

Guidelines for writing an expert opinion report¹ (position statement)

- A) Good to know about expert opinion reports
- B) Elements of an expert opinion report
 - B1) based on arguments
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- D) Examples of high-quality expert opinion reports (to be used in your own work)
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A) Good to know about expert opinion reports (position statements)

What is an expert opinion report?

- A report of a scientifically based, traceable argumentation in an applied issue.
- A well-founded written answer to a question of practical or political concern.
- A presentation of qualified arguments in favor of and against a specific position.

What is the function of an expert opinion report?

- To provide expert opinion in a field of debate.
- To indicate points to consider in a decision process.
- To compile the existing knowledge relevant for the answer to a question or the solution to a problem.

Who is the audience of an expert opinion report?

Commissioned expert opinion reports are usually prepared for clearly defined specialist audiences (e.g. administrative officers). These clients typically have some knowledge of the topic and understand the style of scientific argumentation. Reports which are published and widely distributed have a more heterogeneous audience. For a non-specialist audience it is important that sufficient explanations and enough background information are provided. Reports for executives and politicians fall somewhere in between. This audience is usually familiar with the principles of scientific reasoning but may have no specialist knowledge of the respective topic.

Which types of expert opinion reports exist?

- **Reports/position statements based on arguments** are based on published research findings, theoretical considerations, and logical connection of different arguments. No empirical research is conducted for these reports.
- **Reports/position statements based on empirical investigations or meta-analyses** are based on novel, original data. Data might be collected with experiments, questionnaires, interviews, or meta-analysis of already published data (see **Guidelines for writing a review article**, systematic review).

What is the relationship between an expert opinion report and an executive summary?

- Expert opinion texts are usually longer (more than 10 pages), often in the style of a report, and usually contain an executive summary (see **Guidelines for writing an executive summary**).

¹ = Expertise [CH], Begutachtung [D]

- Executive summaries are also provided as a stand alone document in other contexts; to communicate the relevant results of in-depth studies, or to summarise grant proposals or the outcome of discussions, meetings or conferences.

How long is an expert opinion report?

- Expert opinion reports or statements vary considerably – anything from five to several hundred pages is accepted. For commissioned reports the number of pages is often specified by the client.
- The longer the text, the more sophisticated the text structure should be.

B) Elements of an expert opinion report ...

B1) ... based on arguments

Title

Function Helps readers decide whether the report is relevant for them or not.

Elements

- 1) The title must be **informative**:
 - The title has to include important terms.
 - It should indicate that the text is an expert opinion report.
 - It could include the result or central message of the report, not just provide an indication of the topic covered.
- 2) The title must be **short**:
 - Keep the title concise.
 - A longer subtitle may be an option if a specification is considered necessary.
- 3) The title should **attract attention** if the expert opinion report is aimed at a broad audience. To achieve this:
 - Use statements that indicate a position in a debate, or
 - Use controversial statements

Note

The title of commissioned expertise opinion reports is sometimes given by the ordering party.

Introduction

Function

- Puts the report into context, indicates practical issues related to the debate, states the motivation behind the report and defines the question investigated.
- The answer to the question (main claim of the report) might be given in the introduction, followed by supporting arguments in the body of the report. Alternatively, only the question is raised in the introduction with the answer(s) provided as part of the conclusions.

Elements (of a three paragraph introduction)

Paragraph 1) Introduction of the general topic, issue or area of concern.
Paragraph 2) Presentation of the problem, related theories, or premises, and/or explanation of research results.
Paragraph 3) Outline of the motivation behind the report and definition of the problem or question and approach. The organization of the text may be described.



Note

Make sure an explicit question is raised at the end of the introduction.

Body

Function

Presents the arguments in favour and/or against a specific position. Provides information so that the reader can form their own opinion.

Arguments

The body of the report should include several arguments to support the position and to prepare the answer to the question. A set of arguments consists of premises, claims, reasons, and points of evidence.

Definition of terms (elements for presenting a line of argumentation)

- Argument, a well supported statement or standpoint in a debate. In an expert opinion report it can thus be considered the basic structural unit of the body section.
- Premise, a statement assumed to be true (or it is simply and assumption?). They are either explicit statements or assumed to be implicit.
- Reasons and evidence are provided to support claims.
- Reason, states why readers should accept claims (Booth et al. 2003) and must be based on evidence.
- Evidence, what readers accept as facts (Booth et al. 2003). In scientific texts evidence is either produced by own investigations or by reference to published studies.



Example for a set of arguments

Question: What are the effects of “climate change” [global warming] on plant productivity in the Swiss lowlands?

Premise: Climate change in the Swiss lowlands is associated with a longer vegetation period, higher CO₂ concentrations and less summer rain.

Claim/Position: Climate change results in increased plant productivity.

Argument 1

Claim: The longer vegetation period associated with climate change has positive effects on plant productivity.

Reason: An extended vegetation period results in an increase in the number of days per year that have a positive energy balance.

Evidence: Reliable studies supporting this reason.

Argument 2

Claim: The higher CO₂ concentrations associated with climate change have positive effects on plant productivity.

Reason: Photosynthesis and thus tissue production rates are higher when CO₂ concentrations are increased.

Evidence: Reliable studies supporting this reason.

Argument 3

Claim: A decrease in total summer rainfall has negative effects on plant productivity.

Reason: Water is a limiting factor in photosynthesis. Reduced water availability under high temperature conditions results in reduced plant productivity.

Evidence: Reliable studies supporting this reason.

Counter evidence: Reliable studies showing drought tolerance of plants in response to e.g. extended drought periods.

Paragraphs and sections

- Cover one argument (with claim, reason and evidence) per paragraph.
- If you need more than one paragraph for an argument distinguish the arguments by using (sub)headings.

Possible order of arguments

- The strongest argument first, the weakest argument last.
- First the arguments in favour, then the arguments against (or vice versa).
- One argument in favour and one related argument against. Then the next argument in favour (dialectical structure).

Note

- Critical evaluation of available knowledge lays the foundation for the development of arguments.
- Consideration of a broad range of positions contributes to the quality of an expert opinion report.
- Comprehensible claims and reasons as well as verifiable points of evidence are mandatory.
- A carefully planned order of arguments and a convincing line of reasoning, guides the reader in the direction intended by the author.
- High-quality references, e.g. publications in peer-reviewed journals, support arguments and claims.

Conclusions

| | |
|----------|---|
| Function | Summarises the main points and answers the question set in the introduction. |
| Elements | <ul style="list-style-type: none"> • Evaluation of different arguments and summary of key arguments. • Identification of open questions and limitations of the report. • Implications of the findings. • Author's opinion and criticism (clearly indicated as personal statements). • Take-home message. |
| Note | <ul style="list-style-type: none"> • Make sure that the position put forth is firmly supported by the information given in the body of the text. • Make sure to have a strong last sentence that ties in well in with the title. |

B2) ... based on empirical investigations or on a meta-analysis

This type of report is based on novel data or novel findings based on published data. Data might be collected with experiments, questionnaires or interviews or might be in the form of meta-data. A systematic literature review with a meta-analysis (see **Guidelines for writing a review article**) might be an appropriate approach for this type of report.

Reports based on empirical investigations or meta-analyses

Section structure The section structure is the same as that of research articles (see **Guidelines for writing a research article**):

Introduction

Why is it important to conduct the investigation?
What are the objectives?

Material & Methods

How was the investigation conducted?

Results

What was found?
Can the findings be summarized by use of tables and/or figures?

Discussion

What do the results mean? How do they relate to similar studies (support or contradict their results)?

In addition, a section with conclusions/recommendations is often added (What should be done now?).

Difference between review article and expert opinion report

Just as in review articles, one or several questions will be raised at the end of the introduction, and a definite answer will be provided at the end of the discussion or in the conclusions/recommendations section. However, an expert opinion report will:

1. be usually be aimed at a non-academic audience – the **motivation** will be different
2. have a direct **application in society**
3. present specific **recommendations for future action**

Note

The quality of this type of expert statement depends heavily on the methods applied and on the interpretation of results.

B3) ... additional recommendations for writing extensive expert opinion reports

These elements are recommended for extensive reports (both types)

| | |
|-------------------|---|
| Title page | Including title, author(s), institute, ordering party (if the expertise is commissioned), and date. |
| Table of contents | Including section headings and page numbers. |
| Executive summary | see Guidelines for writing an executive summary |
| Appendix | For additional information such as raw data, graphs or budget information. |
| Index | With keywords and page numbers usually placed last |

For other structural elements of expert opinion reports (e.g. list of authors, acknowledgements, references) see the **Guidelines for writing a research article** and **Guidelines for writing a review article**.

C) Preparing an expert opinion report (position statement) in 16 steps

| stage | step | |
|----------|--|--------------------------|
| prepare | 1. define the topic, define the question(s), unsolved problem, or point of debate | <input type="checkbox"/> |
| | 2. compose a preliminary title | <input type="checkbox"/> |
| research | 3. search for literature sources | <input type="checkbox"/> |
| | 4. read, evaluate, classify and make notes | <input type="checkbox"/> |
| | 5a. <u>for reports based on empirical investigations</u> : design data collection, collect and analyse the data | <input type="checkbox"/> |
| outline | 5b. <u>for reports based on arguments</u> : find supporting claims, develop the line of argumentation, find headings for the body sections | <input type="checkbox"/> |
| | 6. redefine the focus to one question or problem and one answer or solution | <input type="checkbox"/> |



- | | | | |
|--------|-----|--|--------------------------|
| | 7. | prepare an outline, you may include in this outline the main message of each section | <input type="checkbox"/> |
| | 8. | plan the content of each section | <input type="checkbox"/> |
| | 9. | prepare tables and figures | <input type="checkbox"/> |
| draft | 10. | draft the body sections (the arguments or the methods and results sections) | <input type="checkbox"/> |
| | 11. | draft the conclusions (and/or the discussion section) | <input type="checkbox"/> |
| | 12. | draft the introduction | <input type="checkbox"/> |
| revise | 13. | revise all sections, including the title, tables & figures | <input type="checkbox"/> |
| | 14. | revise citations and references | <input type="checkbox"/> |
| | 15. | correct grammar, spelling, punctuation | <input type="checkbox"/> |
| | 16. | adjust the layout | <input type="checkbox"/> |

IMPORTANT: Make sure to ask competent persons for feedback in all stages of the preparation process.

Remember that extensive expert opinion reports will require additional elements such as an executive summary (see **Guidelines for writing an executive summary**), table of contents and an index.

D) Examples of high-quality expert opinion reports in the biological and environmental sciences

Sample expert opinion reports

Report based on arguments

Genetically modified plants for food use and human health – an update. The Royal Society (2002). Policy document 4/02 ISBN 0 85403 5761, 20pp. Available from www.royalsoc.ac.uk

Structure includes:

- 20 pp. long
- Title page. Title includes phrases that will immediately attract attention: “genetically modified” and “human health”. Date and number of policy document are also noted.
- Table of contents (p. 2).
- Preparation of this report (p. 2). Listing of the authors and the institutes to which they belong. This section also says that the present report is an update on a 1998-report, based on research published in the last three years.
- Summary (p.3-4). This is the executive summary, presented in the form of numbered points.
 - 1: *background and motivation*
 - 2: *current status* of GM crop production in the UK and Europe and expression of support of continued research in this field
 - 3-9: *position statements* (arguments) in the form of claims and reasons based on evidence. Some of these start with a statement of concern, others start with a premise. Most of them end with recommendations followed by a target for action. Note the use of phrases such as “we support the continuation of research...”, “we endorse the conclusions of the...”, “we believe that the public debate about GM...”, we agree with the...”, we welcome the development of...”, we recommend that...” and “having reviewed the scientific evidence we conclude that the risks to human health...”.
- Introduction (p. 4-5). Background and motivation of the report are stated, along with a summary of the current status of GM technology and possible directions of future research (paragraphs 1-2). The topics covered are bulleted and the sources of



scientific evidence given (paragraph 3). The scope of the report, restricted to scientific issues and excluding social and ethical concerns, is defined (paragraph 4) and finally an update on a controversy remaining in the 1998-report is given and the report is placed in the context of the importance of basing policy decisions on sound science (paragraphs 5 & 6).

- **Body**, divided into five sections representing one argument each (pp. 5-10). These may be based on a controversy (2), a review of current knowledge and understanding of an aspect of the topic (3, 4) or the falsification of a premise based on recently documented evidence (5, 6). Each argument follows the general outline:
 - *Background*, in which the controversy identified and explained or premise stated, followed by background information to put this into context.
 - *Position statement*, including phrases such as “we accept that”, “we agree with...”, “we welcome...”, “there is strong evidence that...” and “it therefore seems improbable that...”
 - *Recommendations*, future outlook and/or conclusions
- **Conclusions and recommendations** (p. 10-11). A position statement is followed by a list of recommendations regarding health and safety assessments and regulations, research direction and collaborations.
- **References** (pp. 11-13), in alphabetical order.
- **Appendices** (pp. 14-18). I: Press release about the present report. II: List of people and organisations that provided evidence. III: Legislations in existence and pending decision on GM products, distribution and production at EU level and within the UK. IV: Recommendation by the Royal Society from the 1998-report and updated. V: Glossary of technical terms.
- **Index of other reports by the Royal Society** (p. 19)
- **Back cover**. Contact details for further information and information about the Royal Society.
- **NOTE**: There are no figures or tables in this report.

Report based on empirical investigations or meta-analyses

Alcamo, J., J.M. Moreno, B. Nováky, M. Bindi, R. Corobov, R.J.N. Devoy, C. Giannakopoulos, E. Martin, J.E. Olesen, A. Shvidenko, 2007: Europe. *Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson, Eds., Cambridge University Press, Cambridge, UK, 541-580.

Structure includes:

- 40 pp. long It is a stand-alone report by the IPCC on one aspect of Climate Change. In its entirety the report is 976 pp.
- **Title page includes** author information and recommendation for appropriate citation of the report.
- **Table of contents** (p. 542)
- **Executive summary** (p. 543-44). Statements in the form of results of documentations or projections are made, followed by further evidence to substantiate these statements. In some cases implications of the results are stated, or consistency with other studies assessed.
- **Introduction** (p. 544). Summary of knowledge from the previous IPCC assessment report. Also states that this is a review of literature on anticipated impacts, adaptation and vulnerability in Europe to climate change during the 21st century.
- **Body** (pp. 545-563)
 - *Current state of affairs based on existing literature* (pp. 545-7)
 - *Results of meta analyses* (climate projections for Europe) based mostly on data from another IPCC report discussed in the light of and substantiated by current literature (pp. 547-49)
 - *Implications of these analyses* (projections) discussed in the light of current



- literature (pp. 549- 558)
- *Possible directions for future action* (adaptation to climate-driven changes) with use of statements backed by literature such as “adaptation options to cope with these challenges are well-documented” and “there is a wide range of available management options that can be employed to adapt...” and more direct recommendations such as “adaptation strategies need to be specific to different parts of Europe” or “an obvious adaptation measure against...” (pp. 559-562)
 - *Case studies* [=facts, evidence]. Facts based on two case studies are presented along with the action plans these cases have resulted in or along with a reevaluation of severity of impacts based on updated assessments (pp. 562-563).
 - Tables are used to summarise: documented recent changes to terrestrial ecosystems, agriculture etc. to recent temperature and precipitation trends (p. 546); impacts of climate change on water availability, drought and food occurrence (p. 550); projections regarding case study #2 (p. 563). The Tables are novel summaries, not published elsewhere.
 - Figures are used to: summarise impacts and vulnerabilities identified in the report (p. 549); changes in amphibian and reptile species richness (p. 554); key vulnerabilities of different areas in Europe during the 21st century (p. 558); data used in a case study (p. 562). Figures have been adopted from published sources.
 - Conclusions, future projections on increased pressure on Europe’s environments, societies and economies and on requirements for research tools and approaches to better understand these pressures (p. 563). Summarised in a Table (p. 565).
 - Open questions, uncertainties in current projections and future research priorities (pp. 564-566). Overview of some ongoing studies and identification of uncertainties and areas these studies do not address. Summarised in a Table (p 566).
 - References, ordered alphabetically (pp. 566-580)
 - **NOTE:** while the report clearly presents results and facts that represent one side of an actively debated issue, it is written in a passive voice, basing all statements on published facts. There are no direct statements such as “we recommend...” and thus the position statement is implicit, rather than explicit, throughout.

Extensive expert opinion report

Systematics and Taxonomy: Follow-up. House of Lords, Science and Technology Committee. 5th Report of Session 2007-08.

Structure includes:

- 386 pp. long
- Title page. Note: “Report with Evidence” and “Ordered to be printed 21 July 2008 and published 13 August 2008”
- Information about and contact details for the Science and Technology Committee, House of Lords
- Table of contents
- Abstract (p. 7), equivalent of an executive summary. It starts with a premise, goes on to define “ecosystem services” for which systematics and taxonomy are considered a tool, ditto “climate change”. This provides the background, motivation and scope of the report (paragraphs 2 & 3). Paragraph 4 starts with a conclusion regarding the current state of research and expertise in the UK and the remainder of the abstract gives an overview of recommended actions for the future.
- Introduction (p. 9-12). The context and importance of the disciplines reported on are put into context, followed by a summary of the two preceding reports and any targets that have been met since then. Scope of the present report is defined. Acknowledgements to assisting persons and institutes are made.



- Body (13-39)
 - *Review* of the role of systematics research in informing on issues such as biodiversity, invasive species and climate change (pp. 13-16), health of the discipline (number of professionals, volunteers etc) (pp. 17-26) and an update on tools and technology (pp. 27-32)
 - Conclusions and recommendations are explicit: “As we noted in our 2002 report, it is crucial that...”, “The Committee believes that...it is therefore, in our view, critically important...”, “we welcome...”, “we consider that, as a matter of high priority...”, “we recommend” “we encourage” and “we urge”. These are found at the end or within subsections of each chapter.
 - *Funding* (p. 33-34), this is also interspersed with specific conclusions, identification of gaps (room for improvement) and recommendations: “The approach of ... to funding taxonomy appears confused. We invite ... to make a clear statement setting out its approach to the funding of taxonomy.” “We are concerned about the future of the...given its significance to the stability of...”
 - *Government awareness* (p. 36-39), organised as an overview followed by details of activities in different governmental bodies.
 - *Two tables* were used to summarise information and *three boxes* were used for definition of concepts.
- Conclusions and recommendations from each of the chapters set out in full in the form of a bulleted list (pp. 40-43)
- Appendices (p. 40-56). I: Members of the Science and Technology Committee and a declaration of their interests. II: List of people or institutions who gave evidence. III: The questionnaire that was sent out to witnesses. Their answers form the basis for evidence. IV: Executive summary of symposium held as part of evidence gathering phase. V: List of acronyms and abbreviations.
- As a separate part at the end, written and oral evidence from experts in the field, upon which this report was based, are presented (p. 1-324)
 - Oral evidence (with contributors listed and separated into different sections depending on institute) (p. 1-186)
 - Written evidence (with contributors listed and their contributions presented one by one) (p. 187-324)

E) References

Booth, W.C., G.G. Colomb, J.M. Williams (2003): The craft of research. Second edition. The University of Chicago Press, Chicago, 329 pp.