

Programa de Pós Graduação em Ecologia
Redação Científica na Língua Inglesa
(Scientific Writing in the English Language)

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Aula 2: Outline, Title, and Abstract
Jargon and unnecessary words
The publishing process

Trabalho final: Redação de artigo

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The Science of Scientific Writing

- Information is interpreted more easily and more uniformly if it is placed where most readers expect to find it.
- Anything of length that intervenes between subject and verb is read as an interruption, and therefore as something of lesser importance.
- “Save the best for the last”
- “First things first”

The Science of Scientific Writing

“Bees disperse pollen”

“Pollen is dispersed by bees”

➤ Compare your abstracts

Outline

An outline is:

- A logical, general description.
- A schematic summary.
- An organizational pattern
- A visual and conceptual design of your writing.

Outline

- Some people work well from an outline, others do not.
- Some people write first to discover the points, then rearrange them using an after-the-fact outline.
- Whatever process you may use, scientific writing requires special attention to order and organization.
- An outline is useful to develop a list of the major points to be included in each section, before you begin to write.
- If the paper has multiple authors, then this is a good time to work (and negotiate!) with your collaborators to insure that all the points the group wants to make get listed.

Outline

Before you begin:

- Determine the purpose of your paper.
- Determine the audience you are writing for.
- Develop the thesis of your paper.

Then:

- Brainstorm: List all the ideas that you want to include in your paper.
- Summarize the question(s)/problem(s).
- List the key points/elements pertaining to the question(s)/problem(s).
- Organize: Group related ideas together.
- Order: Arrange material in subsections from general to specific or from abstract to concrete.
- Label: Create main and sub headings.
- Note the sources pertaining to each detail.

➤ Write an outline for the text you have written the abstract (“Leaf litter selection by detritivore and geophagous earthworms”).

- **REMEMBER:**

- What are the questions?
- How the research was done?
- What data were collected?
- What do the data mean?
- What conclusions can be drawn?

➤ Outline “The Science of Scientific Writing”

Title

First impressions are strong impressions; a title ought therefore to be well studied, and to give, so far as its limits permit, a definite and concise indication of what is to come.

- T. Clifford Allbutt (in Day 1988)

- Avoid all but the most readily understood abbreviations.
- Avoid common phrases such as “An analysis of...“ and “The effect of...“, “Studies on...“, “Preliminary studies on...“, “Contributions to...“, “Observations on ...”.

Ex.:

“The effect of radar electromagnetic fields on migrating birds”
(states the objective of the article).

“Migrating birds respond to radar electromagnetic fields”
(states the conclusion or main point of the article).

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Title

- The title as label, not a sentence.
- Indexing and abstracting services depend on the accuracy of the title. An improperly titled paper may never reach the audience for which it was intended.

Ex.: “The effect of climate on aspects of the population dynamics of Atlantic Forest small mammals”.

“Climate and the population dynamics of small mammals”. (?)

Title: “effect of”

Unnecessary (rewrite excluding unnecessary words):

"The effect of biodiversity on the hantavirus epizootic." Peixoto, I. D. and G. Abramson (2006). *Ecology* 87(4): 873-879.

"Assessing the effect of estimation error on population viability analysis: an example using the black-capped vireo." Parysow, P. and D. J. Tazik (2002). *Ecological Modelling* 155: 217-229.

"Effect of weather variables on the population fluctuation of muroid *Calomys venustus* in central Argentina." Castellarini, F., C. Provencal, et al. (2002). *Acta Oecologica* 23: 385-391.

Appropriate:

Bellamy, P. E., P. Rothery, et al. (2003). "Synchrony of woodland bird populations: the effect of landscape structure." *Ecography* 26: 338-348.

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Title: “preliminary”

Unnecessary (rewrite excluding unnecessary words):

"A preliminary qualitative analysis of the axial skeleton of tupaids (Mammalia, Scandentia): functional morphology and phylogenetic implications." Sargis, E. J. (2001). *Journal of Zoology* 253: 473-483.

"Preliminary list of mammals of the Xavantina/Cachimbo Expedition (Central Brazil)." Pine, R. H., I. R. Bishop, et al. (1970). *Transactions of the Royal Society of Tropical Medicine and Hygiene* 64: 668-670.

Appropriate:

"The mammals of northeastern Brazil: a preliminary assessment." Mares, M. A., M. R. Willig, et al. (1981). *Annals of the Carnegie Museum* 50(4): 81-137.

Abstract

- Do not repeat information contained in the title. The abstract, together with the title, must be self-contained
- If it is self-contained, the abstract must **not** contain references.
- Avoid use of "in this paper" in the abstract. What other paper would you be talking about here?
- Highlight not just the problem, but also the principal results. Many people read abstracts and then decide whether to bother with the rest of the paper.
- Since the abstract will be used by search engines, be sure that terms that identify your work are found there.
- Avoid equations and math.

Abstract

- **Informative** abstract: it should capsule the paper. Briefly state the problem, the method used to study the problem, and the principal results and conclusions.
- **Indicative** abstract: indicates the subject of the paper, but seldom substitutes the full paper. More frequent in review papers and reports.

Aim for economy

<i>Instead of:</i>	<i>Write:</i>
prior to	before
due to the fact that	because
in a considerable number of cases	often
the vast majority of	most
during the time that	when
in close proximity to	near
it has long been known that	I'm too lazy to look up the reference

Use concise terms

<i>Instead of:</i>	<i>Write:</i>
possess	have
sufficient	enough
utilize	use
demonstrate	show
assistance	help
terminate	end

Who is, which was, etc, are often superfluous

“His brother, who is a member of the name
firm...”

“His brother, a member of the name firm...”

“Trafalgar, which was Nelson’s last battle...”

“Trafalgar, Nelson’s last battle...”

Insight Fragmentation: Is the Message Clear?

John A. Bissonette and Ilse Storch

Conservation Ecology 6(2): 14.

<http://www.consecol.org/vol6/iss2/art14>

In this paper, we briefly discuss some of the fundamental problems arising from the inherent complexity of larger-scale ecological systems. We examine the tenuous assumption of a direct correspondence between ecological data and theory, we comment on a recent report that evaluated the efficacy of fragmentation experiments, and we briefly assess its implications for ecological research and conservation practice on the landscape scale.

Short-term movements and habitat use of the marsupial honey possum (*Tarsipes rostratus*)

S. D. Bradshaw and F. J. Bradshaw,
J. Zool., Lond. (2002) 258: 343-348

Miniature radio-transmitters were used to follow movements over a 10-day period of the 10 g honey possum *Tarsipes rostratus*, and the areas covered were compared with home-range estimates calculated from long-term mark-and-recapture records using pitfall traps. The study was carried out in the Scott National Park, in the extreme south-west of Western Australia, and shows that honey possums may move far greater distances than is apparent from trapping records. The overall mean area used determined by radio-tracking was significantly larger at 0.54 ± 0.19 ha than the apparent home range of 0.03 ± 0.01 ha determined by trapping. The area used by males was significantly greater than that of females when measured by radio-telemetry (0.79 ± 0.24 ha vs 0.14 ± 0.08 ha, $P = 0.058$), but did not differ significantly when estimated from trapping records (0.03 ± 0.01 ha vs 0.01 ± 0.01 ha). These data suggest that honey possums frequent plant assemblages at night where they are vulnerable to pitfall trapping, but that males, particularly, spend the day in other areas that may be as far as 200m distant.

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General tips for a “good story”

- When you realize you have enjoyed a story or an article, ask yourself: Why have I enjoyed reading this paper? What absorbed me? What made it easy to read?
- When you sit down and plan your own paper, ask first: For whom am I writing this paper? Why should they be interested? What key points will they gather? How will they apply the information?
- Think about the person you are "talking to".
- You should plan to appeal to the reader, not to a promotion committee or a granting agency. Forget about how good this paper will look on your CV; forget about being *impressive*. Think about readers like you and understand your excitement.

The publishing process

1) A well planned work is easier to analyze and write.

2) A well written manuscript has more chance of being accepted (but is no substituted for good data and analyses).

3) Rejection is not the end of the world...

Cassey e Blackburn (2003):

→ 61 Ecologists with +10 papers in *Oikos*, *J.Anim. Ecol.*, *J. Ecol.*, *Ecology* and *Am.Nat.*

→ 15,5% rejected once, 7,71% rejected at least twice

4) Tools of the job:

a) English and good dictionaries (English-English, Thesaurus)

5) The referee is not always write: the editor is the judge

Divergent opinions between referees

The publishing process

6) *Origin and name of the author could affect acceptance?*

7) *Subject of the paper could interfere?*

“Fashion” subjects

8) *What novelty brings your paper?*

In other words: Would a chinese be interested in your study?

9) *Choose the right place for publication*

Regional vs. “international” publications

To publish in journal Y, better read what it publishes

Using setae of *Cricotopus* larvae (Diptera: Chironomidae) to identify species differing in pollution tolerance

There have been many environmental impact assessment studies that have enumerated particular macroinvertebrates for the purpose of revealing the severity of pollution. [A string of references] A number of authors have found that there are significant differences among chironomid species with regard to impact tolerance. [A string of references]. It is well known that impaired sites often support more chironomid individuals than pristine sites. This has been incorporated into water resource quality management decision making programs. However, it has been shown that identification to species is not cost effective in routine biomonitoring programs. In order to address this problem, a new methodology was utilized to reveal setal characteristics exhibited by larval Chironomidae. The procedure described in this paper will facilitate laboratory processing and render biomonitoring procedures more effective.

Setae on Cricotopus (chironomid) larvae: a taxonomic tool for biomonitoring

The severity of environmental pollutants is often judged according to numbers of particular macroinvertebrates. [A few references]. Species of chironomids differ significantly in their tolerance of pollution. [A few references]. Chironomid density is often higher at polluted sites than at clean sites. This distinction is used to assess and manage water quality. Identifying these species, however, has been too expensive for routine biomonitoring. To find a solution, I used a new stain for chironomid setae. Easier detection of identifying setae will make biomonitoring cheaper and more effective.

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<http://www.bms.bc.ca/library/Guidelines%20for%20writing%20Scientific%20papers.pdf>.