Today's topic:

- **Preparing for presentations**
- **Phonological information in adult silent reading**

Background:

- Rayner, Sereno, Lesch, & Pollatsek (1995), "Phono. codes are automatically activated…"

0. Today's key points

*** For today, please sit with your article group ***

- Check-in: Roles and guidelines for presentations
- Research article discussion: Rayner et al. (1995)
  - Role of phonological code in adult silent reading?
- Examples of preparation and presentation content for research article discussions

1. Article presentations

- Any questions about **roles** for group presentations?
- A **note** about roles (1)/(3) and (2)/(4)
  - Some articles have multiple experiments
  - Other articles have one large set of results, but use them to answer multiple research questions
  - Please divide the “design” and “results” roles in a way that works for your article

1. Article presentations

- **Article presentation weeks** have this structure:
  - Pre-presentation preparation on **Th**
  - Presentation + follow-up discussion on **Tu**

- Today's discussion will demo some of the points to address in preparation and presentations

2. Background and key concepts

Thinking about article presentations

- On each preparation day (before a presentation), we will have class / group discussion on points like:
  - Important **background concepts** behind the research questions or experiment methods
  - The **big-picture research questions** — identifying and motivating them
  - The **statistical analysis** used in the article, and what the statistical results would mean

2. Background and key concepts

Here is some content for a preparation day

- When we looked at visual text processing, we ended on this question:
  How does seeing a written word activate the appropriate information in memory?
  - Via **sound codes** (phonemes, syllables)?
  - Via **orthographic codes** (letter categories)?
- Today's article addresses this question
  - **Rayner, Sereno, Lesch, & Pollatsek (1995)**, "Phonological codes are automatically activated during reading" [full citation] [article link (UNC)]

2. Background and key concepts

- Review: Why are researchers interested in **duration of fixation** on words during reading?
  - Fixation duration measures …

- What are some **factors** that are known to affect fixation duration on a word?
  - From Rayner et al (2012) chapter on eye movement:

2. Background and key concepts

- Review: Why are researchers interested in **duration of fixation** on words during reading?
  - Fixation duration measures **processing time**

- What are some **factors** that are known to affect fixation duration on a word?
  - From Rayner et al (2012) chapter on eye movement:
    - The **frequency** of the word
    - Letter shape info from **parafoveal preview**

2. Background and key concepts

- What is the structure of a **priming study**?
  - **prime** —
  - **target** —
- A **priming effect** is when …

  - If there is a priming effect, it is **evidence** that …

2. Background and key concepts

- What is the structure of a **priming study**?
  - **prime** — the "clue"
  - **target** — what participants must respond to
- A **priming effect** is when **response time** to the target is affected by priming
  - If there is a priming effect, it is **evidence** that the prime **activates** the target in memory
    - Activation can be *positive* (helps) or *negative* (interferes)
    - Different kinds of priming can facilitate or interfere with retrieving the target from memory
    - We will be looking at positive (helpful) activation

2. Background and key concepts

- Here is a short video that explains **priming** in psychology experiments
  - “Priming”, by Rebekah Bainbridge (YouTube) [link]

2. Background and key concepts

- What would a **priming effect** look like (numerically) in an **eye-tracking study**?

3. Research questions

Content for the group presentation

Group discussion

- What **measurable research questions** were addressed by Rayner et al. (1995)?
  - Make sure you give the measurable research questions in a **quantitative** form: "Is *A* larger than *B*? Does *Y* increase when *X* increases?"
  - *Hint:* You can check for a **hypothesis** or **prediction** stated by the authors if the measurable RQs are hard to figure out

3. Research questions

Content for the preparation day discussion

Group discussion

- What is (are) the **big-picture research question(s)** addressed by the article?
  - What prior findings or background information motivate these?
  - How do the measurable RQs **relate** to the big-picture RQ?

4. Experiment design

Moving from preparation day to presentation day:

Group discussion

- What were the **conditions** in the experiment?
  - Reminder: These should follow from the measurable research questions
- What was the **methodology**?
  - **Participants** and **task**?
  - **Materials**?
    - Were there filler/distractor items?

4. Experiment design

- What was shown in the CWL before the boundary was crossed?
  - Why was this important?

4. Experiment design

When describing experiment design in the presentation

- **Show examples** of aspects like experiment conditions, experiment stimuli, tasks — whatever is relevant to **communicate** key aspects of the design
  - What are some things that would be useful to show for this article?

4. Experiment design

When describing experiment design in the presentation

- **Show examples** of aspects like experiment conditions, experiment stimuli, tasks — whatever is relevant to **communicate** key aspects of the design
  - What are some things that would be useful to show for this article?
    - The conditions (3 dimensions!)
    - An example sequence: random string, prime, target in CWL within sentence (see Appendix for actual stimuli)

4. Experiment design

- This article only has **one experiment**
  - What would be a useful way to split the discussion between **two presenters** for design and results?

5. Statistical analysis

Preparation day discussion — Statistical analysis

- Statistical analysis method used in this paper:
  - **ANOVA**
    - **main effect**
    - **interaction**

5. Statistical analysis

Preparation day discussion — Statistical analysis

- Statistical analysis method used in this paper:
  - **ANOVA** — are means in groups with multiple crossed factors same/different?
    - **main effect:** this predictor matters when the categories of the other predictor are combined
    - **interaction:** the effect of one predictor differs based on the value of the other
  - Here is an example: "Understanding Interaction Effects in Statistics", by Jim Frost

6. Results and data graphics

- Does this article have any **data graphics**?

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- Does this article have any **data graphics**?
  - No — a data **table** (organized numbers) is not the same thing as a data **graphic** (graph, plot, diagram that represents the numbers)
- What are some tips for making a data graphic from a data table?

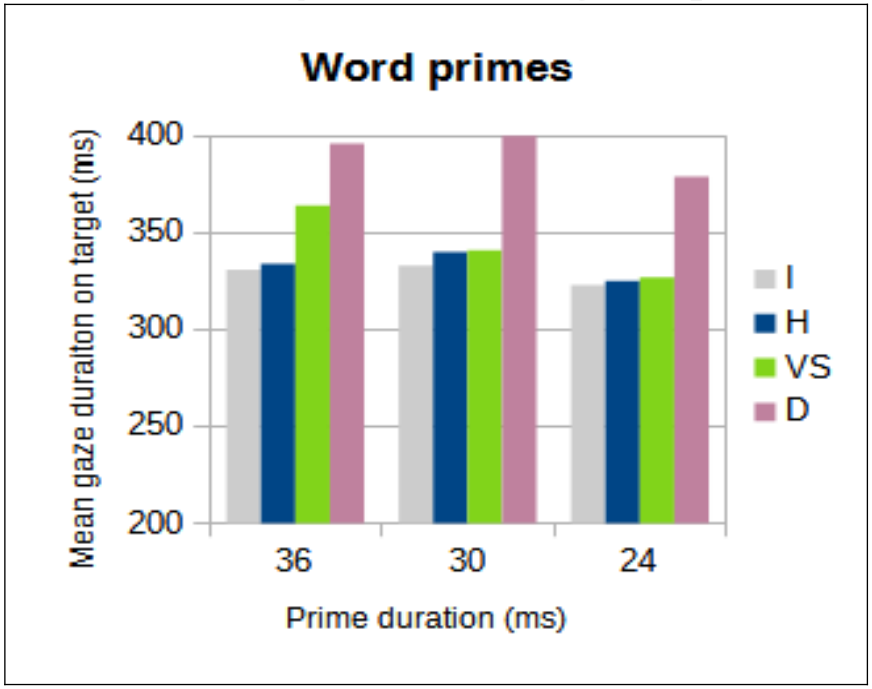
6. Results and data graphics

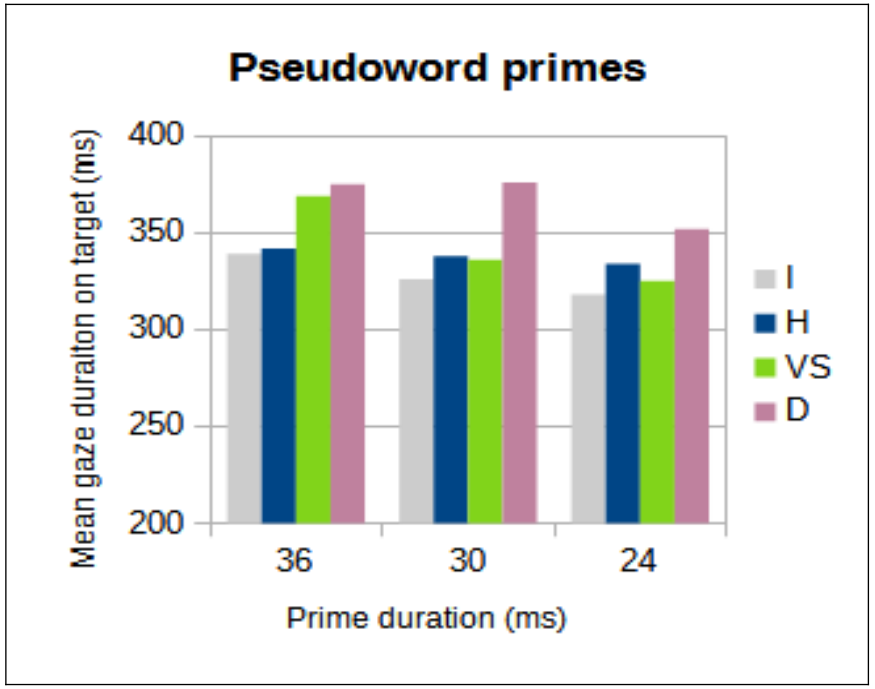
Some tips for making data graphics

- What information from the data table **answers the research question** you want to address?
  - Set up your data graphic to focus on this
- What **type** of data graphic is best?
  - When might we use a **bar graph**? A **scatterplot**? Other types of graphics?
  - Refer to the Kaplan (2012) Appendix reading for some examples
- Keep the graphic **visually simple** and **informative**

6. Results and data graphics

- Example **bar graphs** for data from the article

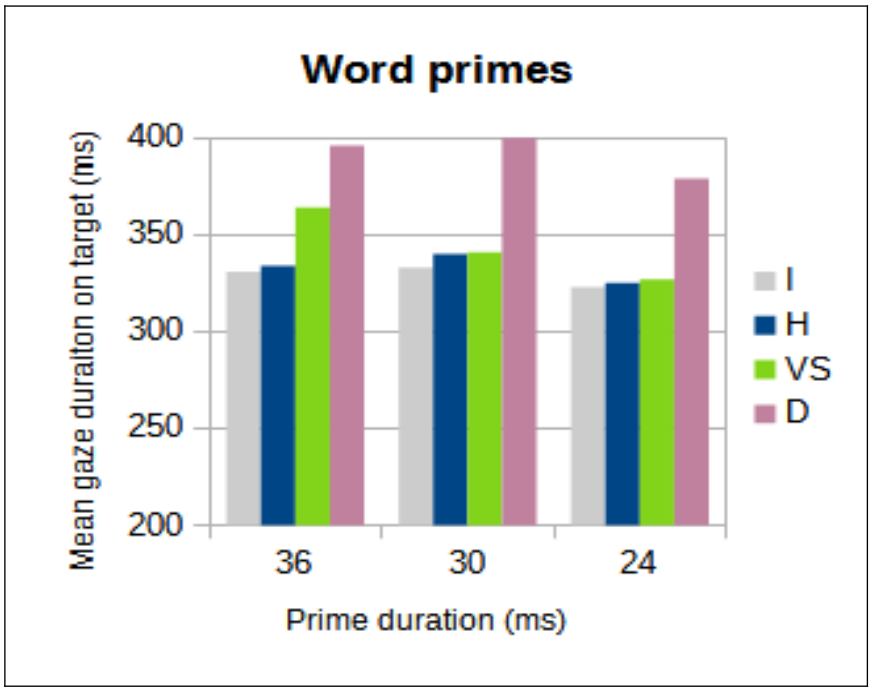


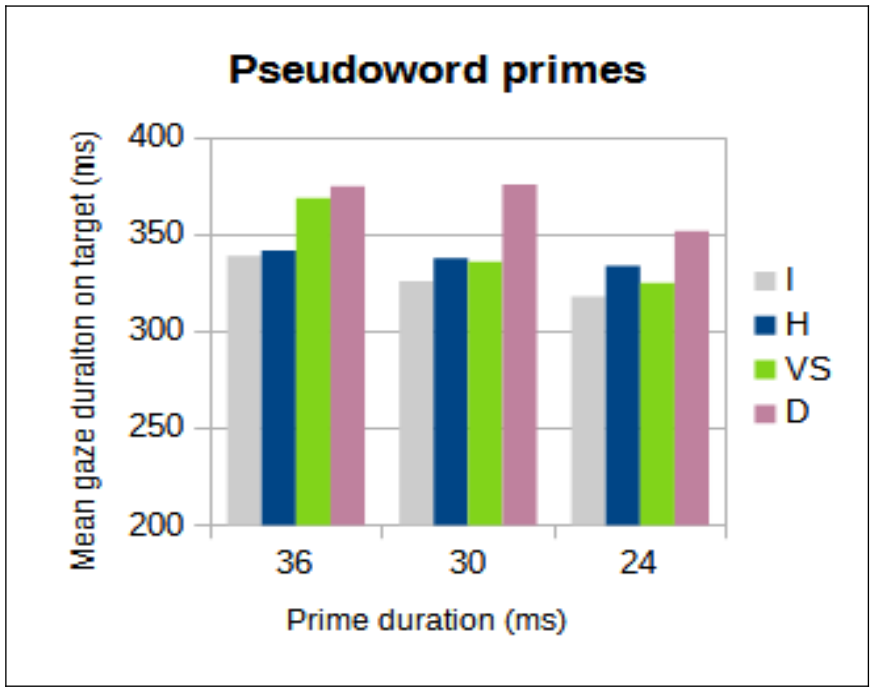


  - These graphics show “modified” durations — why might this be a reasonable choice?

- Which differences between conditions were **significant**?

6. Results and data graphics





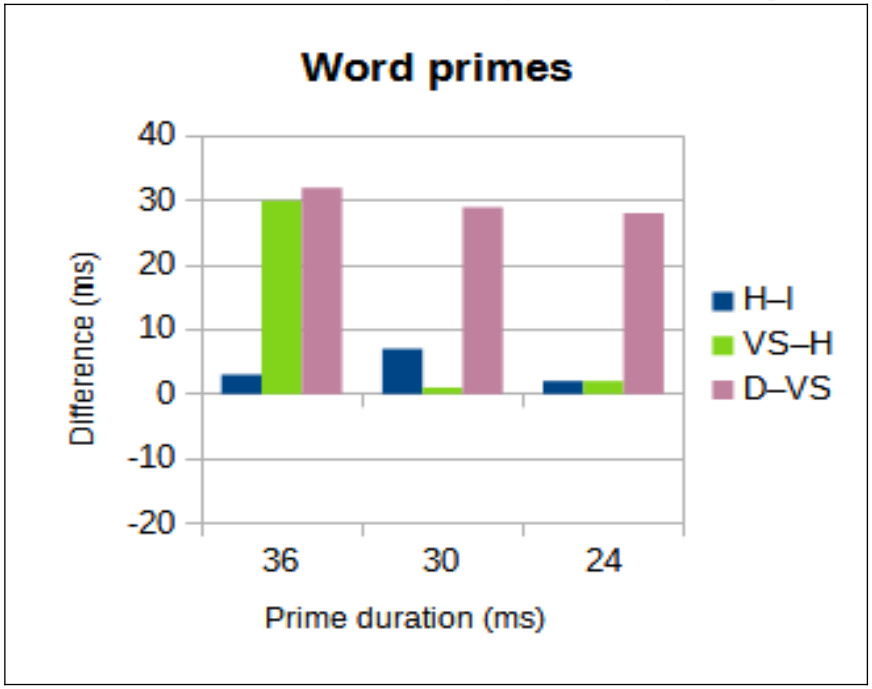
- Which differences were **significant**?
  - Main effect: prime duration, type
  - Interaction: prime duration × type (by subjects)
  - Prime lexicality (word/pseudo) never mattered
  - See text for crucial comparisons of **H** and **VS**

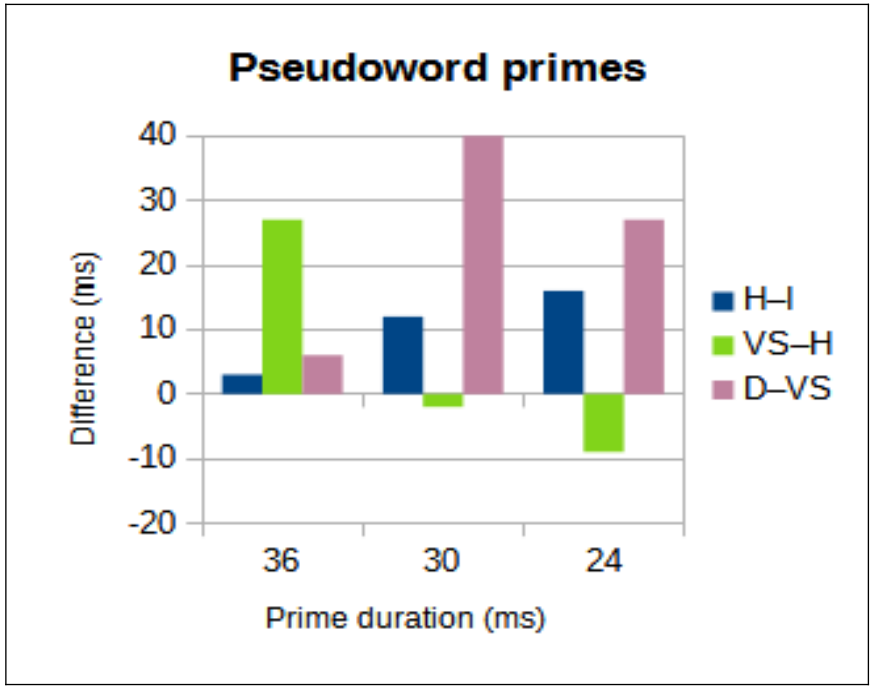
6. Results and data graphics

- When presenting a data graphic:
  - **Parse** — Explain what the axes, categories, symbols, etc. stand for
    - Relate this to the measurable RQs
  - **Interpret** — Tell the audience what pattern to notice
    - Is something increasing/decreasing? Are certain categories similar/different?

6. Results and data graphics

- Another way to graph results from this article





(graphics show “modified” durations)

- **Parse**: What are the axes and categories?
- **Interpret**: What is important to see here?

7. Discussion / conclusions / implications

- How do the results relate to…
  - the measurable research questions?
  - the big-picture research questions?

7. Discussion / conclusions / implications

Some additional points for discussion

- What do the authors argue that this study shows about a possible role for phonological information?
  - Why is the comparison between **word** vs. **pseudoword** homophones important?
- Are you convinced by the authors' claims?
- Other questions/comments? Is there anything that you would like to see in a follow-up study?

8. More tips for article presentations

Citations

- What should be included for **citations** in your presentation slides?
  - This is something of a special case: All information being presented is from the same article (except for the group's commentary)
- How do we **refer to** the authors (or the article)?

8. More tips for article presentations

- What should be included for **citations** in your presentation slides?
  - Citation at the start: What article are you discussing?
  - Page # citation for any definitions, stimuli, graphics, etc., taken from the article
  - Bibliographic citation as final slide

- How do we **refer to** the authors (or the article)?
  - Rayner, Sereno, Lesch, & Pollatsek (1995)
  - Rayner et al. (1995) [when >2 authors]

8. More tips for article presentations

Interactive activities

- Note that it's fine to have the class discuss/figure out some of the core content of the presentation as part of a discussion
  - Just be sure to summarize/clarify the core content after the discussion is over

9. For next time

- We will do the pre-presentation preparation discussion for the **Group 1** article
  - Use the handout on preparing for article discussions to help you get ready for discussion

- The first assignment for the individual component of the article interpretation/presentation assignment is due **Th Oct 3** on Canvas
  - Groups will need to decide on roles!