

# A Corpus-based Analysis of Lecturing Language in Face-to-face Courses and MOOCs

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# Research Background

- Research motivation
  - Massive Open Online Courses or MOOCs (Hew & Cheung, 2014; Margaryan et al., 2017)
  - (continued) Domain analysis for an English language proficiency test for academic purposes
- Importance of this study
  - Test development and validation (Cushing, 2017)
  - Material development for English for academic purposes (EAP) courses (Flowerdew, 2013)



# Research Background – Lecturing Language

- Lecturing language as a genre
  - Similar terms: Teacher talk, Classroom discourse, **Instructional discourse**
  - Important roles of lecturing language
  - Features of lecturing language
    - Informational & interactive language (Biber, 2006)
    - Online production (time constraints) vs. Prepared scripts (Biber et al., 2002)
    - Oral-literate continuum (Biber 2006; Csomay, 2006)

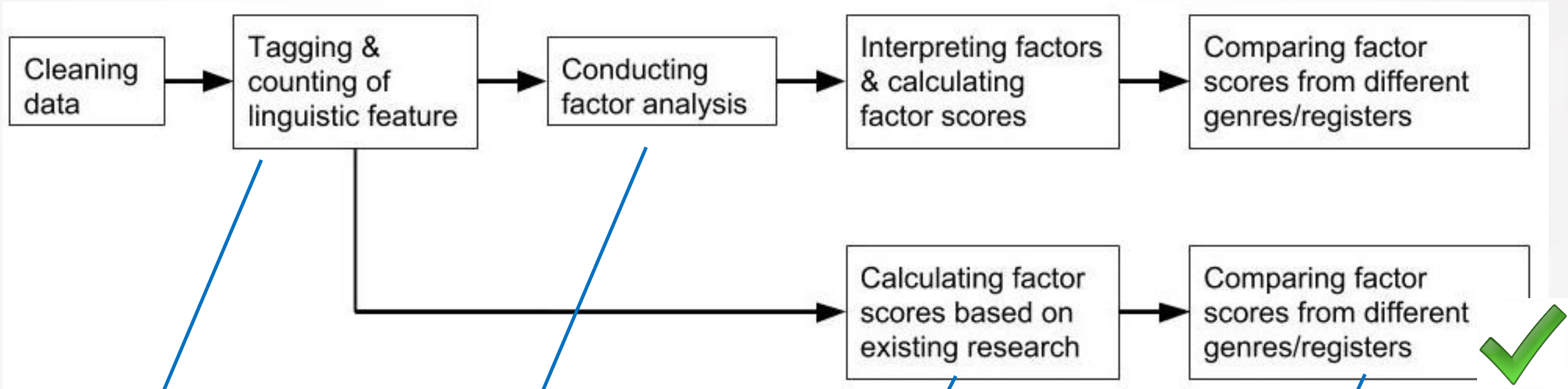
# Research Background – Lecturing Language

- Situational factors and lecturing language
  - Class size (Lee, 2009)
  - Level of education (Barbieri, 2015)
  - Instructors' first language (Fung & Carter 2007)
  - **Delivery mode (face-to-face courses and online courses) \***

# Research Background – Analytical Approaches

- Corpus-based analyses
  - Individual linguistic features
    - Lexical bundles (Csomay, 2012),
    - Discourse markers (Moreno et al., 2006)
  - **Multidimensional analysis or MDA**
    - Registerial variations (e.g., spoken vs. Written registers) (Biber, 1988)
    - World Englishes (Xiao, 2009)

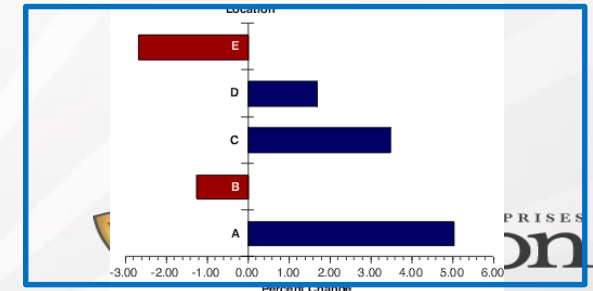
# Multidimensional Analysis (MDA)



Types of taggers:  
Biber's tagger,  
CLAWS POS tagger,  
**Nini's tagger**

Number of factors or  
dimension,  
Factor loading for  
individual variables

Factor scores for each  
text on all factors



# Research Background – Analytical Approaches

- **Biber's (1988) 6-dimensions**
  - 67 linguistic features from Biber's tagger (mostly lexico-grammatical features)
  - Based on 481 spoken and written texts in 23 major register areas (e.g., academic prose, prepared speeches, conversations)
  - From the Lancaster-Oslo-Bergen Corpus and the Lond-Lund Corpus
- Applications of Biber's 6-dimensions
  - Registerial variations (e.g., spoken vs. Written registers) (Biber, 1988)
  - University registers (Biber et al., 2012)
  - Natural Conversations and TV shows (Al-Surmi, 2012)
  - Forensic linguistic analysis/authorship identification (Nini & Grant, 2013)
  - Teaching ESL students (Aguado-Jimenez et al., 2012)

# MDA – Biber's (1988) 6- Dimensions

Dimensions	Example features
<b>D1</b> Involved vs. Informational Production	+ private verbs, <i>that</i> -deletion, <i>do</i> -as pro-verb, 1 <sup>st</sup> & 2 <sup>nd</sup> personal prons. - type/token ratio, preposition, nouns, word length
<b>D2</b> Narrative vs. Non-narrative Concerns	+ past tense verbs, 3 <sup>rd</sup> person prons., perfect aspect verbs
<b>D3</b> Elaborated vs. Situation-dependent References	+ <i>WH</i> -relative clauses in object positions, nominalizations; - time adverbials, place adverbials, adverbs
<b>D4</b> Overt Expression of Persuasion	+ infinitives, prediction modals, suasive verbs, conditional subordination
<b>D5</b> Impersonal vs. Non-impersonal Style	+ conjuncts; agentless passives, past participial adverbial clauses
<b>D6</b> Online Informational Elaboration	+ <i>that</i> clauses as verb complements, demonstratives



# Research Design – The Corpora

- the Michigan Corpus of Academic Spoken English (MICASE)
  - Collected at the University of Michigan from 1997 to 2001
  - Total running words of 1.8 million (Simpson et al., 2002)
    - 152 academic speech samples in 15 categories such as lectures, colloquia, etc.
  - 28 highly or mostly monologic lectures
- The MOOC corpus
  - 28 course offered by universities in North America on Coursera
    - Transcripts available online
  - A variety of visuals used with no presence of audience

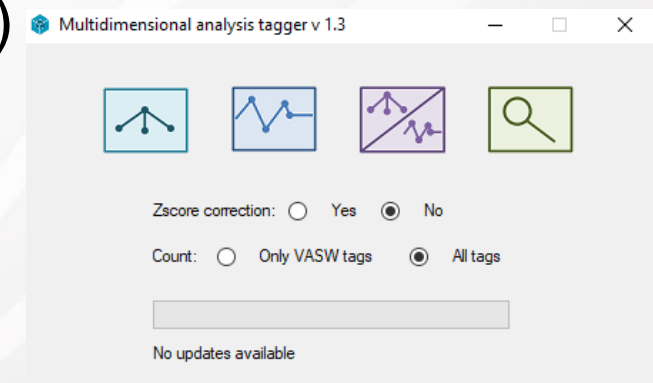
# Research Design – The Corpora

- Overview of the corpora

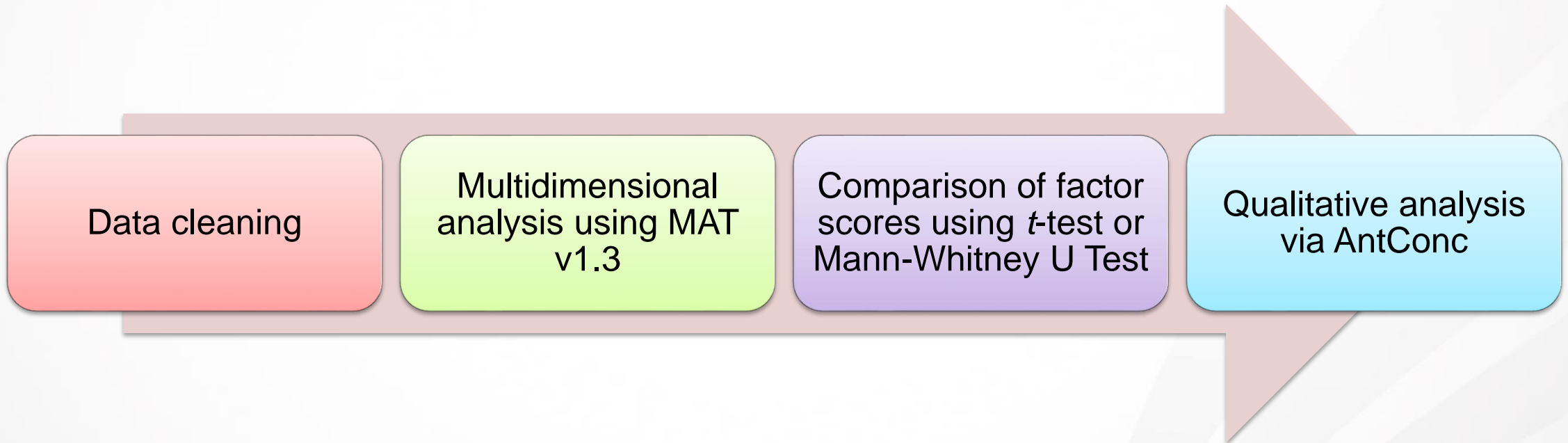
Corpus	# of scripts	Min/Max length	Mean length	S.D. of length	Total word count	Disciplines
MOOC	28	4,146/16,214	9,084.3	3,017.1	254,359	Soft sciences: 15 Hard sciences: 13
MICASE	28	3,798/14,571	9,092.5	2,798.8	254,590	Soft sciences: 18 Hard sciences: 10

# Research Design – Analytical Tool

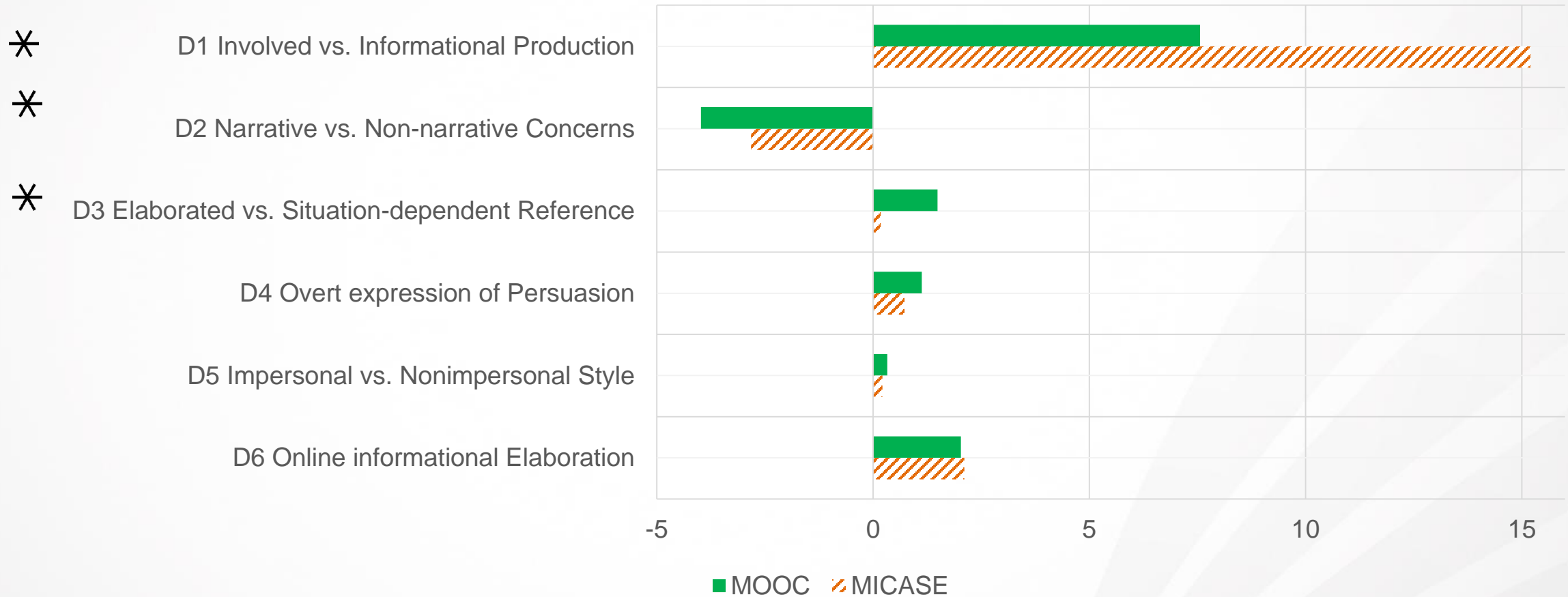
- Multidimensional analysis tagger (MAT) v 1.3 (Nini, 2015)
  - Tagged features
    - 67 lexico-grammatical features (e.g., past tense verbs, that clause as verb complements)
    - Reliability of the tool (Nini, 2015)
  - Biber's (1988) 6-dimensions
    - Biber et al. (2002); Csomay (2006); Reppen (2006)



# Research Design – Data analysis



# Results – Overview of the 6 Dimensions



# Results – D1 Involved vs. Informational Production

- MICASE

–this is ON your handout, and here's a, a caterpillar a pine looper, and you can **see** we have these fluctuations but it turns out they are, IN a a pattern. (LEL175JU112)

–so I wanted to address that since some OF you had experienced it. now we'll turn the lights back on and talk ABOUT loops. (LEL295JU035)

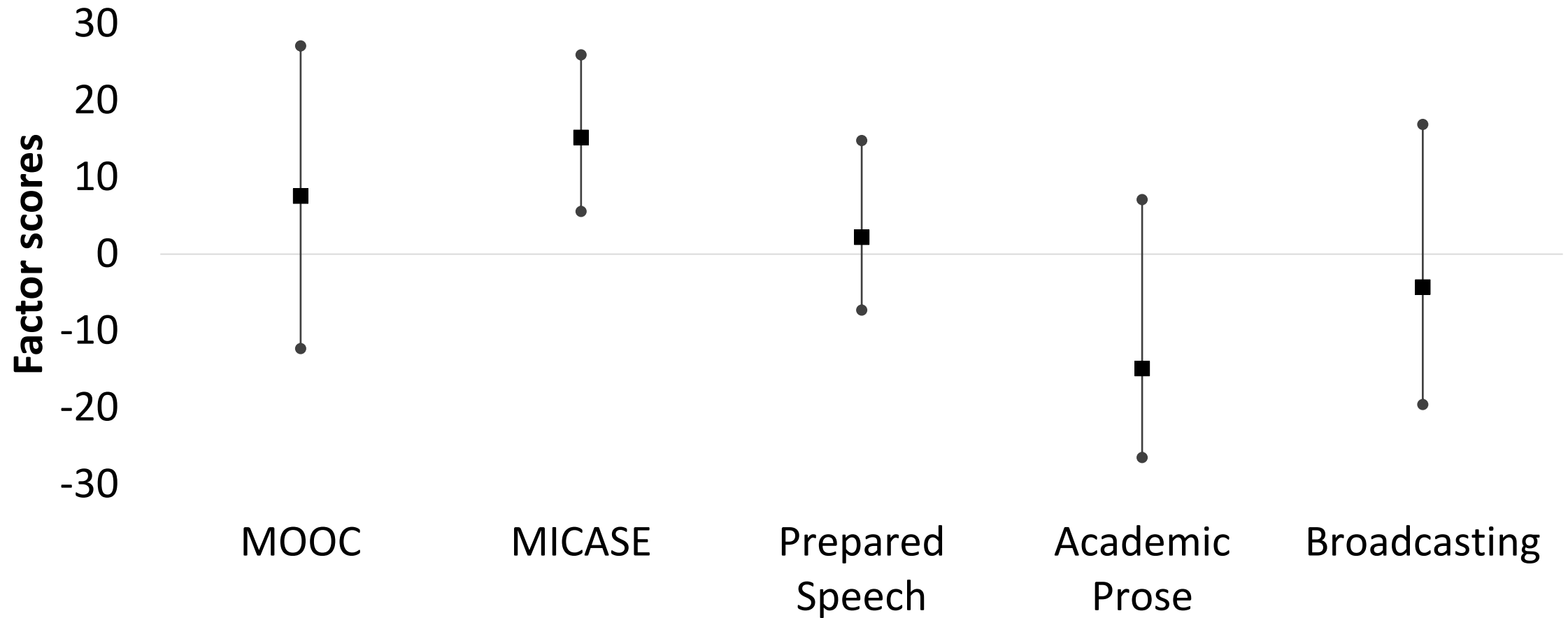
- MOOC

–Also, IN this expression, you might **recognize** this FROM the previous class, as describing a probability distribution. (BS01)

–Taking a cue FROM Maxine Greene and her notion that aesthetic experiences create openings FOR young people and others to **see** their lives FROM new perspective, what does this **mean** FOR society? (MU01)



## D1 Involved vs. Informational Production



# Results – D2 Narrative vs. Non-narrative Concerns

- MICASE

- *But Kampei because he DIED, because of the way that he DIED he MADE a great sacrifice for his lord he finally KILLED himself. (LEL140SU074)*

- *I WENT over that Armstrong Neuendorf and Brentar article in class where they LOOKED at entertainment versus news. (LEL220SU073).*

- MOOC

- *The Romans BELONGED to a group of people who HAD made settlements around the area of Rome at a number of sites. (RAA01)*





# Results – D3 Elaborated vs. Situation-dependent References

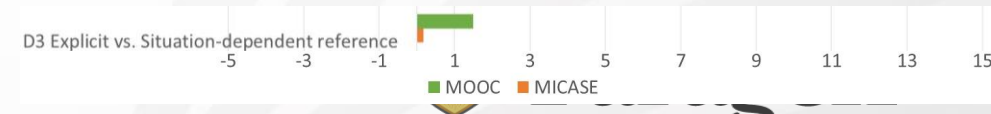
- MICASE

– *these had been torn down by Sulla seventeen years **earlier**, and and Caesar's fixed them back up. on one occasion when he goes after a political opponent in sixty-three B-C. (LEL215SU150)*

- MOOC

– *This goddess whose name, Calypso, comes from a verb meaning to hide. (GM01)*

– *We looked at several VARIATIONS that consider ASSUMPTIONS about future growth, and we came up with a number of formulas. (FFE01)*



# Results – D4 Overt Expression of Persuasion

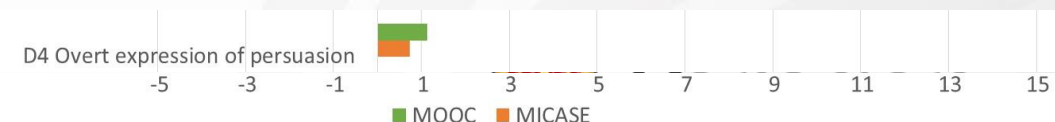
- MICASE

- *the idea behind an I-Q test is you've got somebody really smart, they should be going out and doing smart things right. (LES500SU102)*

- MOOC

- *Every measurement must have two things. It must have a number and a unit. (CHE01)*

- *This WILL ALSO BE true **if** an improvement in technology stimulates investment spending. (POM01)*



# Results – D5 Impersonal vs. Non-impersonal Style

- MICASE

- *and then it's **FURTHERMORE obscured** at the same time, it's **highlighted**, by, the placement of this light fixture which **ON THE ONE HAND** literally like bars your vision. (LEL320JU147)*

- MOOC

- *Based on the coupon divided by the discount or premium price. So let's suppose that coupon rate of three and a half percent is being **paid** when the bond price is \$700. (FFE01)*
  - *But they use randomization **NONETHELESS**, just in a different way and for a different purpose. (SPN01)*



# Results – D6 Online Informational Elaboration

- MICASE

*–therefore, THIS was the kind of context that Haeckel was writing in, in the late nineteenth century he had THOSE questions in mind and he was thinking about THOSE questions. (LEL115SU107)*

- MOOC

*–And THIS is the same type of bone that forms in the inside of the long bones of your arms and legs. (PEV01)*

*–And to understand their roles, let's look at, for example, THIS equation right there. So, THIS applies to any action of player 1. (GT1)*



# Results – Summary

- Impact of course delivery modes on instructional language
  - Differences in
    - Interactivity and information density (D1)
    - Degree of narrativeness (D2)
    - Explicitness in references (D3)
  - Similarities in
    - Use of persuasive language (D4)
    - Impersonal language (D5)
    - Elaboration of information (D6)

# Implications – EAP Teaching & Testing

- Modeling authentic lecturing language
  - What to look for in material development
  
  - What to teach in EAP courses

# Limitations and Future Studies

- The corpora data
  - Samples from MICASE as a reference corpus
    - levels of interactivity, single institution
  - Lack of multimodal elements in both corpora
- The analytical approach (MDA)
  - Biber's (1988) dimensions vs. new genre-specific dimensions

# Future Studies

- Future studies
  - New multidimensional analysis with larger corpora data (and a distinction of disciplines)
  - Analysis of specific linguistic features of lecturing language
  - Multimodal analysis of lecturing language
  - Learners' responses to the variations of lecturing language



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Thank You!

Questions & Comments?

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