Today's topic:

- **Presentation and discussion: Orthographic learning and reading difficulty**

Background:

- Wang, Marinus, Nickels, & Castles (2014), "Tracking orthographic learning…"

0. Course info and announcements

- **Group 3:** Remember to fill out the **self and peer evaluation form** by **11:59pm** on **F Nov 1**
  (GDoc form; see link via Canvas "Assignments")

- **Group 4**: Article presentation coming up
  - Combined slides due **Tu Nov 5, 2:30pm**
  - Self/peer feedback due **W Nov 6, 11:59pm**

0. Key points today

- Group 3 presentation
- Follow-up discussion on the article
- Models and model-building in scientific research

1. Article presentatfion

- **Group 3 article presentation**

  Wang, Hua-Chen, Eva Marinus, Lyndsey Nickels, and Anne Castles. 2014. Tracking orthographic learning in children with different profiles of reading difficulty. *Frontiers in Human Neuroscience* 8: article 468, 1-14.

  - Article link (UNC Libraries)

2. Discussion: Wang et al. (2014)

- Any additional comments or questions?

2. Discussion: Wang et al. (2014)

- Types of results in this article
  - Group comparisons
  - Relationships between predictors and outcomes (correlations, regressions)

3. Meta-discussion: On article presentations

- Now that we have seen three presentations…

  Does anyone have any suggestions or ideas for the **presenters** or the **audience** to consider, going forward?

4. Model-building in scientific research

- In scientific investigation, what is a **model**?
  - Can you think of any examples of models from various areas of science?

4. Model-building in scientific research

- A model is an **abstract explanatory device** designed to **account for data**
  - ‘Abstract’ = exists in the minds of the explainers
  - Data = facts that we observe about the world

- What does having a model allow us to do?

4. Model-building in scientific research

- A model is an **abstract explanatory device** designed to **account for data**
- What does having a model allow us to do?
  - **Describe** what we observe
  - **Predict** what else should happen
  - (Attempt to) **explain** why phenomena occur
- If we can get our model to be a **good match** with how the world works, we conclude that properties of the world are like properties of our model
  - We check this by **testing hypotheses**

4. Model-building in scientific research

- When we propose a model, what are some of the characteristics we have to give it?
  - We propose **entities** that exist in the model
  - We propose ways in which those entities **behave** or **interact**
  - We **carefully define** those elements or entities and their relations, so that it is clear what the model allows, or requires, them to do

4. Model-building in scientific research

- Testing the **“self-teaching” model** of orthographic learning against two groups of poor readers
  - How did this research question relate to the structure of the experiments?

4. Model-building in scientific research

- Testing the **“self-teaching” model** of orthographic learning against two groups of poor readers
  - The model:
    - Phono. decoding → orthographic learning
    - Role of “orthographic processing?
  - Types of poor readers:
    - **Surface** group (normal performance in phonological decoding)
    - **Phonological** group (below-normal performance in phonological decoding)

4. Model-building in scientific research

- What was the Coltheart et al. (1993, 2001) Dual-Route Model originally proposed in order to describe/predict/explain?
- How do Wang et al. (2014) test further predictions of this model?
- Do Wang et al.'s (2014) results help to…
  - confirm vs. find problems for the model?
  - describe/predict/explain additional phenomena?

4. Model-building in scientific research

- Do the components of the Dual-Route Model of reading aloud predict:
  a) different skill profiles for phonological vs. surface dyslexics?
  b) orthographic learning?

- letter analysis
- phonemic buffer
- semantics
- letter-sound conversion
- orthographic lexicon
- phonological lexicon

5. For next time

- **Group 3**: Article presentation
  - Combined slides due **Th Oct 31, 2:30pm**
  - Self/peer feedback due **F Nov 1, 11:59pm**

- Everyone else:
  - Support your classmates by coming prepared for the discussion they will lead!
  - Do your best to **read** and **understand**:
    - Measurable RQs
    - Experiment design
    - Results and discussion