by Kramer (2016).

## 4. Findings

A couple of generalizations can be made through the data and analysis provided thus far: [1] Both English and Swahili make use of *n*Ps in order to denote plurality. [2] English exhibits more ways of laying out plurality than Swahili since it displays split plurality using a *n*P and #P.

# Probing L2 learners' syntactic knowledge by prosodic sensitivity

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## I. TWO TYPES OF INTRANSITIVES

Since the introduction of the Unaccusative Hypothesis by [6], it has been widely assumed that intransitive verbs divide into two subtypes depending on the underlying position of the subject argument: unaccusative verbs, whose subject is base-generated within VP like an object of a transitive verb and unergative verbs, whose subject is originated outside of VP like a subject of a transitive verb. Many studies have observed that the two types of intransitives in English show different prosodic pattern. Specifically, the relative preference of sentence stress being on subjects over verbs is higher in unaccusatives than in unergatives ([2],[3][5]), as in (1) (capital letters indicate sentence stress).

(1) a. Unaccusatives: a STUDENT arrived > a student ARRIVED
    b. Unergatives: a STUDENT walked ≒ a student WALKED

## II. RESEARCH QUESTION

However, it has not been well investigated whether L2 English learners can acquire such a distinct prosodic pattern depending on verb types. In the experiment reported here, we investigated L2 learners' prosodic sensitivity depending on verb types.

## III. EXPERIMENT

### A. Subject

183 adult native Korean speakers in different proficiency participated in the experiment. Since Korean is not a stress-based language, we expect that recruiting L2 English speakers with Korean L1 minimizes the L1 prosody effects on the application of English Nuclear Stress Rule [1]. English native speakers were also recruited as controls.

### B. Materials

We manipulated two factors with two levels each: (i) verb types (unaccusatives, unergatives) and (ii) prosody (sentence stress on the subject noun, sentence stress on the verb), for a total of four conditions as shown in Table I.

TABLE I

| Experiment Design | | Verb types | |
|---|---|---|---|
| | | *unaccusatives* | *unergatives* |
| **Stress assignment** | *Subject* | a BABYcame | a BABY swam |
| | *Verb* | a baby CAME | a baby SWAM |

8 unaccsuative verbs and 8 unergative verbs in high frequency were used in target sentences. Each subject item (e.g., baby) was rotated through the four conditions in a Latin square design. Subject nouns were all human individuals to control animacy. Three native English speakers confirmed that each target sentence is semantically and pragmatically understandable. A trained male English native speaker recorded every target and filler sentence in a sound-attenuated booth. Every target sentence contains three words, an article a, a subject noun, and a verb, forming one intonational phrase without any pause between words. One unaccusative verb and one unergative verb were paired, as shown in the table 1. We manipulated each pair to maximally match in the number of syllables of the verbs. In addition, we confirmed the stress assignment conditions both perceptually and acoustically. Two native English speakers listened to all the target sentences in random order and marked which word bears sentence stress. Both native speakers agree with the manipulation that sentence stress perceptually were in the subject in the subject-accent condition while in the verb in the verb-accent condition. In addition, the acoustic analyses of the auditory targets show that in the subject-accent condition, subjects were significantly more prominent than verbs in terms of high pitch, longer duration and bigger intensity, and

vice versa in the verb-accent condition. 16 transitive sentences and 16 *wh*-interrogatives were included as fillers. All audio stimuli, including targets and fillers, were presented with a broad-focus inducing context.

## C. Procedure

Participants listened to audio files paying attention to the prosody and decided whether the prosody of the sentences feels natural under the given broad-focus inducing context. Participants listened to each audio stimulus two times: one before and the other after the presentation of the corresponding written target sentence. The purpose of the first audio stimulus presented before the visual stimulus is to block the implicit prosody that could be activated from silent reading of the visually presented corresponding sentence. The same audio stimulus was presented after the visual stimulus to give participants a second chance of decision in case participants were not able to understand the meaning of sentences at the first round due to their weakness in listening comprehension. The results on the targets that participants did not correctly understand the meaning of the sentence were excluded from the analysis.

## D. Results

The control group and the advanced group prefer the subject-accent condition to the verb-accent condition in both unaccusatives and unergatives conditions. Crucially, the two groups prefer the subject-accent condition over the verb-accent condition more in the unaccusative condition than in the unergative condition as expected even though the difference between the unaccusative condition and the unergative condition is much bigger in the control group. In the beginner, low- and high-intermediate group, the verb-accent condition was preferred over the subject-accent condition in both unaccusative and unergative condition. We interpret this as showing that L2 learners in those groups do not fully acquire the application of the English NSR, so they are biased to the sentence-final stress in wide-focus contexts. The greater subject-accent preference in unaccusatives than unergatives by the advanced group, but not by the other L2 learners, show that at least advanced learners can distinguish different prosodic pattern depending on verb types. Interestingly, the high-intermediate group shows that the relative preference of the subject-accent condition over the verb-accent condition in the unaccusative condition is higher than that in the unergative condition even though participants in that group still prefer the verb-accent condition. One potential accounts for the results of the high-intermediate group is that they distinguish unaccusatives and unergatives with respect to syntactic differences but their premature acquisition of the English NSR veils it.

## IV. IMPLICATIONS ON L2 LEARNERS' SYNTACTIC KNOWLEDGE ABOUT ENGLISH INTRANSITIVES

We suggest that the results of the current experiment have two crucial implications on L2 learners' syntactic knowledge about intransitives. First, given that the application of the NSR to different syntactic derivations results in such distinct prosodic patterns ([4], [2]), the results implies that advanced (and potentially high-intermediate) L2 learners distinguish different syntactic derivations of the two types of intransitives even though their surface realizations share the same preverbal subject construction. Second, the results support the idea that overpassivization errors with unaccusative verbs are triggered by the similarity in syntactic derivations between unaccusatives and passives [7]. Since advanced learners "correctly" knows the different syntactic derivations, overpassivization errors are mainly observed with unaccusative verbs rather than unergative verbs.

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# Adjunct Ellipsis in English?

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This paper explores the source of the ambiguity of sentences like (1) (Collins 20xx: 1). This sentence can be interpreted in two different ways, depending on whether the second conjunct 'one girl' is modified by a covert relative clause 'who I know'. Crucially, as for the reading where 'one girl' is modified by a covert relative clause, Collins (20xx) proposes that the relative clause is syntactically, but not phonologically present via the process *relative clause deletion*. Sentence (2) is another construction wherein a deleted relative clause is taken as the account for the ambiguous readings (Collins 20xx: 2). The deleted relative clause is proposed to be syntactically identical to its antecedent (3) and subject to a parallelism condition (4). Notably, the silent relative clause is argued to be deleted at PF in his analysis. Given a well-known phenomena such as sluicing and NP ellipsis etc., however, it is an issue of controversy if functional phrases such as DPs and CPs can undergo ellipsis (cf. Merchant 2001). We thus take up this issue, revisiting the constructions per se and suggesting an alternative analysis. Before presenting our analysis, we take into account why the other two competing hypotheses 'PF deletion' and 'LF Copying' of ellipsis phenomena do not fare as an the analysis of the invisible relative clause 'embedded' in the second conjunct. Given that C bears an E-feature and licenses deletion of TP rather than the CP itself (Merchant 2001, inter alia), PF deletion analysis of the relative clause is ruled out as a plausible line of analysis of the relevant construction. LF Copying hypothesis, on the other hand, assumes that the silent relative clause has no internal structure, which predicts that no movement should be involved within the relative clause, contra facts. With this state of affairs, we now pursue a third alternative analysis called 'an across-the-board (ATB) extraposition'. An ATB movement is commonly entertained as an approach to (pseudo)gapping, which is among the subtypes of ellipsis in English. Given that some kind of 'ellipsis' is assumed to be involved in the construction concerned in this paper, we resort to an ATB extraposition of the relative clause. Specifically, we propose that the relative clause is extraposed in an ATB fashion, which is followed by an additional remnant postposing of '&-bar' constituent, schematically represented in (5). This whole course of movement process is conjectured to be functionally motivated, i.e., ease of processing (Langacker 1974, Huddleston 1984, among others).

Interestingly, not only 'heavy' materials but also a variety of expressions can undergo shifting to the sentence final position if that operation makes processing any easier (cf. Fiengo 1974).

(1) At the party, I saw three boys who I know and one girl.

(2) At the party, there were more girls who I know than boys.

(3) Syntactic Identity

A relative clause R is deleted under syntactic identity with an antecedent relative clause.

(4) Parallelism

Relative clause deletion can only take place in the following structure:

[XP1.....[Head1 Antecedent].....] and/than [XP2.....[Head2 <Relative Clause>] .....] where Head2 is focused and XP1 is a member of F(XP2), the focus value of XP2.

(5) Step I: Coordination of two DPs, each modified by the same relative clause

[$_{\&P}$ [$_{DP}$[$_D$ three] [$_{RelP}$[$_{NP}$ boys] [$_{Rel'}$[$_{Rel}$∅] [$_{CP}$[$_{DP}$[$_D$ who]<[$_{NP}$ boys]>][$_{C'}$[$_C$∅][TP I know]]]]] [$_{\&'}$ & [$_{DP}$[$_D$ one] [$_{RelP}$[$_{NP}$ girl] [$_{Rel'}$[$_{Rel}$∅] [$_{CP}$[$_{DP}$[$_D$ who]<[$_{NP}$ girl]>][$_{C'}$[$_C$∅][TP I know]]]]]]]]

(Structure of the relative clause adopted from Collins (20xx))

    Step II: ATB Extraposition of the shaded relative clause

[$_{\&P}$ [$_{DP}$[$_D$ three] [$_{RelP}$[$_{NP}$ boys] [$_{Rel'}$[$_{Rel}$∅] ~~[$_{CP}$[$_{DP}$[$_D$ who]<[$_{NP}$ boys]>][$_{C'}$[$_C$∅][TP I know]]]~~]]] [$_{\&'}$ & [$_{DP}$[$_D$ one] [$_{RelP}$[$_{NP}$ girl] [$_{Rel'}$[$_{Rel}$∅] ~~[$_{CP}$[$_{DP}$[$_D$ who]<[$_{NP}$ girl]>][$_{C'}$[$_C$∅][TP I know]]]~~]]]]] [$_{CP}$[$_{DP}$[$_D$ who]<[$_{NP}$ girl]>][$_{C'}$[$_C$∅][TP I know]]]]

    Step III: Remnant postposing of the &' constituent

[$_{\&P}$ [$_{DP}$[$_D$ three] [$_{RelP}$[$_{NP}$ boys] [$_{Rel'}$[$_{Rel}$∅] ~~[$_{CP}$____]~~]]] [$_{CP}$[$_{DP}$[$_D$ who]<[$_{NP}$ girl]>][$_C$[$_C$∅][TP I know]]]] [$_{\&'}$ & [$_{DP}$[$_D$ one] [$_{RelP}$[$_{NP}$ girl] [$_{Rel'}$[$_{Rel}$∅] ~~[$_{CP}$____]~~]]]]

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# Korean English Learners' Comprehension of the Semantics of Disjunction

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It is widely known that the disjunction *or* leads to three different kinds of interpretations as in (1) which is divided into inclusive, conjunctive, and exclusive interpretation.

(1) The hen pushed the bus or the airplane

|     |                                                      |                             |
| --- | ---------------------------------------------------- | --------------------------- |
| a.  | The hen pushed the bus or the airplane or both.      | inclusive interpretation    |
| b.  | The hen pushed the bus and the airplane              | conjunctive interpretation  |
| c.  | The hen pushed the bus or the airplane but not both. | exclusive interpretation    |

Tieu *et al.* (2017)

In many previous studies (Paris 1973; Braine & Rumain 1981; Chierchia *et al.* 2001; Singh *et al.* 2015), children showed general tendency of interpreting the disjunction *or* conjunctively and inclusively. In cases where only one of the disjuncts is true, they rejected disjunctive interpretation. Furthermore, they accepted disjunction when both disjunct are true. Thus, they showed different understandings when using the disjunction *or*, leaning toward the inclusive and conjunctive interpretation rather than the exclusive interpretation.

Regarding these various interpretations of *or*, Tieu *et al.* (2017) experimented on both children and adults. In this experiment, adults generally interpreted *or* as exclusively, whereas children interpreted the disjunctions either inclusively or conjunctively.

Based on the materials of Tieu *et al.* (2017), we ran a simple judgement task on L2 learners of English to see the tendency regarding the disjunction *or*. The materials are given below as in (2) and (3).

(2) John opened the window or the door.

    a.   John opened just the window or just the door; or both the window and the door.
    b.   John opened both the window and the door.
    c.   John opened the window or the door but not both.

(3) James painted either the car or the truck.

    a.   James painted just the car or just the truck; or both the car and the truck.
    b.   James painted both the car and the truck.
    c.   James painted the car or the truck but not both.

In line with Tieu *et al.* (2017), we constructed the materials in two kinds of disjunctions, one being the simple disjunction as in (2) and the other being the complex disjunction as in (3). The result displayed similar aspects to that of Tieu *et al.* (2017). Like L1 children, half of the L2 participants tend to interpret *or* as conjunctively and inclusively. The other half interpreted *or* as exclusively, just as L1 adults do.

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# The Complementarity of Intentionality and Affectedness: Evidence from English Verbs of Killing

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What is possible or impossible for the meaning of linguistic expressions is a fundamental question in semantics (see e.g., the issue of manner/result complementarity in Rappaport Hovav & Levin, 2010; Beavers & Koontz-Garboden, 2012). In other words, what determines the semantic structure of such expressions is a major inquiry in semantics; without semantic restriction an expression can have any possible meaning in a language, which we know is not the case. In relation to this inquiry, this paper empirically supports a semantic principle, the *Complementarity of Intentionality and Affectedness* (henceforth, CIA) proposed in Lee (2016). According to this hypothesis, a minimal accomplishment predicate (which is defined as the combination of a verb and its complement(s) which is a causative accomplishment) cannot entail intention and result at the same time. For example, in the following transitive verb sentences with the minimal accomplishment predicates (e.g., *opened the window* in (1a)), either *accidentally* or *intentionally* can modify the predicates:

(1) a. She accidentally/intentionally opened the window.
    b. She accidentally/intentionally break the table.

The modifications with the non-intentional adverb *accidentally* suggest that the minimal accomplishment predicates in (1) do not entail the agent's intention about the events described by the predicates, although the default readings of the predicates are those in which the agents intentionally perform the relevant actions. By contrast, as shown in (2), the inherent results of the predicates cannot be denied in the continuations. That is, the patients of the events must be affected (see more about affectedness in Beavers, 2011):

(2) a. She opened the window, #but it was not opened.
    b. She broke the table, #but it was not broken.

Unlike the transitive verb sentences, English conative constructions are known to entail intention, but not result (see more about conatives in Ikegami, 1985; Levin, 1993; Goldberg, 1995; Broccias, 2001; Beavers, 2006; Vincent, 2013, among others):

(3) a. She (#accidentally) shot at the bird, but missed it.
    b. She (#accidentally) kicked at the ball, but missed it.

In (3) the non-intentional adverb *accidentally* cannot modify the conative predicates (e.g., *shot at the bird*), and this indicates that the agent's intention is involved in the events denoted by the predicates. For instance, (3a) without the adverb roughly means that the referent of the subject deliberately shot the bird. Note, however, that the relevant results (i.e., contact) of the conative predicates can be denied as shown in (3). Therefore, the conative sentences in (3) also support the CIA, since only intention, but not result, is entailed in the minimal accomplishment predicates.

However, we can see that there are strong potential counterexamples to the CIA in English. For example, some verbs of killing like *murder* or *assassinate* are normally considered to entail the agent's intention (see e.g., Dowty, 1991; Talmy, 1985; Lemmens, 1998; Kamp, 1999-2007; Grano, 2015, among others), and the patient must die for a sentence headed by the verb to be true. If those verbs really entail both result and intention at the same time, and thus minimal accomplishment predicates headed by the verbs entail both result and intention simultaneously, then we clearly have many counterexamples to the CIA, and this semantic hypothesis should be modified or rejected. In this paper, however, I show with the data collected from the Web that some English verbs of killing do not actually entail intention, though intentional interpretations are their implicatures. Rather, I argue that the Web data empirically support the CIA, and this semantic principle can serve as an important condition on how the meanings of minimal accomplishment predicates are systematically constructed in natural languages like English and Korean.

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# On the role of emphatic/attenuating NPI *kulehkey* in Korean

**Data and puzzle.** The purpose of current study is to identify the pragmatic role of adverb *kulehkey* in Korean. Our main data is illustrated in (1), where *kulehkey* yields three different meaning. First, it is interpreted anaphorically as 'in that way' (1a); or interpreted as *rhetoric scalarity* (Israel 2001, 2004), as to *attenuating* (1b) or *emphasizing* the degree of a gradable predicate *tep* 'be hot' (1c):

(1) a.  Mina-ka        na-eykey      **kulehkey**      malha-ss-e.              [anaphoric]
        Mina-Nom       me-Dat        in.that.way      tell-Past-Decl
        'Mina told me **like that/in that way**.'

   b.  onul-un        **kulehkey**      tep-ci          ahn-ta. [rhetoric scalar - attenuating]
        today-Top      all.that         hot-Comp        Neg-Decl
        'It is **not all that** hot today.'

   c.  onul-un        way   **kulehkey**      tewu-lkka?        [rhetoric scalar - emphatic]
        today-Top      why   so.much          hot-Q
        'Why is it **so** hot today?'

Given that *kulehkey* is decomposed into the adjective predicate *kuleh* 'be like that' and adverbializer *key*, the scalar meaning in (1b,c) is unexpected. In this paper, we argue that the role of scalar *kulehkey* in (1b, c) does not involve anaphoric meaning but logical NPI. Especially, building on the work of Israel (1996, 2001, 2004), we show that NPI-*kulehkey* is associated with pragmatic affect. For the rhetoric of scalar reasoning in order to intensify or attenuate the rhetorical force of an utterance, the NPI-*kulehkey* in (1b) is attenuating which mitigates the force of the given proposition, whereas the NPI-*kulehkey* in (1c) is emphatic which has the strong force.

   Crosslinguistically, many languages employ adverbial polarity items which serve as attenuating scalar particles, denoting end-points of pragmatic scales (e.g., *all that, so very* in English, *grand chose* 'much stuff' in French, *bijster* 'very' in Dutch, *sonna-ni* 'that much' and *anmari* 'too very' in Japanese (Vasishth 1998)). However, the attenuating NPIs above languages typically do not have scalar force when they are NOT in the scope of negation:

(2)    a. John is **not all that** clever.                    [attenuating NPIs]
       b. *John is **all that** clever.

In this vein, such a dual use of emphatic and attenuating polarity item in Korean is quite uncommon. Given these observations, we address the following questions: First, what is the contribution of *kulehkey* for rhetoric scalarity? Second, what explains the polarity dependency of *kulehkey*-NPI distributions? Third, how can the rhetorically scalar distribution of *kulehkey* further empirically evidenced by corpus study using methodological analysis?

**Analysis.** We claim that the theory of *nonveridicality* can properly provide the unified analysis of NPI-*kulehkey*, which is licensed by the negation operator (i.e. strong NPIs) or by nonveridical operators (i.e., weak NPIs) in the logical structure, which is illustrated as follows:

(3)    The role of emphatic/attenuating NPI *kulehkey*:
       a. **Strong NPI** in (1b) → rhetoric of **attenuation**
       b. **Weak NPI** in (1c) → rhetoric of **emphasis**

The local scope of a nonveridical operator is defined based on c-command at LF (Giannakidou 1998; see also Klima 1964; Jackendoff 1972; Ladusaw 1979; Linberger 1980, Zwarts 1995). Nonveridicality refers to the environments such as questions, antecedents of conditionals, imperatives, under **negation**, and intentional operators such as clause-embedding predicates like *want*. Veridicality and nonveridicality are defined in terms of truth as in (4):

(4) (Non)veridicality for propositional operators (following Giannakidou 2006)
   i.   A propositional operator $F$ is veridical iff $Fp$ entails or presupposes that $p$ is true
        in some individual's model M(x); p is true in M(x), if M(x) $\subset$ p.
   ii.  If (i) is not the case, $F$ is **nonveridical**.

    iii.   A nonveridical operator *F* is **antiveridical** iff *Fp* entails *not p* in some individual's model: iff M(x) ∩ p =∅

F is veridical iff whenever Fp is true, p is also true; if this does not hold, F is nonveridical. A nonveridical F is antiveridical iff whenever Fp is true p is not true. The typical antiveridical operator is a negation. Antiveridicality constitutes a proper subset of the nonveridical. Given this, we claim that both strong and weak NPI-*kulehkey* are sensitive to nonveridical operator in which only strong NPI variant is c-commanded by negation operator. It leads us to corpus study which reveals the NPI distribution of *kulehkey* with interaction of nonveridical operators.

**Corpus data & Analysis.** For detailed examination, we collected data from Sejong 21 sense tagged corpus, consisted of approximately 1 million words of spoken texts. We first sorted anaphoric use vs. NPI use of *kylehkey*; and then extracted morphemes co-occurring with *kulehkey* in order to see whether the distribution pattern of *kulehkey* arises in a nonveridical environment. We used collostructional structure for the methodological analysis. As illustrated below, compared to the NPI-*kulehkey,* the anaphoric-*kulehkey* exhibits meaningful collostructional strength with verb (VV), verb-derived suffix (XSV) and common nouns (NNG). In contrast, the NPI-*kulehkey* exhibits meaningful collostructional strength with adjective (VA), negative (VCN), discourse particle (JX), adjective-derived suffix (XSA), final ending (EF), auxiliary (VX), and base root (XR). The preferred morphemes of NPIs are firmly characterized as being scalar. For further study, we will analyze written corpus for presentation.
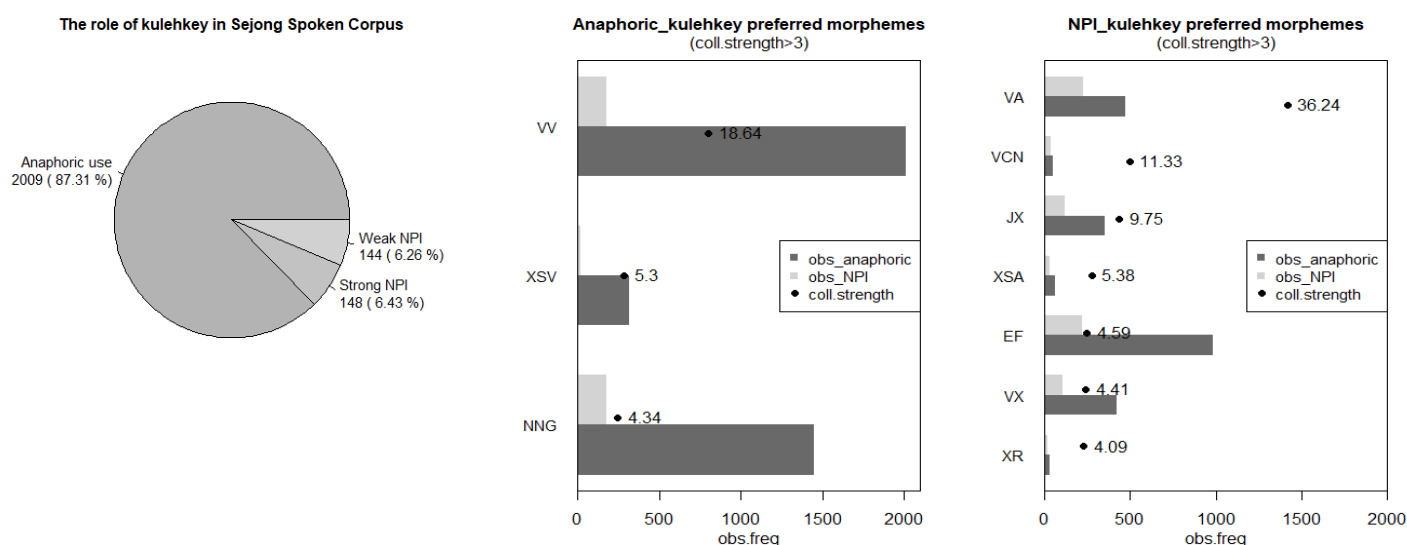


Additionally, we examined the triggering environment of weak NPI-*kulehkey* which is represented as below:

(5)      Triggering environments of weak NPI-*kulehkey*: question, evidential, conditional, volitional *siph* 'want', epistemic modal, *although*-clause, morphologically negative verb *molu* 'not.know'

As evidenced above, the weak NPI-*kulehkey* is licensed by typical nonveridical operators such as question, modal and intensional operators (i.e. conditional, volitional verb, *although*-clause).

**Conclusions.** In this paper, we identified *kulehkey* as a novel type of NPI in terms of pragmatic perspective. Contrary to the traditional role of rhetoric scalar NPIs, the distinct behavior of *kelehkey* involves the dual function of emphatic and attenuating scalarity in a relation of mirror image. Theoretical implication of current study is to provide the widened view of crosslinguistic variation to cases where the scalar intensifier isn't necessarily a minimizer.

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# Stance expressions in Korean college students' English writing

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Using an in-house non-native corpus and an established native corpus as data, this study strives to identify and compare the most frequently-used word sequences (i.e. lexical bundles) in the two corpora with reference to their structures and functions. In particular, this study pays its focused research attention to stance expressions culled from the two corpora qualitatively as well as quantitatively. It is acknowledged that Korean learners are less proficient in managing hedging epistemic expressions instrumental in the use of cautious language. Non-native writing further features more evaluative and stronger stances toward the propositional content. The study also suggests some pedagogical benefits of instructions about norms of academic writing and/or of recurrent exposures to the authentic uses of stance expressions.

# 4차 산업혁명과 영어교육

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본 발표에서는 4차 산업혁명이 영어교육에 미칠 전반적인 영향에 대하여 논의하고 관련하여 영어교육이 그에 어떻게 대응하여야 할지에 대하여 개괄적으로 논의한다. 첫째, 사회가 점점 더 '초연결성', '초지능성', '초융복합성'의 특징을 지닐 것이라는 예측을 수용적으로 논의하면서, 현 영어교육 체제가 지닌 어두운 측면을 조명한다. 둘째, 사회/경제체제에 요구되는 '윤리화'와 '유연화' 및 개인에게 요구되는 21세기 역량에 대하여 논의한다. 셋째, 사회적 실천으로서의 영어에 대한 가장 포괄적인 이해와 변화하는 사회/문화 맥락에 따른 비판적 다중문해력 교육 등의 필요성을 검토한다. 넷째, 지금까지 논의된 요구에 대한 영어교육의 전반적 대응 방안을 제시한다. 기계와 인간의 상호보완성을 통하여 기존 문제를 해결할 수 있음과, 영어교육에 대하여 실존적/인간주의적 접근이 필요함, 그리고 이러한 것이 융복합 영어교육의 틀 안에서 이루어질 수 있음을 제안한다. 마지막으로, 이러한 영어교육적 상황이 '체계기능언어학'과 같은 형태의 융복합적 영어 연구를 요구하고, 영문학 연구/교육가 지역성을 담아내면서 영어 문학 창작을 강조함으로써 언어/문화 연계성을 좀 더 부각하며 학습자들의 비판성/창의성/인성 함양에도 기여하여야 할 것임을 제안한다.

# 4차 산업혁명과 초등영어과 교육과정

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본 장에서는 2015 개정 교육과정에 제시된 영어과 교과역량이 무엇인지 살펴보면서, 어떤 내용이고 의미를 지니고 있는지 살펴본다. 그리고 2015 초등영어과 개정교육과정 성취기준이 과거 기존 2011 초등영어과 교육과정의 성취기준과 비교하여 지니고 있는 문제점에 관련하여 논의한다. 특히, 2015 개정 영어과 교육과정의 목표는 영어를 의사소통의 수단으로 말과 대화를 듣고 이해하고, 글을 읽고, 중심내용, 세부정보를 파악하고, 제시된 과제를 해결하고, 자신의 의견, 생각, 판단 등을 말이나 글로 표현하는 능력을 함양하는 것인데, 이와 같은 영어의사소통능력을 갖추기 위해서는 초등학교에서 고등학교에 이르기까지 제시된 성취 목표에 도달할 수 있게 하는 것이 중요하다. 그런 점에서 2015 개정 영어과 교육과정에 제시된 성취 수준을 면밀히 살펴 볼 필요가 있다. 금번 2015 개정 영어과 교육과정에서는 듣기, 읽기와 같은 이해 및 입력 기능이 강화된 반면, 말하기와 쓰기와 같은 표현 및 출력 기능에 해당하는 영어언어 영역은 기존 교육과정의 성취수준과 크게 다르지 않아, 입력과 출력 기능의 불균형이 다시 초래 된 점을 심각하게 지적하고 이러한 문제를 어떻게 해결 해 나가는 것이 바람직한지 되짚어본다. 아울러 4차 산업혁명시대에 접어드는 시점에서 초등영어과 교육의 바람직한 방향은 어떻게 정해져야 하는지 교육과정에 기초하여 살펴본다. 이런 논의를 토대로, 초등 영어교과의 전체 성취기준 또한 문제점을 해결하기 위해 어떻게 변하는 것이 바람직한지 고민하도록 한다. 아울러 4차 산업혁명시대 기술융합의 영어교육의 현장 사례를 현장교사들의 연구를 통해 소개하고, 이런 기술을 학교 현장에서 어떻게 활용할 수 있을지 고려 해 본다. 특히, 현장 교사들의 인공지능을 활용한 영어교육은 여전히 EFL환경애서 영어교육을 시작하는 한국의 초등학생들에게 2015 영어과 교육과정의 핵심역량인 '영어의사소통 역량', '자기 관리 역량', '지식정보처리 역량'등을 함양시키는 데 많은 도움이 될 것으로고 보고, 더불어 일상생활 중에 영어로 말할 기회가 적은 학습자들에게 영어로 대화를 나눌 수 있는 기회를 제공함으로서 2015 교육과정에서 취약한 표현기능, 즉 말하기 능력을 듣기 능력과 함께 균형 있게 발전시킬 수 있을 것이다. 끝으로, 4차 산업혁명시대에 앞으로 미래세대의 영어교육을 위해 초등교사가 갖추어야 할 요건은 무엇인지 살펴보고 간단하게 제시 해 본다.

# 4차 산업혁명 시대 중등 영어과 교육과정 개발 방향

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변화하는 세계 기후는 예측하기 어렵다. 과거 여름철에는 많은 비가 계속 내리는 장마가 있었지만, 요즘은 예측 가능한 장마보다는 국지적으로 집중 호우가 쏟아지는 경우가 빈번하게 발생한다. 예전에는 보기 힘들던 시간당 100mm 폭우도 불규칙적으로 발생한다. 언제 초대형 태풍이나 홍수가 우리를 덮칠지 모른다. 4차 산업혁명을 화두로 시작된 기술의 변화는 변화의 속도를 예측하기는 어렵지만, 기술의 변화가 앞으로 우리의 삶에서 어떤 모습을 보여줄 것인지에 관한 부분은 예측할 수 있다. 기술변화와 삶의 변화는 교육에 큰 영향을 끼친다. 인터넷 클라우드 기반의 인공지능(AI) 로봇과 같은 신기술이 공교육 현장에 도달하는 데는 그리 오래 걸리지 않을 것이다. 각종 규제로 이러한 변화를 막으려고 해도 이미 우리 일상생활에 자리 잡게 된 이러한 신기술은 마치 댐이 무너지고 큰물이 마을을 덮치듯이 어느새 우리 학교 현장에 핵심 수업 보조 도구로 자리 잡고 있을 것이다. 영어를 학습하는 방식이 학생마다 다르다는 것을 고려하면, 다수의 학생에게 똑같은 영어과 교육과정과 영어 교과서로 수업하는 방식은 이제 달라져야 할 것이다. 이 세션에서는 4차 산업혁명 시대를 살게 될 우리나라 미래세대를 위해 우리나라 중등 영어과 교육과정 개발 방향에 대해

# 4차 산업혁명과 초등영어교과서

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The present study aims to predict English education environments which would undergo a drastic change due to rapid developments of Machine Translation based on Artificial Intelligence(AI). The availability of portable or wearable translators is expected to evoke claims such that English education is no longer required, resulting in the aggravated English divide in both social and educational contexts. A distinction of two types of humans is predicted to emerge such as one who depends on AI and one who AI depends on. For those who depends on AI would satisfy with translators and they would not recognize the necessity of English acquisition. Nevertheless, basic literacy such as recognition of alphabets and English words in real life should be taught in order to improve the quality of life, since translators would not suffice to cover the basic literacy. For those who AI depends on, however, are expected to command higher level of English proficiency, since they are responsible for their judgment and decision-making and they cannot exclusively rely on translation output by AI translators.

# Patterns of Text-setting in Korean and English

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Music and text have in common in a way that the are rhythmic objects. The rhythm of language is usually expressed as speech prosody and the rhythm of music is represented with beat. Based on this similarity, the relationship between speech prosody and beat has been studied within a linguistic field. In particular, the music-language interplay in a song has been investigated and it developed to a 'text-setting model.' The text-setting means the system that directly pertains to the alignment of verse to tune in a song. The present study aims at modeling text-setting phenomena in Korean popular songs. The core question on which this work hinges is related to a linguistic account that regulates the phenomena in text-setting in Korean popular music.

To model the text-setting pattern, 20 popular songs in Korea were selected and text-setting patterns in those songs were categorized into four sections. First, the relationship between the phonological and the rhythmic boundaries was observed. The IP and AP boundaries tend to match with phrasal boundaries not with measure boundaries, and also the onset of a prosodic unit should occur on a strong beat. Second, the fundamental basis for Korean text-setting is parallelism and one syllable-to-one note mapping algorithm. Each syllable must be mapped onto one note, and this syllabic distribution must be identical with other verses if they share the same rhythm. Another observation was melismata. When one-to-one mapping is not possible, a melisma must occur in a song. A melisma is created based on the principle of parallelism and the relationship between the rhythm and prosody of text. The final point in this study is about English lyrics in Korean popular music. Korean popular music tend to include English text and it turned out that the text-setting for English verse is also based on the one-to-one mapping system and for this, a vowel should be inserted since consonant clusters are prohibitd in Korean syllabic system. The English text-setting patterns in Korean music are dissimilar to the patterns in English songs, so stree-to-beat mapping system does not operate.

Based on the findings from the analyses, the experiment with native Korean speakers was conducted. Five participants provided the data that show such general observations from Korean popular songs can predict native speakers' setting patterns. For English songs, they demonstrated that a general rule to regulate English text-setting does not exist and the same algorithm applies to Korean and English. Thus, this study attempted to establish the fundamental ground for text-settin gin Korean within a linguistic framework.

# Phonological CorpusTools를 이용한 코퍼스 기반 음운 현상 연구

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최근 음운론 연구에서는 빈도수(frequency) 및 음운 사용(usage)에 대한 고려를 하지 않으면 음운현상을 설명하는 데 있어서 한계에 처하게 되는 경우들이 많이 있다(e.g., Bybee 2003). 이를 극복하기 위해 말뭉치를 통해서 음운 연구를 하고자 하는 노력이 많이 이루어지고 있는 실정이긴 하나, 말뭉치 기반의 연구들은 철자 혹은 분절음의 단계에서 음운현상을 이용하는 사례들은 많은 반면, 전통적인 음운자질 단계까지 확장하여 연구하는 사례는 찾아보기가 쉽지 않다. 그 이유 중의 하나는 실제 사용되는 음성 말뭉치 중에서 철자단위가 아니라 음운 분절음 단위로 전사한 대용량 말뭉치가 많지 않으며, 설령 있다고 하더라도 전산 프로그래밍에 한계를 가진 연구자들이 음운론 연구를 위해 음운 분절음 단위로 전사된 대용량 말뭉치를 이용함에 있어서 한계를 느끼는 경우가 많기 때문이다. 본 논문에서는 말뭉치를 기반으로 한 음운 분석 연구에 도움을 줄 수 있는 도구를 활용하여 자연 발화 말뭉치를 활용한 사례들을 살펴보고자 한다. 구체적으로 음운 말뭉치를 활용하여 음운 현상 연구를 하는 연구자들이 활용할 수 있도록 개발된 Phonological CorpusTools(or PCT; Hall et al. 2016)를 이용하여 한국어 자연발화 음성 코퍼스(or Seoul Corpus; Yun et al. 2015)에 대한 음운론적 분석을 할 수 있는 방안을 마련보고자 한다. Seoul Corpus는 40명의 발화자들의 발화 내용을 철자 및 음운 단계의 전사를 해놓은 말뭉치이다. 예를 들어 한 화자의 어절 3,803개 중 2,053개인 53.9%의 어절이 철자와 음운 전사 사이에 불일치를 보일 정도로 이 말뭉치는 음운 현상을 연구하기에 적합한 말뭉치이다. 본 논문에서는 우선 PCT로 음운 현상에 대한 분석을 하기 위한 두 조건인 말뭉치에서 분석해야 할 분절음들의 종류 및 분절음들의 음운자질들의 표상 방법에 대해 논의한다. 이를 바탕으로 PCT가 전통적인 음운 분석 이외에 제공하는 여러 기능들 중 음소제약 확률(phonotactic probability), 기능 부담(functional load), 분포상의 예측성(distributional predictability), 음소의 분포상의 유사성을 측정하는 데 사용되는 쿨백-라이블러 분산(Kulback-Leibler divergence) 등의 기능 등을 살펴본다. 이러한 PCT의 여러 기능을 사용하여 Seoul Corpus에서 관찰되는 두드러진 음운현상에 대한 논의를 본 논문에서 하고자 한다.

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# A comparative study on prosodic focus in English and Korean

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This study adopted production and perception experiments to explore whether higher pitches are more effective in marking prosodic focus in two different languages, that is, English which exhibits prosodic focus with a nuclear pitch accent and Korean which does not have pitch accent.

In the production experiment, this study employs three sentence positions (including sentence-initial focus, sentence-medial focus and sentence-final focus) and three focus types (broad focus, contrastive focus and discourse-new focus) to study focus in both languages. The test stimuli (discourse-new focus and contrastive focus) are in a Q&A dialogue. The target sentences for broad focus are just simple sentences in story contexts. Six native speakers of American English and six native speakers of Seoul Korean were tested. Therefore, this study aims to examine the extent to which modulation by focus varies between English and Korean and it speculates that (1) prosodic modulation by focus is in fact greater in English than in Korean, including sentence-initial focus, sentence-medial focus and sentence-final focus, together with discourse-new focus and contrastive focus; (2) the range of F0 values of sentence-initial focus is wider and higher than that of sentence-medial focus and sentence-final focus. In other words, because of pitch declination, nuclear pitch accents in different sentence positions even with the same peak F0 value are not supposed to have the same prominence.

In order to confirm our hypotheses, a perception experiment will be carried out soon. Twenty native participants for each language will be sent an online link of recordings from the production experiment and after listening to sentences, they will be instructed to give a simple reply for each one. It is predicted that the greater prosodic modulation by focus in English will lead to a high identification rate in perception while the weak association in Korean will result in low identification. The perception experiment aims to model the detailed relationship between prosodic cue (pitch) and perceptual accuracy after getting more data from English and Korean, in order to prove that higher pitches are more effective in marking prosodic focus.

# Phonetic Properties of /l/-darkening:
# Effects of lexicality, gender and phonological contexts

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American English laterals become dark when they occur at the end of a word, known as /l/-darkening. It has been widely discussed that this darkening process is gradient rather than categorical in that the degree of darkness varies depending on various linguistic and non-linguistic factors.

The purpose of this study is to phonetically examine some of the linguistic and sociolinguistic factors to affect /l/-darkening by examining the acoustic quality of the word-final laterals in American English. Based on three male and three female speakers' lateral production, we explore the effects of (i) lexicality (i.e., whether speakers recognize the reading materials as real English words or non-words), (ii) speakers' gender (i.e., whether language users plan their /l/-darkening differently depending on their gender) and (iii) phonological contexts (i.e., the neighboring sounds wherein the target laterals appear). The production experimental results found that the degree of /l/-darkening was affected by the three factors in the way that (i) word-final laterals are darker when they occur in English real words than in non-words (Figure 1), (ii) female speakers produce their word-final laterals darker than male speakers do, and (iii) laterals are darker when they appear after back vowels than after front vowels (Figure 2).

Lexicality of words seem to play a role in /l/-darkening since words and non-words do not share the same activation process (Garman, 1990; McMillan & Corley, ms.). According to Lange-Küttner *et al.* (2013), speakers are aware of pre-coordinated articulator movements of real words but they are not equipped with the arrangements in non-words, therefore, producing non-words requires an extra process of transforming the reading materials into phonological representations and organizing articulators accordingly (Krishnan *et al.* 2013). Producing dark [l] involves additional gesture of tongue dorsum retraction toward the velum. Due to the absence of the arranged gestural movements, darkening process may be less frequent in non-words.

Previous studies regarding gender-based speech varieties have suggested that female speakers tend to use linguistic forms that are considered rather prestigious (Trudgill, 1972) or so-called 'standard' Mompeán-Gonzalez& Mompeán-Guillamón (2009). In American English, word-final laterals typically

become dark, which, arguably, is accepted as being a standard way of pronouncing word-final /l/. The experimental results, thus, can be understood in the way that females' word-final laterals are darker than males since they believe /l/-darkening word-finally is closer to be standard.

Darker laterals after back vowels are less surprising in that the constricted area for back vowels and for dark /l/ do not differ much. Both requires constriction on the back of the oral cavity. Thus, articulators travel less after back vowels compared to after front vowels, and laterals tend to be marked as dark.

Figure 1. /l/-darkening in words vs. non-words
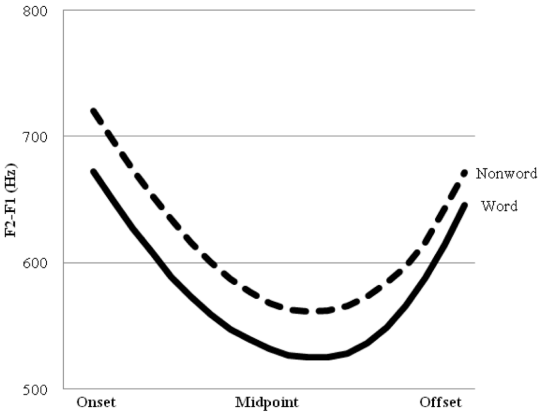


Figure 2. /l/-darkening in male vs. female speech
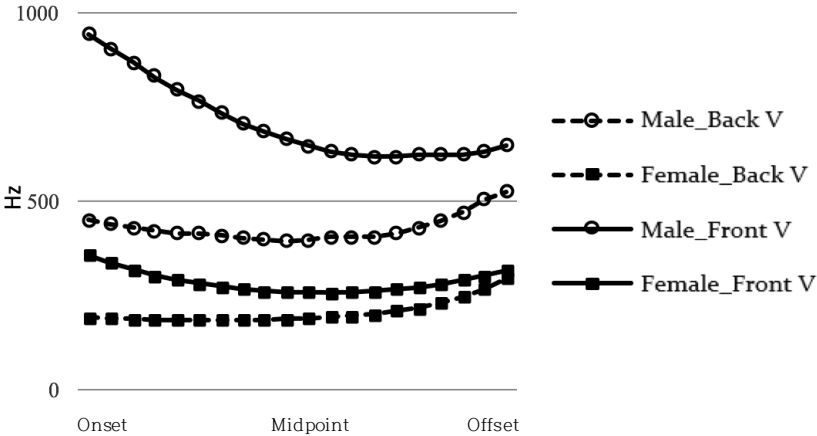
# Island-escaping Effects and Choice Functions
# in (Non)contrastive Fragments

## Gui-Sun Moon (Hansung University)

I am going to argue that the generalization on the island repair(G&L 2014), which is purely based on the dichotomic analysis of contrastiveness of correlates, cannot provide a complete account for the fragment data exhibiting mixed patterns in terms of island sensitivity as can be seen below..

(1) A: Does John want a SHORT list?
    B: *No, LONG.              (LBC: Left Branch Constraint)
(2) A: Is her new boyfriend a TALL man?
    B: No, SHORT.             (LBC: Left Branch Constraint)
(3) A: Did Abby vote for a GREEN party?
    B: *No, REFORM.
(4) A: Did they hire someone who speaks BULGARIAN fluently?
    B: *No, SERBO-CROATIAN.  (CNPC with relative clauses)
(5) A: Did they hire someone who speaks FRENCH?
    B: No, GERMAN.            (CNPC with relative clauses)
(6) A: Ben left the party because <u>someone</u> wouldn't dance with him.
    B: Yeah BETH ~~it was t.~~
(7) A: Is [the book that RINGO wrote] on sale?
    B: *No, LENNON.

Refuting the generalization I am going to propose that the island insensitivity of non-contrastive fragments can be induced not by repairability but by island evasion strategies such as short and cleft sources.

I am going to claim on the basis of the data observation that island evasion strategies can be applicable to the derivation of fragments if the correlate of a fragment is present inside the choice function scope. Therefore it appears that the fragment is insensitive to an island since a choice function interpretation triggered by an indefinite correlate can render the island-escaping effect without movement involved.

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# Negative stripping in English and Korean: A contrastive analysis perspective

Jungsoo Kim
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English and Korean employ the so-called 'negative stripping', as exemplified in (1):

(1) a.   John drank coffee yesterday, but not black tea.

    b.   John-i    ecey      khephi-lul  masi-ess-e.      haciman hongcha-nun
        John-NOM yesterday coffee-ACC drink-PST-DECL but      black.teaTOP
        ani-ya.
        NEG.COP-DECL
        'John drank coffee yesterday, but not black tea.'

In the English negative stripping example in (1a), the expression *black tea* receives contrastive focus in relation to its correlate *coffee* in the antecedent clause and the second conjunct containing the single non-*wh*-expression is interpreted as a full clause, "but John did not drink black tea" (Merchant 2003, 2004; Depiante 2000; Kolokonte 2008). In a similar manner, in the Korean negative stripping example in (1b), the single non-*wh*-expression is interpreted as a full clause (Kim 1997; Park 1997; Kim 2017). However, one noticeable difference between the Korean and English negative stripping constructions concerns the presence of a negative copula in the Korean negative stripping construction as opposed to the English one.

In general, negative stripping has been rather neglected in the previous literature. For instance, English negative stripping has received little attention and the emphasis has been limited to the position of the negation marker *not*, as pointed out by Merchant (2004). Similarly, Korean negative stripping has not been discussed in detail, as most previous studies on stripping in Korean have mainly looked into the positive stripping construction involving *-to* 'too' instead (Kim 1997, 2006; Park 1997).

In this study, I examine such negative stripping constructions in English and Korean from a contrastive analysis perspective. I first show that the two constructions show similar behavior in several respects, including a contrastive focus relation between the remnant and its correlate, diverse syntactic categories/grammatical functions of the remnant, P-stranding, and the possibility to induce both strict and sloppy identity interpretations. However, I also show that they exhibit different behavior in terms of the possibility to have a finite VP remnant, to occur in an embedded environment, to permit multiple remnants, and to violate island constraints.

I point out that previous derivational analyses resorting to putative source structures are problematic in accounting for intriguing grammatical properties of the negative stripping constructions in English and Korean. I then sketch formal representations of some representative examples of these constructions, adopting the framework of HPSG (Head-Driven Phrase Structure Grammar) and show that this analysis enables us to capture their numerous common grammatical properties and to explain their different behavior in certain respects, making the most of context information.

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# Resolving the Ambiguities of
# Negative Stripping Construction in English
## : A Direct Interpretation Approach

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Negative Stripping Construction in English involves the disjunction *but*, the adverb *not*, and a constituent NP. This construction is an incomplete sentence although it delivers a complete sentential meaning. Interpretation of this construction may be ambiguous in that the constituent NP can either be construed as the subject, or as the complements including the object. To generate such sentences and resolve the issue of ambiguity, we propose a construction-based analysis under direct interpretation approach, rejecting previous analyses based on deletion approaches. In so doing, we suggest a negative stripping construction rule that can account for ambiguous meaning. This rule further can enable us to explain syntactic structures and readings of Negative Stripping Construction.

# Rerooting the Clause

*Michael Barrie, Sogang University*
*Sihun Jung, Sogang University*

Subject-auxiliary inversion is normally restricted to the matrix clause in English:

(1) a.      Mary asked what John was reading.
   b.    ＊Mary asked what was John reading. [Standard English]

For many speakers, however, subj-aux inversion is permitted in casual speech (See Wood 2013 and references therein).

(2)      <sup>%</sup> Mary asked what was John reading. [Casual English]

Furthermore, subj-aux inversion is obligatory with certain embedded focus phrases in both causal and standard English. This, of course, is problematic for the standard I-to-C analysis of subj-aux inversion (Williams, 1974) as the C position is already filled with an overt complementizer.

(3) a.      Mary said that never again would she read Skinner.
   b.    ＊Mary said that never again she would read Skinner.

Thinking of subj-aux inversion as a root phenomenon, we propose that the embedded clause is built up and closed off as a root clause, giving rise to root clause effects, including being prosodically marked as a separate Intonational Phrase (also a root phenomenon). The remainder of the clause is then built up in the usual way. The lack of subj-aux inversion in Standard English in (1) is the result of a reduced CP (assuming a split CP in the sense of Rizzi, 1997) structure found only in true embedded clauses. The reduced CP does not provide a landing place for the auxiliary.

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# The Syntax-Semantics Interface of English Gapping

## Sang-Hee Park

Gapping has presented a great challenge to theories of all kinds. The two major problems it poses – (i) its peculiar distributional properties and (ii) the scope ambiguities exhibited by scopal operators – have resisted successful accounts in the previous literature. In this talk, I provide new arguments, based on novel corpus data, that recent derivational analyses that prescribe Gapping as a coordination phenomenon cannot adequately deal with (i) and (ii) (Johnson 2009; Kubota & Levine 2016; Potter *et al.* 2017). I propose an alternative analysis in which a combination of a surface-based ellipsis approach (Ginzburg & Sag 2000) and semantic underspecification approaches to scope ambiguity (Copestake *et al.* 2005; Egg *et al.* 2001; Richter & Sailer 2004) resolves the problems (i) and (ii).

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# Multimodality as viewpoint phenomenon: Introduction and case studies

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**Abstract**
This paper aims to introduce the notion of multimodality to the field of general linguistics and its relevance to viewpoint affordances. To exemplify the very notion, it also provides qualitative analyses of case studies including the study of, alongside the linguistic channel, co-speech gestures, political cartoons with textual information, and internet memes, among numerous other types. Among many ways to approach the topic of multimodality, Cognitive Linguistics found it intriguing because just like linguistic stimuli, multimodal artefacts are consequences of human conceptualization and especially because they are thus viewpointed necessarily (Dancygier and Vandelanotte 2017). In this vein, this paper accounts for how multiple channels framed by multiple viewpoints construct emergent meanings to help convey intended messages within the frameworks of Cognitive Linguistics such as conceptual metaphors (Lakoff and Johnson 1999), mental spaces & blends (Fauconnier 1997), and Discourse Viewpoint Space (Dancygier and Vandelanotte 2017).

The data in focus for case studies include the following data, which are followed by qualitative analyses in depth: 1) Co-speech gestures of the candidates in the 2015 US Presidential debate (Lee et al. 2016): this case study analyzes outstanding examples of metaphoric gestures employing the concept MOTION as source domain; 2) political cartoons on the North Korea nuclear crises; I discuss how the aforementioned cognitivist's frameworks contribute to different framings of political leaders in the dataset (Kwon 2018); lastly, 3) internet memes depicting debate between bodybuilders and crossfitters: this study addresses the construal of internet memes, combinations of an image and textual data, in a specific kind of discourse setting relying on the interaction between viewpoints implied by each of the inputs; it then provides a cognitive semantic account of the underlying conceptual structure within the framework of Discourse Viewpoint Space (Jin et al. In prep).

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# An -*(i)na* Disjunction Phrase and a Missing Alternative

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This presentation is about the disjunctive coordination of DP phrases in Korean, especially focusing on the conjunctive meaning derived from a DP disjunction phrases coordinated by -*(i)na*. Previous studies on English disjunction phrases (Allonso-Ovalle 2005; Simons 2005; Saurland 2004; Fox 2007; Klinedinst 2007) have found that the contexts with possibility modals or plural domains provide environments for conjunctive inferences to be evoked via scalar implicatures. What is interesting in Korean -*(i)na* phrases is that the contexts where conjunctive meaning is derived from -*(i)na* appear to be more prevalent than it would have been expected under the system based on English disjunction phrases. I explore the possibility that Korean has a limited access to a scalar alternative, the conjunctive phrase, in the process of deriving scalar implicature of an -*(i)na* phrase. This is based on the assumption that -*(i)na* has only a collective conjunction phrase as its scalar competitor but not a distributive one. This can lead to -*(i)na* phrases' prevalent generation of conjunctive meanings compared to other disjunctive items such as *or* in English. This analysis is still in the tentative stage, leaving various types of -*(i)n*a constructions unexplained. However, it is worth trying to apply the variant of scalar implicature approach, which has already been quite established in explaining free choice effect of disjunction phrases in many other languages.

# *Do so* and *do it* anaphora revisited

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This study focuses on semantic and contextual distinction between *do* so anaphora versus *do it* anaphora. There has been various attempts to distinguish these two types of VP anaphora. Cornish (1992) claims that *do so* phrase represents an atelic event corresponding to stative or activity verbs among Vendler's (1967) distinctions of aspectual types, and *do it* phrase a telic event corresponding to Vendler's achievement verb. In (1a), the antecedent event that *do it* refers to is a telic event, ie., *playing his first villain*.

(1) a. Michael Keaton was nervous of playing his first villain. People were telling him he was a big star so he should not *do it*.

(2) a. What is important is to make sure that the president makes the right decisions, that he *does so* in a timely manner. (Cornish 1992)

In (2a), *do so* means a generic or habitual property, i.e., *making right decisions*, that a president should have, but not a telic event that has an end point, which corresponds to the meaning of Vendler's state verb or activity verb.

Lakoff & Ross (1976), Kehler and Ward (1999), and Culicover & Jackendoff (2005), on the other hand, claim that *do so* occurs only with eventive antecedents as in (3c) but not with stative ones as in (3a-b). A state verb or a non-action verb such as *dislike* or *fall* cannot be the antecedent of *do so*.

(3) a. * Robin dislikes Ozzie, but Leslie does not do so. [Stative, C&J: 284]

   b. * Robin fell out the window, but Leslie did not do so. [Non-action event, C&J: 284]

   c. Robin read the newspaper today, but Leslie didn't do so. [Action event, C&J:284]

Huddleston and Pullum (2002), however, claim that *do so* can occur with non-actional antecedents as shown in (4) contra C&J.

(4) When the tree fell, it did so/*did it with a loud crash. [Huddleston and Pullum 2002: 1532]

In addition, recent corpus-based studies such as Houser (2010) and Miller (2013) show that *do so* is not completely banned from occurring with stative antecedents.

This diversity of the views on the distinctive properties of these two type of VP anaphora suggests that *do so* and *do it/this/that* are not in complementary distribution as also shown in (5) by Quirk et al (1985).

(5) A: Rover is scratching the door.

   B: Yes, he always *does so/does it* when he wants attention.

Miller (2013) analyzes the corpus data and suggests three preferred usage preferences (UP) associated with *do so*, and attempts a generalization. The preferred environments

suggested by Miller in connection with *do so* is as follows.

(6) a. UP1: Finite do so very strongly against occurrences of non-stative antecedents. (98% of cases according to Houser 2010)

   b. UP2: Finite do so very strongly with regard to the same state of affairs as its antecedent and hence the same subject as its antecedent. (98% of cases according to Miller 2011)

   c. UP3: Finite do so prefers to occur with a non-contrastive adjunct. (83% of cases according to Miller 2011)

All the previous analyses show that the semantic difference between these two types of VP anaphora is so subtle that it is very hard to precisely capture. Given that, this study provides another attempt to generalize the semantic and discourse contextual difference between them by closely reviewing the presented data and the properties suggested in the aforementioned works. Specifically, this study attempts to provide a general principle that can explain why such tendencies as above are observed. It will support Cornish's proposal that meaning of atelicity is favored by *do so* whereas telicity by *do it*. Additionally, it will be argued that, when superficially observed, the aspectual features of *do so* appear to be non-state as claimed by Culicover & Jackendoff (2005), but considering discourse contextual meaning, *do so* can be viewed as a state verb when it has a generic meaning.

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# 4차 산업혁명과 영어전공자의 미래: 대학 영문과의 발전방향 (광운대학교 영문과 사례)

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외국어 학습은 단순한 기능을 습득하는 것이 아니라 해당 언어 관련 문화의 총체를 학습하는 것으로 본다면, 영어는 영어와 함께 영미문화권의 방대한 문화적 콘텐츠에 대한 범위로 확대될 수 있다. 이렇게 범위를 넓혀 본다면 영어 전공자들이 해야 할 일은 축소가 아니라 오히려 확대될 일이다. 기존의 영미어문학 관련 지식의 습득과 활용에 대한 기초적 역량은 지속적으로 축적되어야 한다. 특히, 문화산업과 관련한 영미문화콘텐츠 전문 인력의 수요는 결코 줄어들지 않을 것으로 생각된다. 또한, 이러한 문화콘텐츠를 미래사회의 소통 수단으로 바꾸어 줄 전문 인력이 필요하다. 이를 위해서 공고한 영미문화콘텐츠에 대한 전문 식견을 가진 영어전공자들이 인공지능 개발자들과 함께 코딩의 협업의 과정에 참여하고, 기술적 도움을 받아 효과적인 데이터 구축에 참여할 수 있다면 영어전공자들에게는 새로운 영역으로의 진출이 가능하다. 본 장은 이러한 사회적 변화를 수용하고, 미래 사회를 대비하는 인재 육성을 위한 과감한 변신을 선택한 국내 한 영문과의 사례를 소개한다. 광운대학교 영어영문학과는 영어전공자의 미래 역할을 다시 설정하고, 이를 위해 학과의 교육적 리소스를 최대한 활용하는 범위 내에서 학과의 미래 비전과 미션, 교육목표, 인재상, 특성화 전략, 실행계획 등을 미래지향적으로 개편하게 되었다. 이러한 노력은 2016년도 국가적 교육사업인 '수도권대학특성화사업'(CK-II)에 우수 사업단으로 선정되기에 이르렀다. 시대가 요구하는 미래형 영어인재를 육성하는 교육프로그램(개인 창의성 기반 SHOBS형 인재 육성 사업단, "숍스사업단")을 운영하며 혁신적인 변화를 시도하는 바, SHOBS형 인재란 방대한 영어영문학 콘텐츠를 상징하는 영국의 대문호 William Shakespeare와 창의적 아이디어를 거대 산업으로 육성한 미국의 Steve Jobs의 이름을 합성한 신조어로서 영어영문학 콘텐츠를 산업의 자산으로 삼아 4차 산업혁명 시대를 선도할 수 있는 미래형 영어 인재를 의미한다. 본 장은 영어영문학 콘텐츠에 대한 공고한 지식을 다양한 미래 사회의 요구에 부응하도록 가공하고 제공함으로써 이윤을 창출할 수 있는 산업으로 시작하고 운영할 수 있는 인재를 양성하기 위한 하나의 교육 모델을 제안한다.

# L2 Acceptability Judgments on *Wh*-Island Sentences and Processing Difficulty

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The present study explores the effect of sentence processibility on Korean EFL learners' acceptability judgments. Recent findings in psycholinguistics and experimental syntax have shown that native speakers' judgments for island sentences are frequently affected by their processing costs, with reduced acceptability for sentences that require high processing costs. In order to see if acceptability judgments by L2 learners are likewise affected by processing factors, the current paper asked Korean adult EFL learners to rate English *wh*-island sentences in 4 conditions, which varied in terms of their expected processing complexity. The processing complexity was manipulated by two factors: (i) the properties of the fronted *wh*-phrase and (ii) the amount of the materials that intervene between the fronted *wh*-phrase and its gap in the embedded sentence. The fronted *wh*-phrase was either a bare *wh*-word (e.g., *what*) or a which-N sequence (e.g., *which book*); the intervening NPs were either pronouns (e.g., *he*) or referential noun phrases (e.g., *the boy*). Ninety-eight Korean university students in three proficiency groups participated in the acceptability judgment task. Twenty one native English speakers also participated in the experiment as a control group. The participants' acceptability ratings of the test sentences were entered into a two-way ANOVA. The analysis of the data confirmed that native English speakers' judgments are sensitive to the processing factors: they judged *wh*-island sentences with lower processing costs as more acceptable than those with higher processing costs. The same kind of sensitivity was not displayed by the Korean L2 participants. The learners, including high-proficiency learners, judged sentences with referential NPs as more acceptable than those with pronouns although the former type of sentences require higher processing costs. The findings suggest that L2 learners' judgment of sentence acceptability is affected more by the semantic clues and plausibility than by processing difficulty.

# 구문문법을 바탕으로 한 챗봇(chatbot) 플랫폼 기반 영어 말하기 도구의 설계 및 적용: 사역이동구문을 중심으로

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인공지능과 머신러닝, 그리고 딥러닝 기술이 발달함에 따라 그 효과가 영어교육에 미치는 영향도 점차 증가해 가고 있다. 특히 기계번역기술의 발전에 따른 '영어 학습 무용론'이나 '영어교사 무용론'과 같이 영어교육을 근본적으로 회의하는 주장도 점차 설득력을 얻어가고 있는 상황이다. 이러한 상황에서 인공지능과 머신러닝 관련 기술의 발전과 영어교육의 필요성, 그리고 미래 영어교육이 지향해야 하는 바를 검토하고, 이를 적극적으로 반영한 영어교육 교수-학습 방법론이 제시되어야 할 시대적 요구가 대두되고 있다. 본 연구는 이러한 시대적 요구에 부응하고, 한국영어교육이 당면한 과제중 하나인 '기본적 의사소통 능력'(Basic Communicative Competence; Yang, Kim, and Sung, 2015)을 신장시킬 수 있는 교수학습 방법론으로 인지언어학에 기반을 둔 문장단위 논항구조 구문문법(Argument Structure Construction Grammar; Goldberg, 1995)에 입각한 영어 말하기 챗봇을 제안하고자 한다.

한국인 영어 학습자들은 영어로 자신의 생각(proposition)을 표현하는데에 어려움을 겪는 문제를 가지고 있는데, 그 주요한 원인중 하나로 한국어와 영어의 유형론적 차이(typological variation; Talmy, 1995)를 들 수 있다. 구체적으로, 한국어는 상태변화를 나타냄에 있어서 영어와 달리 전치사나 불변화사와 같은 위성구(satellite phrase)를 활용하지 못하고 방법관련 동사(manner verb)와 장소이동 동사(change-of-location) 두개를 중첩시켜 표현하는 동사-프레임 언어(verb-framed language)이다. 반대로 영어는 이를 표현하기 위하여 전치사나 불변화사와 같은 위성구를 활용하는 위성-프레임 언어(satellite-framed language)이다. 이 두 언어사이의 유형론적 차이는 다음 예문 (1)과 (2)에 잘 드러나 있다.

(1) The man <u>sneezed</u> the tissue down the table.
(2) * 그 남자는 티슈를 테이블 아래로 재채기했다.
　　 그 남자는 <u>재채기해서(V1)</u> 티슈를 테이블 아래로 <u>떨어뜨렸다(V2)</u>.

예문 (1)에서 드러난 영어의 경우, 자동사로 활용되는 동사 sneeze가 구문틀(constructional template)에 융합(fuse)되어 단일절(monoclause) 사역이동구문으로 패키징(package) 될 수 있지만, 예문 (2)에서 보여지는 바와 같이 한국어의 경우 유형론적 차이로 인하여 단일절로 패키징 될 수 없고, 이에 동등한 의미가 표현되기 위해서는 방법을 나타내는 동사 하나(V1)와 장소변경을 나타내는 추가 동사(V2)가 사용되어야 한다. 지금까지의 논의에 따르면, 첫째, 이러한 유형론적 차이가 가장 잘 드러나 있는 '자동사가 사용되는 사역이동구문'의 경우(이하, 사역이동구문으로 표기) 해당 구문의 학습과 사용에 극단적인 어려움을 겪을 것이며, 둘째, 한국인 영어 학습자는 모국어의 영향으로 말미암아 영어 원어민이 모두 정문 처리하는 전치사나 불변화사를 활용하는 자동이동구문, 타동이동구문, 자동-타동

불변화사 구문형태를 비문처리할 가능성이 높을 것이라 예측할 수 있다.

　따라서 본 연구의 주된 목적은 구문문법의 언어적 원리에 입각하여 설계된 기초적인 수준의 영어 말하기 챗봇이 위의 논항구조 구문 중 특히 타동이동구문의 습득에 긍정적인 교수학습효과를 미치는지를 알아보는 데에 있다. 챗봇을 활용하면 한국인 영어학습자들이 반복적으로 생성하는 오류에 대하여 다양한 과업과 입력자료를 바탕으로 많은 연습기회를 제공하고 학습자의 오류에 대한 개별화된 피드백을 제공함으로써 해당 학습자들로 하여금 한국어와 다른 영어의 독특한 구문구조를 내재화(internalize)하는데에 도움을 줄 수 있다. 본 연구에서 생성된 챗봇은 페이스북 메신져를 프론트엔드로, 자연어처리 서버를 백엔드로 갖춘 초보적인 수준의 구조화된(structured) 챗봇이다. 24명의 한국인 초급 영어 학습자들이 3차시에 걸쳐 본 연구에 참여하였으며, 핸드폰의 TTS(Text to Speech) 기능을 활용하여 말하기 자료를 자동 전사하였다. 학습자의 언어는 말하기 과업과 패러프레이즈 과업을 통해 분석되었다. 말하기 과업의 경우, 구문과 관련된 오류를 기준으로 분석되었으며, 패러프레이즈 과업은 원어민 학습자들이 수용하는 표현에 대하여 한국인 영어 학습자들의 수용도가 어떻게 변화하는지를 바탕으로 분석되었다. 다음은 본 연구의 연구 질문이다.

질문 1. 챗봇을 활용한 교수-학습 처치는 초보 수준의 한국인 영어 학습자의 사역이동구문
　　　　 생성에 어떠한 영향을 미치는가?
질문 2. 챗봇을 활용한 교수-학습 처치는 초보 수준의 한국인 영어 학습자는 한국어와 유형
　　　　 론적 차이를 보이는 영어의 사역이동구문 표현의 수용에 어떠한 영향을 미치는가?

　본 연구의 결과는 다음과 같다: 첫째, 챗봇을 활용한 교수-학습 처치는 초보 수준의 한국인 영어 학습자의 사역이동구문 생성에 긍정적인 영향을 미친다. 사전-사후실험을 비교하였을 때, 전체적으로 사역이동구문의 문장 완성률이 큰 폭으로 증가하였다. 구체적으로, 주어-동사-목적어-전치사구 논항을 단일 문장으로 패키징 하는 능력이 통계적으로 유의미하게 증가하였다. 둘째, 챗봇을 활용한 교수-학습 처치는 초보 수준의 한국인 영어 학습자의 사역이동구문 표현의 수용에 긍정적인 영향을 미친다. 사전 검사의 경우, 초보 수준의 한국인 영어 학습자는 사역이동구문 표현을 거의 수용하지 못하였지만, 사후 검사의 경우, 이들 학습자들은 해당 표현을 통계적으로 유의미한 범위내에서 수용하게 되었다.

　본 연구의 함의는 다음과 같다: 첫째, 본 연구는 언어학적 발견을 고려하여 이를 챗봇의 교수-학습 과정에 적용시킨 최초의 연구이다. 둘째, 본 연구를 통하여 챗봇을 활용하면 한국인 학습자들이 습득하는데에 어려움을 겪는 영어 구문 표현들을 습득 하는 데에 도움이 될 수 있음을 보였다. 셋째, 이러한 방식으로 학습자 코퍼스 데이터를 축적하면, 영어교육에 특화된 머신러닝-딥러닝 방식을 개발, 구현 하는 데에 미약하나마 기여할 수 있을 것이다.

　그럼에도 불구하고 본 연구에서는 더욱 고도화된 자연어처리 기법을 활용하지 못한 점, 적은 시수의 수업을 운용한 점, 학습자관리시스템과 연동시켜서 학습자에게 보다 종합적인 피드백을 제공하지 못한 점, 지연사후 시험을 적용하지 못한 점, 마지막으로 해당 학습효과가 여타구문구조로 전이될 수 있는지를 규명하지 못한 점을 한계로 들 수 있으며, 이를 추후 연구과제로 남겨 두고자 한다.

# Corpus Analysis of Verbs in English Drama
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이 연구의 코퍼스 분석 대상은 영국에서 초연 또는 발매된 극이고, 연구의 목적은 다음 세 가지이다. 첫 번째는 시대에 따라서 극에 쓰인 동사는 크게 변했는지를 파악하는 것이고, 두 번째는 3인칭 단수 현재형 굴절어미 -th와 단수 현재형 굴절어미 -st의 사용빈도가 감소하기 시작한 시기가 언제인지를 파악하는 것이며, 세 번째는 축약된 동사는 언제부터 쓰이기 시작했는가를 파악하는 것이다. 여기서 '축약된 동사'란 ① 동사의 부정형 (예: isn't, won't, don't), ② 구어체에서 쓰이는 축약된 조동사 및 be 동사(예: 've, 're, 'd(<would)), ③ 구어체에서 '-g'를 생략한 현재진행형 동사 (예: doin', makin', goin')를 이르는 말이다. 이 연구는 분석 대상 문헌들을 프로젝트 구텐베르크에서 수집하여, 총 9 시대 (한 시대는 50년이다.) 63 작품 1,331,636 단어로 이루어진 코퍼스를 구축했다. 위 연구 질문들에 가장 정확한 결과를 낼 수 있는 방법은 작품들에서 쓰인 모든 동사를 파악하는 것이겠지만, 그것은 방대한 시간이 걸리는 일이므로, AntConc 3.5.6.의 단어목록 (Word List)기능을 사용하여 한 시기당 가장 많이 쓰인 동사를 상위 25위까지만 수집했다. 여기서 말하는 '동사'는 그 동사의 기본형과 굴절된 형태를 모두 이르는 동사군(群)을 이르는 말이다. 도출해 낸 시대별 상위 25위 단어들을 분석한 결과, 우리는 세 연구 질문에 다음과 같은 결론을 내었다. 첫째, 시대별로 볼 때 극에 쓰인 동사는 크게 변하지 않았다. may와 must의 쓰임이 낮아졌을 뿐 주목할 만한 변화나 동사는 없었고, 사용빈도 상위 25개 동사 가운데 16개 동사가 모든 시기에서 25위권을 유지했다. 둘째, 굴절어미 -th와 -st는 이번 코퍼스 분석에 있어서 세 번째 시기인 1600 - 1650년대부터 쓰임이 감소되었다. 그 시기에 들어서 굴절어미 -s가 굴절어미 -th를 대체하기 시작했다는 점, 그 시기를 기점으로 have, do, be, shall 동사에서 굴절어미 -th와 -st가 급격하게 쓰이는 횟수가 줄어든 것이 그 이유이다. 셋째, 축약된 동사가 쓰이기 시작한 시기는 이번 코퍼스 분석에 있어서 두 번째 시기인 1550 - 1559 년도로 추정된다. 단, 축약된 동사가 다양하게 사용되기 시작한 시기는 네 번째 시대인 1650 - 1699 년도로 추정된다.

# Processing Information Structure by Korean English L2ers: An ERP Study

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This paper examines ERP responses to violations of information structure (IS) in answers to wh-questions in Korean English speakers, where focus structure is incorrectly aligned in 'it'-clefts. Cowles, Kluender, Kutas, and Polinsky (2007) found two types of ERP response in answers to wh-questions. One is that all words in focused position showed a large positivity understood as characteristic of sentence-final elements, and in fact the sentence-final words of the sentences containing them did. They suggested that focused elements might trigger integration effects, like those in sentence-final position. The other is that inappropriately-focused referents showed a right negativity. They suggested that this N400-like effect was elicited by comprehending structurally-encoded focus cues and discourse-level restrictions.

To this aim the experimental materials for our ERP study consisted of 60 sets with two types of stimuli (congruent and incongruent), adopted from Cowles, et al. (2007). Each trial contains a set-up context with the introduction of three discourse participants, and then a wh-question consisting of one participant as an agent and two participants as an undergoer of an event, and a target sentence that was constructed as an it-cleft, with its pivot marked for focus with a congruent or incongruent participant, schematically represented below.

(1) set-up: Who did the queen silence with a word, the banker or the advisor?

(2) congruent target: It / was/ the banker/ that/ the queen/ silenced/.

(3) incongruent target: It /was/ the queen/ that/ silenced/ the banker/.

Twenty Korean English L2ers (13 males, mean age: 23.7, SD: 1.7) with a high level of English proficiency (mean score on TOEIC: 920.2, SD: 33.3, range: 850-980)  participated in this experiment. ERPs were measured at the critical phrase (a cleft pivot: 'the banker' or 'the queen') and all the following expressions (i.e. words/phrases) in a sentence. We found that, first, all the expressions in cleft-pivot focus position registered a large positivity. Likewise, the final expressions in the congruent condition recorded a positivity, but those in the incongruent condition didn't. Second, the expressions in cleft-pivot focus position in the incongruent relative to the congruent condition elicited N400 ($F(1,19)=7.28$, $p<0.05$) at right anterior regions at the 300-400 ms interval and widespread P600 ($F(1,19)=31.35$, $p<0.001$) at the 600-700 ms interal, namely, a bi-phasic RAN-P600. The word immediately after the pivot (e.g., 'that') in the incongruent relative to the congruent condition elicited an ELAN ($F(1,19)=9.34$, $p<0.01$) at 100-200 ms interval, and the sentence-final expressions in the incongruent relative to the congruent condition evoked a sustained negativity with marginal effects at the 300-500ms interval.

We take the results in this experiment to indicate that the N400 evoked at the cleft pivot in the incongruent condition reflects a violation of information structure called for by the congruence between the preceding wh-question and its answer in a given context, and the P600 at the same position is a signature of syntactic integration difficulty due to the misfit of a non-focused constituent in a syntactic position reserved for focused expressions. At the same time, we suggest that the sustained negativity at the sentence-final elements in the incongruent condition is a neural correlate of increased syntactic complexity owing to the IS-wise mis-alignment of syntactic constituents.