

RESEARCH COMPONENTS: LITERATURE REVIEW AND THESIS

Literature Review *(extract from information guide for students)* **(7.5% of Unit mark)**

While preparing your Research and Development (R&D) proposal you have started reading literature relevant to your research project. You used this knowledge to write the background for your R&D proposal. Here you expand on this and write a literature review that places your research topic in a broader context. Your review should not be a summary of what has been published on your topic in the past. Instead you will write a synthesis of the literature relevant to your research topic. This literature review forms the basis of the general introduction to your thesis. The amount of ‘tweaking’ you will need to do when writing the general introduction to your thesis depends on how much your research has changed since finishing your review.

The following guidelines for writing a literature review set out the formatting style of an ‘Opinion’ article as published in *Trends in Ecology and Evolution (TREE)* (note that almost all Life Science disciplines have a dedicated *Trends* journal although not all of them publish ‘Opinion’ articles).

Instructions for Authors – TREE Opinion articles

***Trends in Ecology & Evolution (TREE)* is a journal of news, review and comment, designed to help a general audience of ecologists and evolutionary biologists to stay abreast of current trends throughout the field. Please follow these instructions carefully, because our editorial policy differs in important respects from that of primary research journals:**

General Considerations

A **TREE Opinion** article should present a personal, very authoritative, viewpoint on a research-related topic, rather than a balanced review of this topic. The aim should be to stimulate debate or new research. It can cover very timely controversial topics, provide a new framework for, or interpretation of, an old problem or current issue, or speculate on the implications of some recently published research or data (that merits a more in-depth discussion than that provided by other sections).

Opinion articles will often, although not always, be based on recent research. Although the subject area need not be generally timely, some aspect of the subject should be highly topical e.g. new data that renew interest in a specific controversy or debate. Articles that merely outline recent advances in a field rather than give a strong *opinion* on them are not suitable for this section of the journal (more suited to the Review section).

In particular, to maximize the impact of their article, authors should bear in mind the following considerations:

- Start with a strong introduction outlining the timeliness, importance and rationale behind your article (why the subject is important, why now).
- Finish with clearly stated conclusions, including an indication of expected developments in the subject and the direction that future research should take.
- Do not include unpublished data, formal models or meta-analysis. Very very occasionally, unpublished data can be referred to, but only when absolutely essential; they should be clearly identified as unpublished and never be used to substantiate any significant point.
- Although subjective, an opinion article should not be used to dwell excessively on the author's own research or excessively criticize others', except where criticism is constructive.
- We encourage the use of straightforward illustrations, simple tables and short boxes to enhance the message of the main text.

Your readers will range from student to professor, so when writing for us, please aim to make your **Opinion** accessible to the entire readership of *TREE*. You can assume that your audience is competent in the basic language of the subject, but may require explanation or definition of technical terms, concepts and assumptions specific to your topic. Avoid jargon, but do not oversimplify or cut corners: be accurate and precise throughout.

Specific Guidelines

To help you prepare your article, please take careful note of the following guidelines. Those given under the 'optional' section are available for use if you wish. A more detailed checklist follows these instructions

Title	<ul style="list-style-type: none"> • Titles should be short and enticing • No more than eight words. • Avoid very specialist terminology.
Authors names	<ul style="list-style-type: none"> • Not relevant
Abstract	<ul style="list-style-type: none"> • Briefly explain the necessary background. • Encapsulate the main conclusions for a non-specialist readership. • Emphasize the opinion you are trying to put forward. <p>Between 100 and 150 words.</p>
Teaser	<p>In addition to the Abstract, all Opinion articles should include a very short 'teaser', which will be used to convey rapidly to the reader why the article is relevant and interesting. The teaser should be a short, single sentence (20-35 words) - the equivalent of the first sentence of a news report - and will appear under the article's title in BioMedNet's e-mailed tables of contents, newsletters and such. It should be a simple statement highlighting your article and, importantly, your opinion, not a comprehensive summary of the work.</p>
Opinion structure	<p>To help guide the reader through the article, your 'Opinion' should follow the basic structure outlined below:</p> <ul style="list-style-type: none"> • Start with a short introduction aimed at nonspecialist readers. • Use subheadings to guide readers through the article. • End with a strong take-home message, including an indication of future directions.
Length	<ul style="list-style-type: none"> • Opinions must be between 1500 and 2500 words max. (2500 words (including spaces) is approximately 7 pages, single space.) • This word limit does not include text in boxes, reference list, tables or figure legends.
References	<ul style="list-style-type: none"> • The reference list should not be exhaustive – it should simply alert the readers to the key literature on which your opinion is based. • Reviews should be cited if necessary to refer to older data.

Optional

Figures*	<ul style="list-style-type: none"> • Use of clear figures is strongly encouraged. • Titles should be short and explanatory. • Legends must fully explain the figure without reference to the text
Tables*	<ul style="list-style-type: none"> • Require a single sentence title but no legend. • Abbreviations and full explanations should be footnoted (using letters).
Text Boxes*	<ul style="list-style-type: none"> • Didactic aids should be used to display additional information that would interfere with the flow of the main text. • Ideal for providing explanations of basic concepts or theories, giving detailed mechanisms or discussing case studies. • Text Boxes can occasionally contain small figures and tables (with legend or title). • Maximum of 400 words per Box and 8 references (cited within the box - see checklist below). • No more than 3 boxes per article.
Conclusions /Outstanding Questions Box	<ul style="list-style-type: none"> • These can be summarized at the end of the article if desired. • Counted separately from Text Boxes (above). • Maximum of 200 words. • Only if necessary
Glossaries	<ul style="list-style-type: none"> • For use when Opinions contain extensive amounts of specialist language (for instance, terms unknown to senior undergraduates). • Counted separately from Text Boxes (above).

Literature Review Marking Criteria

Objective: *To prepare a well-organised, clear, concise review of the literature on a topic selected by the student in consultation with the supervisor. The review should not be a mere précis of research papers, but a genuine synthesis of the literature. As a guide, the review should be prepared as an 'Opinion' article suitable for submission to a Trends journal germane to the research topic.*

Marking Criteria

First Class (90-100)

Full understanding of the topic and its importance to biology and the broader context. Evidence of conceptually sophisticated thinking e.g. by inclusion of personal views, connections with other subject areas etc. Arguments supported by evidence and examples.

Student will have consulted a wide range of appropriate sources. Appropriate referencing in a standard format with minimal errors. Use of original tables and figures to summarize data from multiple sources to support an argument.

Excellent overall standard of presentation, exhibiting a high standard of English and clarity of expression. Appropriate use of fonts and effects. Rich, flowing text, pleasure to read with minimal errors. Appropriate separation of text into sections/sub-sections.

First Class (80-89)

Student will have demonstrated substantial understanding of the topic area and its place in biological science. Critical evaluation and arguments supported by evidence and examples with some evidence of independent thinking. Evidence of consulting a range of appropriate sources which are appropriately referenced. No significant errors. High standard of presentation, exhibiting a good standard of English and clarity of expression. Appropriate use of fonts and effects. Writing is accurate.

Second Class (75-79)

Understanding of the topic demonstrated, but with limited evaluation of its importance. Restricted use of evidence and examples. Some errors. At least acceptable standards of English, but with ambiguities and awkward expression. Some attention to layout and formatting. References in text and bibliography correctly cited. Writing mostly accurate but uninteresting.

Second Class (70-74)

Little understanding of the topic area demonstrated, with no attempt to synthesize. Review will be little more than a précis of research papers. Opinions expressed are likely to be directly taken from published reviews or papers. Occasional errors in facts. Limited reading with a short bibliography. In the main, references in text and bibliography are correctly cited. Poor layout and formatting. Basic use of reproduced figures and tables.

Third Class: (65-69)

Limited understanding of the topic area. Frequent factual or other errors. Inadequate standard of presentation. Poor use of English and inappropriate use of fonts and effects. Writing has frequent ambiguities, errors of expression, verbose or too brief. Insufficient reading around the topic. Referencing contains errors. Almost no attempt to provide a logical structure. No evidence of independent thought.

Fail: <65

Limited understanding demonstrated. Unacceptable standard of presentation, including use of English. Poor presentation, rushed and sloppy. No, or totally inadequate, reference to literature and other sources of information.