
Writing
Research Manuscripts

Overall

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How does scholarly writing differ from other forms of writing?

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Clarity & Simplicity

"The main objective of scholarly writing is clear communication, which can be achieved by presenting ideas in an orderly and concise manner" (APA Manual, 2019, p. 183)

Our ideas are complicated,
so our writing can't be.

- Simple & plain language
- Succinct & careful choice of words
- Organize clearly & explicitly
  - Sentences, paragraphs, sections
  - And ideas

Disciplined Thought

- Present ideas precisely
  - Accurately conditionalize
- Support every statement
- Remain objective
  - Be your own worst critic
- Give others credit,
  - But show the value you add

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Engaging & Accessible

- Active voice
  - For you and those you cite
  - Yes, first person! (APA Manual, 2019, pp. 118 – 119)
- Enduring presence
  - Assume your readers are intelligent but naïve
  - Avoid jargon (& trendy expressions)
    - Overuse can lead to fewer citations
  - Also define/explain all but the most common terms
  - *Please*, limit acronyms (aka WTH, TMA!)

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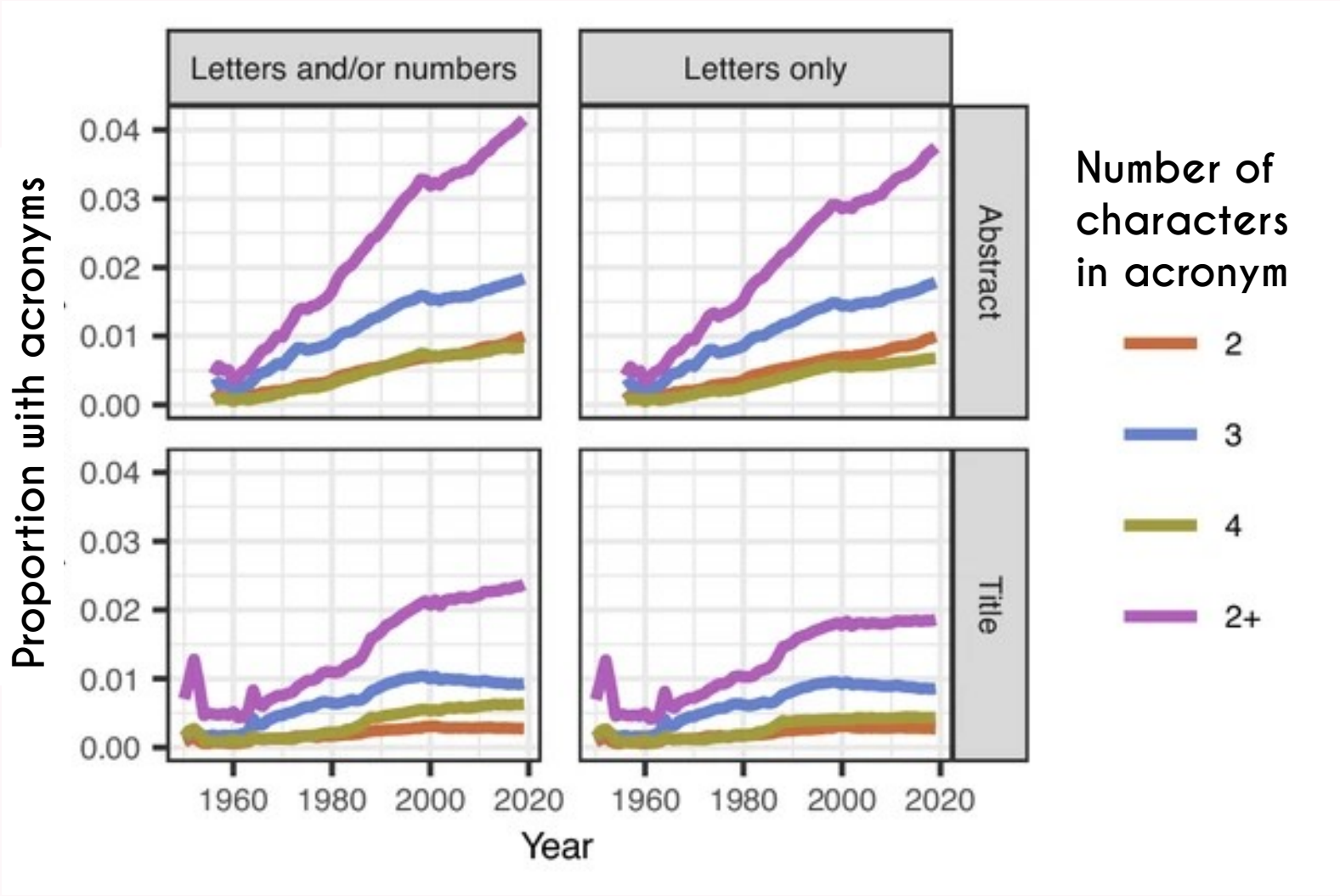
Additional Points

- Acronyms
  - Each new acronym is a word the reader must learn:

    "During Hurricane Joe's RI, the VWS and RHUM near the storm's center were not supportive of intensification. Instead, the RI was related to high TCHP, CBs, and UTWAA. The high SST near CH in the NAO limited the SST cooling by the hurricane, and thus enhanced the ASHE, triggering CBs."
  - In addition to keeping track of your design, theory, constructs, etc.



Mean proportions of acronyms in titles and abstracts over time (Barnett & Doubleday, 2020)

- Although acronyms are hard to read, well-learned words are not:

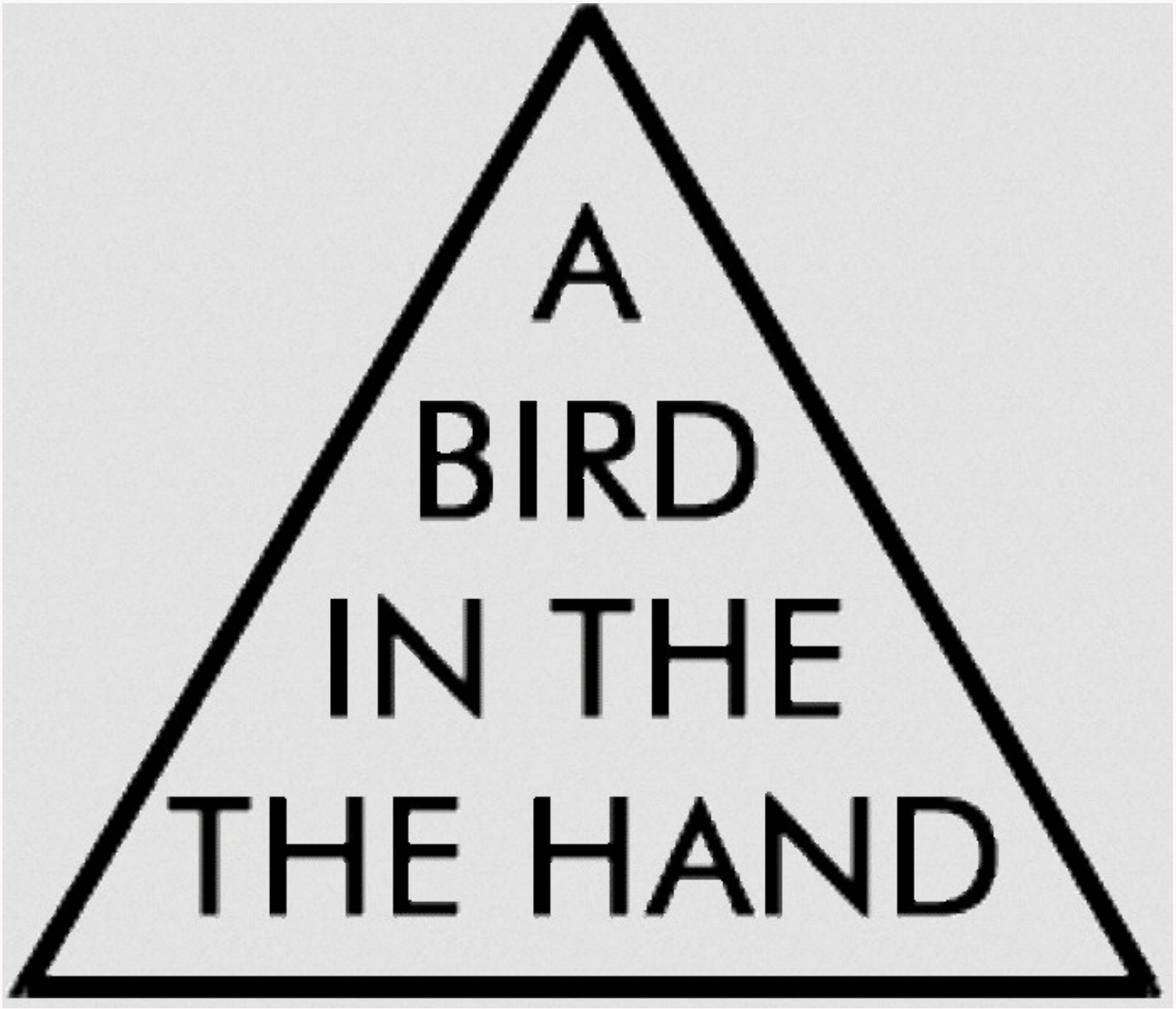
It deosn't rllaey mttaer waht oredr the ltteers in a wrod are; the msot imrpoatnt tihng is taht the frist and lsat letter be in the rghit pclae. The rset can be a taotl mses, and you can sitll raed it whit lttile porbelm. Tihs is bcuseae in prat we see waht we epcext to see; we do not raed ervy lteter by istlef, but isnated the wrod as a wlohe.

(q.v., Starr, 2018)

- Similarly, reading only the first couple of letters in each word can even expedite reading

- And a long-standing speed-reading technique is to cover the lower half of the words and only read the top

- But acronyms slow your readers down. Please, be kind to your readers.



Additional Points (cont.)

- Tense
  - Past tense for Methods & Results sections
    - Both your own & those you cite
  - Present tense for thoughts, assertions, etc.
    - The written word is still "alive"
  - Future tense discuss points farther down within the same manuscript

Additional Points (cont.)

- Precise writing nurtures precise thinking
  - *All* thoughts should be defensible
    - With clear support provided
  - Avoid extremes & superlatives
    - "Always," "extremely," "completely," "proved"
    - Unless (somehow) defensible

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Sentences

- Simple & direct sentences
  - Subject-verb-object
    - Subordinate clauses after main clause
  - Shorter is often better
    - But spend time writing out complex ideas
      - Don't assume readers know your thoughts
      - Write out comparisons
  - ~~Try to cut out unnecessary words~~
  - ~~Strive for an "economy of words"~~
  - Write succinctly

Paragraphs

- Explicitly create one topic sentence
  - Which is often best as the first sentence
- Relate all other sentences to it directly
  - Not sure? Start a new paragraph!
- Like sentences, shorter is often better
  - Although many frown on 1-sentence paragraphs

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Subsections & Headings

- Consider breaking sections into discrete subsections
  - With headings as guides
    - Which is easily done using formatting styles—especially from templates
- Add "navigation" text & transitions
  - To explain overall layout
  - What is coming next
  - What is currently begin discussed

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So Remember:

- Write simply & succinctly
- Present ideas precisely
- Support every statement
- Remain disciplined & objective
- Organize clearly & explicitly
- Use an active voice that speaks to a wide audience

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Introduction: Key Points

- To explain & defend the study you conducted
- Given length, organization is key
- Easy to digress into under-supported subjectivity
- Discuss sources in terms of what the *authors* did and think
  - "Smith (2020) found evidence and suggests it matters"

Methods: Key Points

- Provide enough detail so that an other researcher could replicate your study
  - The information you give is what you believe is necessary to replicate it
  - The information you *don't give* is what you believe is *not* necessary
- Please don't call it "Methodology"

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Subsections

- Typically:
  - Study Design
  - Participants
  - Procedure
  - Measurements / data collection
  - Analyses

Study Design

- Not always given as a distinct section
  - Sometimes part of the Procedure section
  - More useful than used
- Be succinct
  - Only provide overall design
  - Don't list/explain variables, etc.
  - One paragraphs usually suffices

Study Design (cont.)

- "A two-group, longitudinal, prospective, cluster randomized clinical trial was used to evaluate preliminary efficacy of the SHARP program." (Kintner & Sikorskii, 2009)
- "A cross-sectional descriptive design was used for the study." (Sanchez et al., 2019)

Participants

- Also called "Sample and Site"
  - And thus include information about the location
  - In any case, method of participant selection should be detailed
- Main goals arguably:
  - Describe relevant characteristics
  - Show reduction/sources of bias

Participants (cont.)

- Participants & site often main ways study is "delimited"
  - Described in Methods,
  - Implicitly/explicitly considered in Results,
  - Explored/discussed in Discussion
- Also address ethical treatment of participants
  - IRB approval can go here
    - Or in Study Design or Procedures

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Procedure

- Can often be written as a story
- A very important section to make easy to read & remember
  - So simplicity, explicit organization, & non-jargony/non-acronymy writing
- If complex, consider tables or figures to clarify
  - And for reader to use as a mnemonic/reference

Measurements / Data collection

- Often worth having its own subsections
- Ensure constructs are well defined
  - Also called "operationalization"
- Important to cover ways potential bias is addressed
  - Or could still be present
- Can discuss ways data are stored

Measurements / Data collection

- For self-report instruments provide:
  - Creation process (& theory)
  - Format & response process
  - If previously used:
    - Populations sampled
    - Reliability (Cronbach's α, inter-rater, etc.)
    - Description & support for valid uses
      - Excellent occasion to discuss different lines of evidence
      - And delimitations vis-à-vis current study

Analyses

- Sometimes given at beginning of Results
  - Or with Study Design
- Can include:
  - Sample size estimations (if done)
  - α-Value & if one- or two-tailed
  - Software used & version
    - Often unnecessary to note, e.g., Excel
  - Checks of statistical assumptions

Analyses: Example

Multilevel modelling was used to analyse data at the level of the patient-care partner dyad to control for data non-independence (Lyons and Sayer, 2005; Sayer and Klute, 2005) and to identify actor effects (e.g., patient characteristics associated with patient self-care maintenance, monitoring and management) and partner effects (e.g., patient characteristics associated with care partner contributions to self-care maintenance, monitoring and management). Three separate models (one for each self-care dimension) were tested.

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Results: Structure & Style

- Organization is important
  - Subsections & subheadings
  - Explicit transitions
  - Ordered by, e.g., research goals
- Descriptives are usually covered before inferential statistics
  - Can give background & orientation for further analyses

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Results: Subsections

3. Results

3.1. Sample characteristics

A total of 759 participants completed the baseline and follow-up assessments. Table 1 summarizes the sample characteristics. For all 3 samples, participants were mostly men, non-Hispanic, white, married, had some college education, and had just enough income to make ends meet.

3.2. Distribution-based estimates

We considered a 0.35 effect size and 1 SEM together for distribution-based MID estimates. As shown in Table 2, the distribution-based MID estimates for samples 1 and 2 (pain PROMIS-PI scores on the BPI interference scores). The linearity assumption was confirmed by inspecting scatter plots.

3.3. Anchor-based estimates

3.3.1. Cross-sectional anchor-based estimates

As shown in Table 2, for samples 1 and 2, each 1-point difference on the baseline BPI-I score (ie, MID) corresponded to about a 2-point difference in the PROMIS-PI score. For sample 3, each 1-point difference on the BPI-I corresponded to about a 3-point difference in the PROMIS-PI scores...

Structure & Style (cont.)

- Present results as a story
  - Or like you are exploring the data along with the reader
- But only report information
  - Like being a journalist
    - "Just the facts"
  - Don't editorialize or interpret
    - That's for the Discussion section

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Writing Style

- *Bottom line*:
  Overall writing recommendations matter even more in the Results
  - Minimal jargon & acronyms
  - Also assume little familiarity with design
    - Remind, restate, refer
    - Can explain analyses & what they mean
      - Or refer to Analyses subsection of Methods

Statistics as Support

- Provide statistics as evidence to assertions made in text body
  - Similarly to citations in Introduction
- Ensure all relevant values given
  - E.g., not just *p*-value
  - Usually also:
    - Effect size (correlations, model *b*- or β-weights, Cohen's *d*)
    - Confidence intervals / standard error
    - (And degrees of freedom / sample size)

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Use Visuals

- Tables/figures
  - Use as landmarks/guideposts
    - Or as "conversation pieces"
  - Text can summarize what is there
    - Especially what is most relevant to hypotheses
    - But also the interesting & unexpected
  - Repeat little from tables, etc. in text
    - Try to include few numbers outside of tables or parentheses

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Organization of Disc.

1. Summarize Results objectively
2. Relevance to research goals / hypotheses
3. Relevance to research cited in Introduction
4. Relevance to larger field
5. Future work & implications

Limitations

- Is arguably unnecessary
  - Limitations should be considered throughout the Results & Discussion
  - Nonetheless allows (requires) one to clarify their causes & implications
- Can be given short shrift by some
  - Which I find damages the article's overall credibility
  - Since those who need it most seem to be those who attend to it least

Limitations (cont.)

- Discuss the most important limitations in terms or your conclusions & recommendations
  - I.e., not a laundry list of all limitations you can think of
- Elaborate exactly how you believe it affects those conclusions & recommendations
  - Even though that may be a repetition


The End