



# New course

- Linguistics 195S *Neuroscience and Multilingualism* (NS, STS, R)

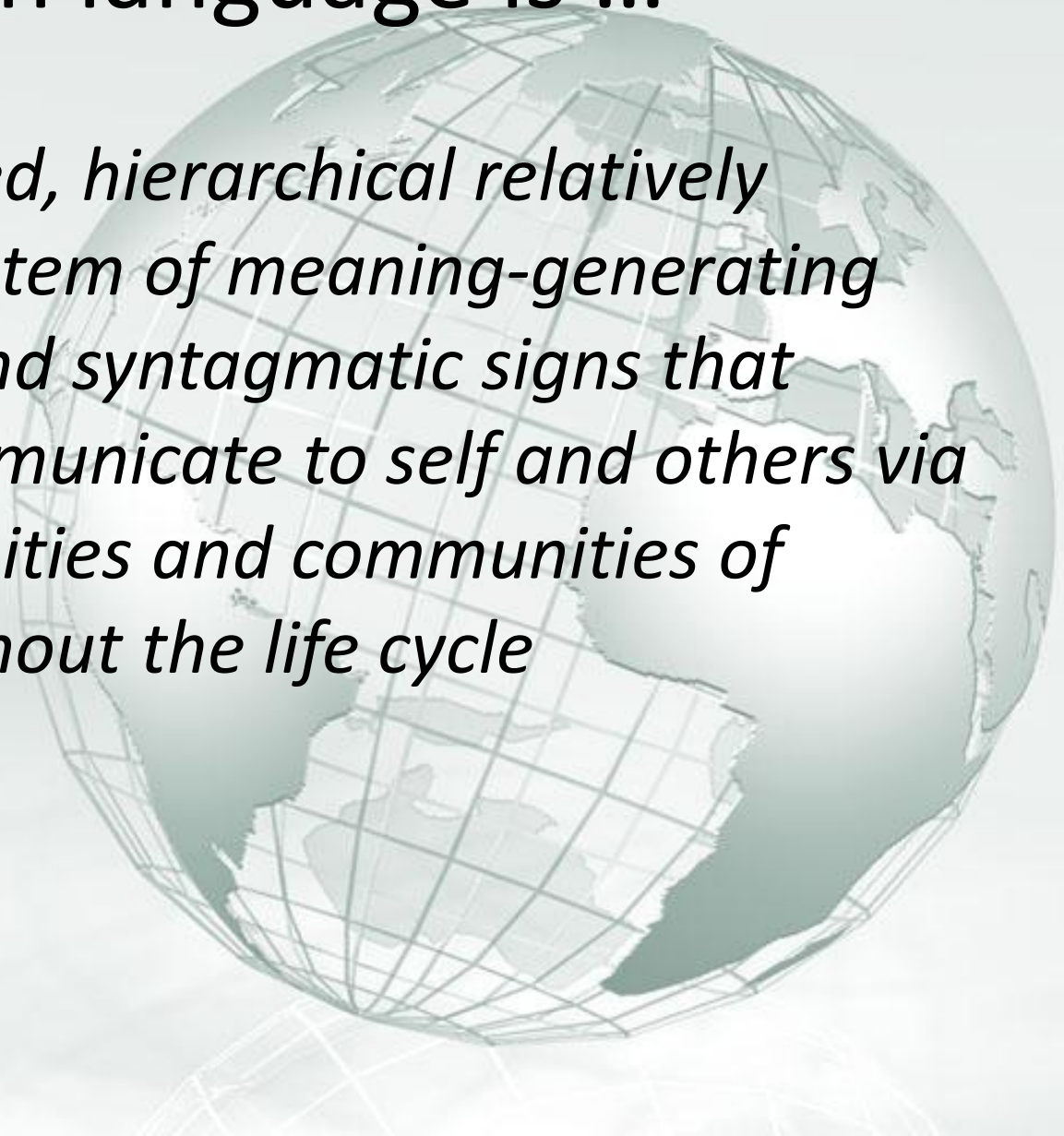
# Defining human language



Where language is NOT equal to  
*speech*

# Human language is ...

- *Dynamic, learned, hierarchical relatively autonomous system of meaning-generating paradigmatic and syntagmatic signs that signify and communicate to self and others via speech communities and communities of practice throughout the life cycle*



# Central controversies of the field of *Brain and Language*

Learned/innate

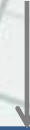


Degree of localization



Appropriate definitions of critical periods

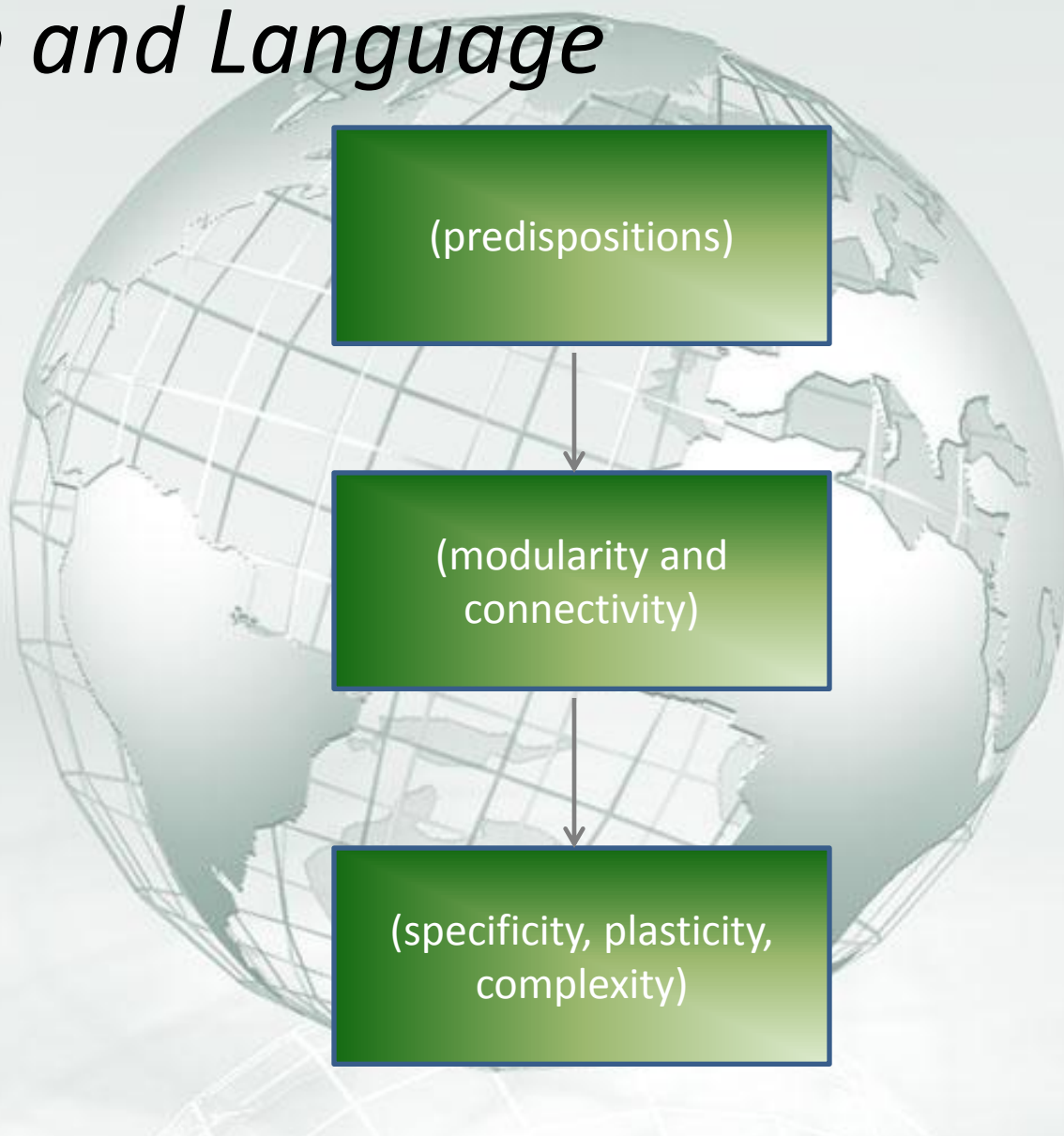
(predispositions)



(modularity and connectivity)



(specificity, plasticity, complexity)

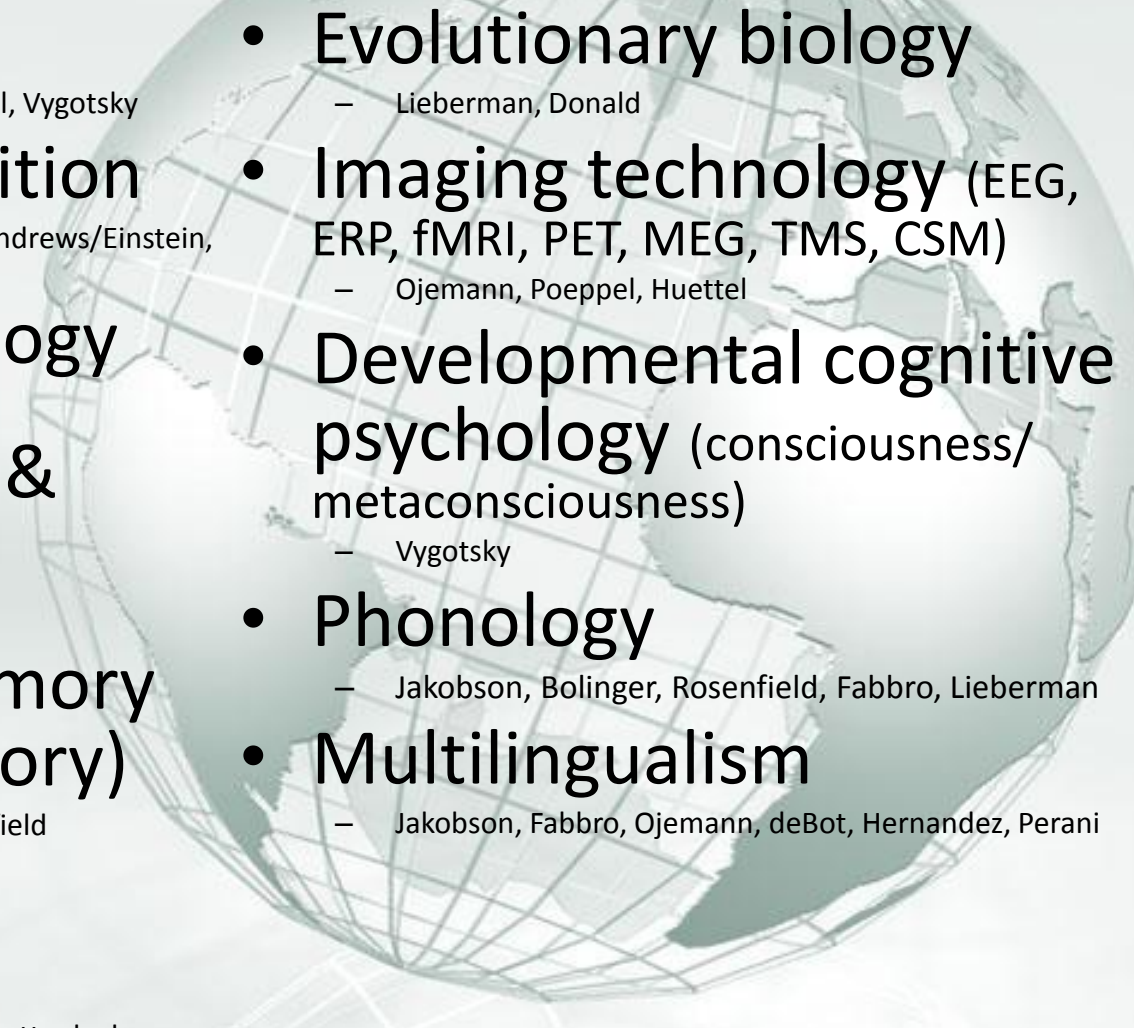


# Central disciplines of the field of *Brain and Language*

- **Neuroanatomy**
  - Ojemann, Dowling, Rose, Parnavelas, Huttenlocher
- **Neurophysiology**
  - Ojemann, Rose, Huttenlocher
- **Biochemistry**
  - Rose, Ojemann, Huttenlocher
- **Neurofunctionality**
  - Poeppel, Fabbro, Rosenfield
- **Neurolinguistics**
  - Lieberman, Poeppel, Fabbro, Andrews, Jakobson
- **Neuroimaging**
  - Huettel, Poeppel, Ojemann



# Central topics of the field of *Brain and Language*

- Linguistic theory
    - Jakobson, Bolinger, Lieberman, Poeppel, Vygotsky
  - Lesion-deficit tradition
    - Fabbro, Rosenfield, Damasio, Skotko/Andrews/Einstein, Sacks, Luria
  - Cultural anthropology
    - Donald
  - Language, culture & identity
    - Jakobson, Donald
  - Language and Memory (& collective memory)
    - Rose, Jakobson, Donald, Squire, Rosenfield
  - Developmental neurobiology
    - Dowling, Rose, Parnavelas, Ojemann, Huttenlocher
  - Evolutionary biology
    - Lieberman, Donald
  - Imaging technology (EEG, ERP, fMRI, PET, MEG, TMS, CSM)
    - Ojemann, Poeppel, Huettel
  - Developmental cognitive psychology (consciousness/metaconsciousness)
    - Vygotsky
  - Phonology
    - Jakobson, Bolinger, Rosenfield, Fabbro, Lieberman
  - Multilingualism
    - Jakobson, Fabbro, Ojemann, deBot, Hernandez, Perani
- 

# Result ...



- **New field of *Brain and Language***
  - Poeppel, Vygotsky, Jakobson, Andrews, Lieberman, de Bot, Bookheimer, Stowe, Price
- **Deepened collaboration with other Duke units**
  - Duke Institute for Brain Sciences
  - Brain Imaging & Analysis Center
  - Medical School Anatomy labs
  - Joint research projects (behavioral and imaging)