

A close-up photograph of several pink lily flowers with green leaves. The flowers are in various stages of bloom, with some showing prominent stamens. The background is a soft-focus green.

Writing Successful Journal Articles

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Handouts

Handout 1:

1. **Guidelines for Writing a Research Article (+ Objectivity Spectrum)**
2. **Steps for Efficient Writing of a Journal Article**
3. **Writing Productivity**
4. **Tools for Scientific Writers**
5. **Workshop Feedback Form**

Handout 2:

1. **Hands-on Activity: Abstract → Paper**
2. **Abstract Results slides**

A close-up photograph of pink lily flowers and green leaves. The flowers are in various stages of bloom, with some showing bright orange stamens. The background is a soft, out-of-focus green.

Getting Ready to Write a Paper



Basic Questions to Ask in Advance

- 1. How shall I convert my project into a reportable study?**
 - How much new information is enough?
 - What makes an interpretable (or intelligible) data set?
- 2. What is this paper trying to prove? Why does it matter?**



More Planning Questions

- 3. What challenges do I face in putting the argument across? E.g.:**
- Strengths and weaknesses in findings
 - Design limitations or methodological difficulties
 - Comparison with the literature: conflicts and confirmations

Where and how will I address these issues?



More Planning Questions

4. What journal should I target?

- What readers do I want to reach?
- What is the journal's circulation volume, processing speed, available formats?
- To what level of journal (size of impact factor) can I successfully market the paper?

**Now: Commit to an action plan
and a timeline!**



Hands-on Activity 1: Abstract → Article

Focus of the Article:

1. What is this paper trying to prove?
2. Why does it matter?

[The answers will provide content
for the Introduction.]

A close-up photograph of pink lily flowers with green leaves and orange stamens. The flowers are in various stages of bloom, with some petals curled and others fully open. The background is a soft, out-of-focus green.

Writing a Research Article



Basic Elements of a Journal Article

- **Abstract**
- **Introduction**
- **Methods**
- **Results**
- **Discussion**



Abstract: Strategies

- **Write abstract to help readers decide whether to read or download**
- **Make it clear and informative**
 - importance
 - validity
 - applicability
- **Be sure the primary question and conclusions of the paper come through clearly**



Abstract: Content and organization

- 1. Follow order of sections in paper** (with subheadings if required)
- 2. Clear summary is more important than details of data** (this is not a meeting abstract)
- 3. State your conclusion clearly, but with essential qualifications: Don't let the brevity of abstract lure you into overstatement!**



Introduction: Strategies

- **Keep introduction short and focused**
- **Define question**
- **Establish importance and novelty**
- **Briefly describe the study design**



Introduction: Content and organization

1. Adhere to journal style for length, content
2. Paragraph 1: state question and why it matters
3. Paragraph 2-4: review literature selectively to defend:
 - choice of question/hypothesis
 - claim to novelty and significance
 - No detailed comparisons with previous studies



Introduction: Content and organization

4. Final paragraph: briefly describe:

- Study question or hypothesis
- Design
- Sample
- Methods



Methods: Strategies

- **Keep it simple and brief**
- **Define key variables and keep names consistent**
- **Document unfamiliar methods more thoroughly**
- **Use headings for clarity and easy reference**



Methods: Content and organization

1. Overview of design

- Define study type
- **TIP:** Offer only enough detail to allow reader to evaluate the study

2. Description of sample

- Population, sample size/power
- Recruitment plan, inclusion/exclusion criteria
- Comparison groups, other precautions to minimize bias
- IRB issues



Methods: Content and organization

3. **Study protocol:** patient assessment, intervention, evaluation of outcomes; timeline
4. **Procedures or instruments**
 - Diagnostic evaluation tools
 - Experimental interventions
 - Outcome measures
 - **TIP:** Give more detail where methods are novel, less where previously published



Methods: Content and organization

5. Statistical approach and methods

- Define terms and describe tests (briefly)
- Explain rationale for unfamiliar statistical methods



Hands-on Activity 2: Abstract → Article

Methods:

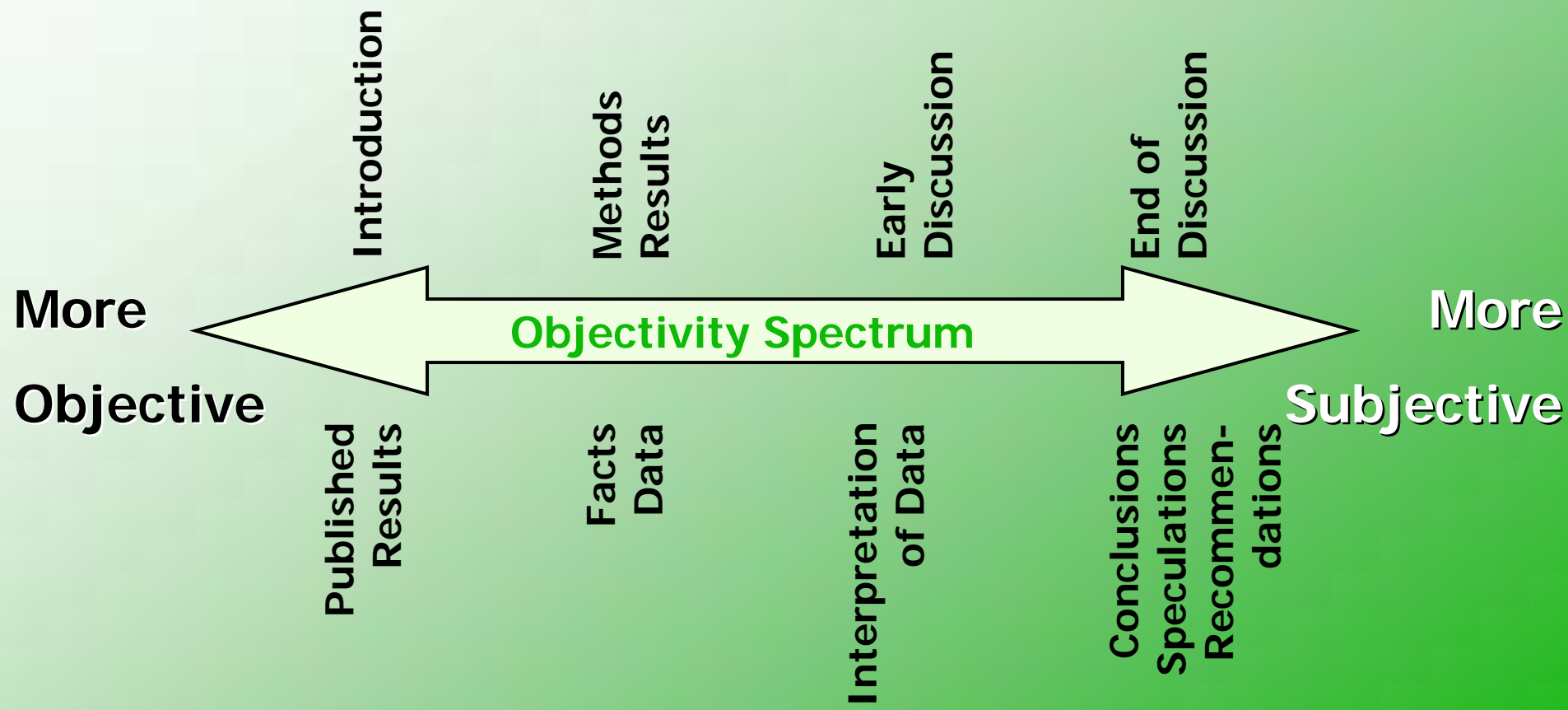
1. What part of the methods needs most detailed description?
2. What potential weaknesses need to be addressed?



Results: Strategies

- Present results systematically
- Keep like things alike: e.g. variable names, table/figure formats
- Answer all research questions
- Strictly avoid conclusions and speculations
- Let the data speak for themselves!

Sequencing Information Along Spectrum of Objectivity





Results: Content and organization

1. Typical order of presentation:

- Describe sample collected first
- Then follow order of hypotheses, or chronology, or design elements
- In general:
 - present simple results before complex
 - give prominence to strongest findings
- Provide subsection headings if needed for clarity



Results: Content and organization

2. Numerical data

- Use graphs and tables to highlight key results
- Choose best presentation format:
 - Use **graphics** to show relations between data sets
 - Use **tables** if specific numbers are essential
 - Otherwise, use **narrative**
- Briefly interpret figures and tables in narrative (but **don't** reiterate data)



Results: Content and organization

3. Narrative presentation of results

- **Stick to the facts!**
- Keep story as simple and focused as possible without distorting meaning
 - Avoid over-explanation
 - Avoid detailed data if summary is adequate
 - Omission of tangential data will almost always strengthen your paper



Hands-on Activity 3: Abstract → Article

Results:

1. How much data should be included?
Are the results as described in the abstract enough for a paper?
2. Consider which results should be presented in graphics, tables, or narrative.

Use slides from the abstract's platform presentation



Discussion: Strategies

- **Highlight key findings** and forestall criticisms
- Seek **balance** between over- and understatement
- **Be selective!** Discuss only results that deserve comment
- **Don't** disparage or attack previous studies; **do** try to explain differences
- **Separate conclusions/speculations** from interpretations of results



Discussion: Overall Framework

- First, **highlight key findings** in context of the study's central purpose
- Next, **evaluate strengths and weaknesses of findings** in relation to literature
- Then **discuss limitations** of study
- **End with conclusions and recommendations/next steps**



Discussion: Content and organization

1. Discuss other studies in order to:

- Compare previous results with your findings
- Clarify complex issues raised by your results
- **TIP 1:** Begin each paragraph with **YOUR** data
- **TIP 2:** Don't repeat literature review from Introduction!
 - There you establish study's importance and novelty
 - Here you use previous reports to confirm, question, or clarify your results (or theirs)



Discussion: Content and organization

2. Discuss limitations as well as strengths, e.g.:

- **Specific methodologic problems:** discuss in their own paragraphs (middle section)
- **Design weaknesses:** cluster in a paragraph before conclusions
- **Serious problems:** indicate how much they undermine confidence in validity of results (i.e., minimize the damage)



Discussion: Content and organization

- 3. End with a summary of key findings and brief interpretation of their significance**
 - Clearly label any speculations and recommendations that go beyond data
 - Propose specific future studies if suggested by novel results (don't recommend simple confirmatory studies)



Hands-on Activity 4: Abstract → Article

Discussion:

1. What is the strongest, most interesting finding to highlight?
2. What results need more careful discussion (e.g., in relation to previous reports)?
3. What are the limitations of the study?
4. Are the conclusions as stated in the abstract accurate and stated with sufficient qualifiers?



Challenges for Journal Authors

Balance the needs and expectations of two different audiences:

1. Reviewers are:

- hard to please
- like a lot of detail

2. Journal readers


- easy to confuse
- need more focus and simplicity



Challenges for Journal Authors

Balance two opposing needs of author:

- 1. To adhere to expected standards of objectivity: use accuracy and clarity**
- 2. To manage the reader's response to results: use focus and emphasis**
- 3. The balance changes as paper progresses:**
 - Factual focus \Rightarrow Generalization**
 - Clarity (objectivity) \Rightarrow Spin (subjectivity)**

A close-up photograph of a pink lily flower. The petals are a vibrant pink color, some showing white variegation. The green leaves are broad and pointed. In the foreground, several bright orange stamens are visible, hanging from the center of the flower. The background is a soft, out-of-focus green.

Efficient Writing of a Research Article in Three Phases



Phase 1: Preparation

- 1. Plan the paper when you plan the study**
- 2. Plan ahead for writing co-authored papers**
- 3. Collect, organize, and prioritize bibliographic materials before you begin to write**
- 4. Get data in order and draft tables and figures**



Phase 2: Developing the First Draft

1. **Choose journal, study *Instructions to Authors* , read recent articles**
2. **Define primary purpose: What question are you asking and how will you answer it?**
3. **Generate ideas (Make the bricks before you build the wall.)**
4. **Sequence ideas and shape first draft as quickly as possible (don't obsess over holes)**
5. **Refine the tables and figures**
6. **Now go back and systematically refine the document**



Phase 3: Feedback and Final Revisions

- 1. Recruit reviewers: collaborators, experts, + one “naive” reader**
- 2. Let document lie fallow while waiting for comments**
- 3. Assimilate and evaluate critiques**
- 4. Revise radically, if needed, but keep sequence of dated backups**
- 5. Before submission, re-review compulsively**
- 6. Know when to stop. You’ll get another chance to revise when the reviews come back.**

A close-up photograph of pink lily flowers with vibrant green leaves. The flowers are in various stages of bloom, with some showing the characteristic recurved petals. The background is a soft-focus green, creating a natural and fresh atmosphere.

Enhancing Your Productivity



Rate Limiting Steps in Writing Articles

- 1. Crafting a good question**
- 2. Reading the literature**
- 3. Planning and completing the study**
- 4. Starting to write**
- 5. Completing first draft**
- 6. Editing and perfecting (and dealing with co-authors)**
- 7. Completing and submitting**
- 8. Revising and resubmitting**



Efficiency Tips

- **The first draft only has to get written to succeed**
- **Develop regular writing habits**
- **Control your writing environment**
- **End a writing session at a new starting point**
- **If you stall out, find a fresh perspective**



More Efficiency Tips

- **Multi-task and recycle**
- **Exploit the power of the computer**
- **Revise efficiently (large to small scale), but expect to make multiple revisions**

**Good writers revise ...and revise
...and revise again!**

A close-up photograph of pink lily flowers with prominent orange stamens. The flowers are in various stages of bloom, with some petals curled and others fully open. The background is a soft-focus green, suggesting foliage.

Fighting Procrastination



What causes procrastination?

- Usually not laziness or inefficiency!
- Often the cause is a fear of failure
- Dealing with these emotions will make you much more productive
- Using failure constructively—for your purposes—can be the secret to success




Procrastination tips

- **Fight to protect your writing time**
- **Set time-limited goals and reinforce them**
- **Divide and conquer: subdivide task and timeline**
- **Create a writing support system**
- **Maximize the pleasure and minimize the punishment**
- **Curb your perfectionist urges!**



Fight perfectionist paralysis

- Don't aim for "perfection" too early in the process
- Learn to welcome outside input: Reviews by others will improve the document
- As you near the end, acknowledge when enough is enough:
How "perfect" does this product REALLY need to be?

A close-up photograph of a pink lily flower. The petals are a vibrant pink color, some showing darker streaks. The flower is surrounded by large, green, lance-shaped leaves. At the bottom of the flower, several bright orange stamens are visible. The background is a soft, out-of-focus green.

**Good luck and
persevere:**

**Only you can make
it happen!**