

ΤΜΗΜΑ ΓΕΩΛΟΓΙΑΣ ΚΑΙ ΓΕΩΠΕΡΙΒΑΛΛΟΝΤΟΣ

ΠΜΣ –Ειδίκευση ‘

"Ορυκτοί Πόροι - Πετρολογία και Διαχείριση Περιβάλλοντος"

**“ ΟΠΠ-Ε08 ΜΕΘΟΔΟΛΟΓΙΑ ΕΡΕΥΝΑΣ ΚΑΙ
ΣΥΝΤΑΞΗ ΕΠΙΣΤΗΜΟΝΙΚΩΝ ΚΕΙΜΕΝΩΝ ”**

ΔΙΑΛΕΞΗ 3

“Presenting your Findings”

ΚΑΘΗΓΗΤΗΣ ΣΤΕΦΑΝΟΣ ΚΙΛΙΑΣ

2021

Presenting Findings

- Once research is complete and you have your answers then you have to tell the world (or at least your dissertation examiners) .
- Scientific writing needs to reach it's target audience so its needs to grab and maintain the readers attention- try to keep this is mind – am I likely to bore the reader to death

Papers

- are the most important form of scientific writing
- It is how your work is accessed by the wider scientific community
- It is what you are remembered for
- It is how your performance as a scientist is judged.
- Aim high

Papers

- Papers are peer reviewed, your first set of critics
- Your work will be judged from the moment it is submitted
- The more popular your field, the more people will read it
- The better the research the more people will cite it.

Papers and your dissertation

- Read lots of papers.
- Your dissertation or practical write up writing **style** should be like that in papers
- Scientific writing is expected to be clear, concise, and straightforward.
- <http://www.biochem.arizona.edu/marc/Sci-Writing.pdf>
- <http://www.uefap.com/writing/feature/featfram.htm>

Introduction to academic writing: writing a publication

- Writing publications, essays and dissertations requires technical skills, such as producing appropriate structure and style, with conciseness and clarity.
- It is usually formal, intended for a critical and informed audience, based on closely investigated knowledge, and hypothesises ideas or arguments. It usually circulates within the academic world, but the academic writer may also find an audience outside via journalism, speeches, pamphlets, etc.
- (wikipedia definition: http://en.wikipedia.org/wiki/Academic_writing)

Good academic writing

- it has one central point or theme with every part contributing to the main line of argument, without digressions or repetitions.
- Its objective is to inform rather than entertain.
- Academic writing is to some extent:
- **complex, formal, objective, explicit, hedged,** and **responsible**. It uses language **precisely** and **accurately**.
- <http://www.uefap.com/writing/feature/featfram.htm>

Good academic writing

- **Complexity**
- Written texts are shorter but have longer, more complex words and phrases
- ‘We took 40 different soil samples from every bit of the field we wanted to study and when I got back to the lab that afternoon I dried them in an oven at 105 degrees until they stopped losing weight. This took until the following afternoon’
-

Good academic writing

- **Formality**
- Academic writing is relatively formal. In general this means that in an essay you should avoid colloquial words and expressions, abbreviations, two word verbs.
- ‘Due to a cock-up in the gas syringe sampling the first time round we didn’t seem to have any methane in our gas sample tubes. The next time around and for the rest of the experiment every thing was OK’

-

Good academic writing

- **Precision**
- In academic writing, facts and figures are given precisely.
- A bunch of oil degrading microcosms were setup comprising beach sand, crude oil and nutrient stock solution.

-

Good academic writing

- **Objectivity**
- Nobody wants to know what you "think" or "believe". They want to know what you have studied and learned and how this has led you to your various conclusions based on your lectures, reading, discussion and research and it is important to make this process clear by citation.
- A reader will normally assume that any idea not referenced is your own. It is therefore unnecessary to make this explicit. Don't use "I", "me", "myself".

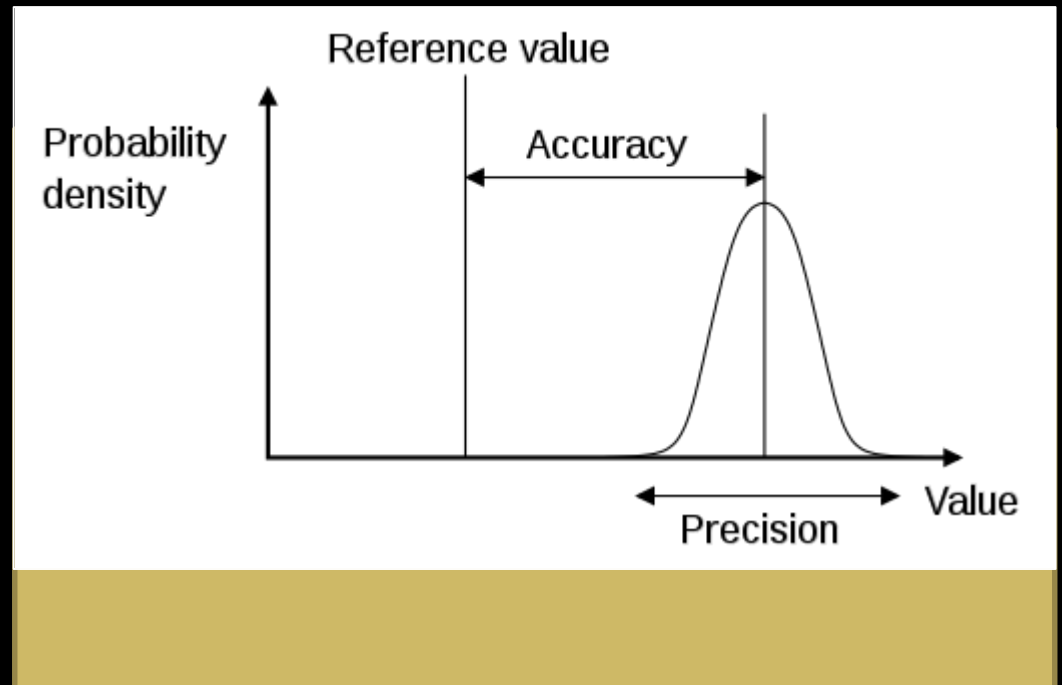
Good academic writing

- **Explicitness (σαφής, ρητός, κατηγορηματικός)**
- make it clear to your reader how various parts of the text are related to each other in terms of scope, flow and source. These connections can be made explicit by the use of different signalling words and phrases.
- E.g. For example, however, alternatively, From a different perspective, because, as shown by

Good academic writing

- **Accuracy**
- In academic writing you need to be accurate in your use of vocabulary. Do not confuse, for example, “significant” and “large” or indeed “accuracy” and “precision”

precision and accuracy can be synonymous in colloquial use but in science not so

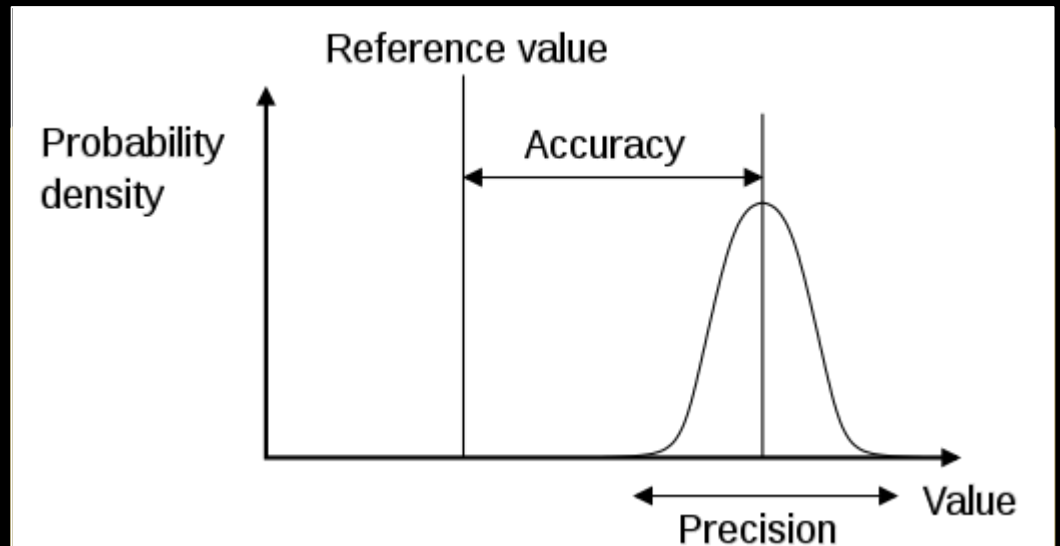


Good academic writing

- **Accuracy**

- In the fields of science, engineering, industry, and statistics, the accuracy of a measurement system is the degree of closeness of measurements of a quantity to that quantity's actual (true) value.[1] The precision of a measurement system, related to reproducibility and repeatability, is the degree to which repeated measurements under unchanged conditions show the same results.[1][2] Although the two words precision and accuracy can be synonymous in colloquial use, they are deliberately contrasted in the context of the scientific method.

precision and accuracy can be synonymous in colloquial use but in science not so



Accuracy is the proximity of measurement results to the true value; precision, the repeatability, or reproducibility of the measurement

Good academic writing

- **Hedging (ΔΕΝ αοριστολογώ, ΔΕΝ υπεκφεύγω, ΔΕΝ “μασάω τα λόγια μου”)**
- is the important concept of cautious language, often called "hedging" necessary to indicate the strength of the assumption, argument or conclusion.
- E.g. may be, might, appears to be, should, could, on the balance of probability, equivocally.....

Good academic writing

- **Responsibility**
- In academic writing you are responsible for demonstrating an understanding of the source text. You must also be responsible for, and must be able to provide evidence and justification for, any claims you make.
- See earlier notes on plagiarism and citation

Dissertation

- Culmination of your MSc.
- Essentially a large paper i.e. a similar structure but with more scope for presenting project development and if necessary negative results
- It is also a verification of your learning and your ability to apply your knowledge.
- It is not enough to just to show data your must apply reasoning to what the data means or does not mean in the wider context (“critical thinking lecture”)

Dissertation structure

- Format and structure for dissertations **Do read!**
- **Length** 50-100 pages

To include:

- Title page
- Declaration (its all my own work honest!)
- Acknowledgements
- abstract (< 250 words)
- Contents
- Key words
- Intro, aims and objectives

- Methods
- Results
- Discussion
- conclusions
- Future work
- Summary
- References
- Appendices

Dissertation tips

- Interest, inform, and persuade the reader
- Write with your reader in mind (e.g. will they know what you know or need additional help)
- Eliminate unnecessary redundancy (περιττολογία, πλεονασμός)
- Avoid digressions (irrelevant details to fill space, or anecdotal (based on or consisting of reports or observations of usually unscientific observers) information)
- Don't over explain (unnecessary qualifiers)
- Use consistent tenses (mostly past..research was carried out). Present tense is correct for statements of fact (NaCl dissolves in water)
- Simpler words better than complex words (sophistry-the use of reasoning or arguments that sound correct but are actually false)
- Simpler sentences are preferred over more complicated sentences (imagine reading it out loud and whether you would run out of breath)

Dissertation tips

- Use the passive voice (especially in methods)
 - . Experiments were carried out to**not** I carried out experiments to....**This is science not politics or PR**
- Make sure the subject and verb agree
 - The fire-fighter rescued the driver and an ambulance took him to the hospital. **Who went to hospital?**
- Avoid use of the indefinite "this" unless 'this' is clearly described in the same sentence
- Avoid slang, jargon and colloquialisms
- Cite sources (see next few slides)
- Proofread your paper carefully; spell check does not catch everything;
 - "there" is spelled correctly but not if you meant "their"

Methods

- From Dissertation Guidelines
- “Routine, but important, descriptions of procedures (with references to appropriate sources). Sampling strategies should be described, explained, and assessed. Summary tables or figures showing analytical schemes are helpful. Comment on any specific unusual details, modifications, adaptations, or problems of the techniques applied, and their influence on the data. Comments on the standards used, and their applications, and the reproducibility, accuracy, and precision of the analytical data. Definitions of parameters used and their units of measurement.”
- Basically look at how others have presented their methods and copy style but not content

Referencing

Why?

- to satisfy the enormous ego's of academics
- to provide the source of specific data, observation, theory, or opinion that you have mentioned in your text (**prove statement not made up**)
- To make a comparison, or refer to sources that, by analogy, support your case, but which do not refer specifically to your own study or material

Referencing

- you should **NOT** cite anything which you have not personally read (the relevant part, at least)
- Always try to use original sources wherever possible, not just cite general reviews which can help locate original works
- You do not need to cite multiple sources for any particular point unless they give significantly different perspectives, or you want to indicate a consensus, or to give a range of examples

Referencing

- try to put your citations at the ends of sentences or at least clauses ending in semi-colons
- Avoid citing unpublished theses if the key points contained therein have been subsequently published (Peer reviewed is best)
- Use ANY referencing style, BUT BE CONSISTENT

citations in the text of your dissertation or thesis

- **1 author:**
 - CEGS is wonderful (Gray, 2010).
 - Gray (2010) says CEGS is wonderful.
 - Gray's (2010) opinion was that CEG was wonderful.
- **2 authors:** CEG is wonderful (Gray and Head, 2010).
 - Gray and Head (2010) say CEGS is wonderful.
 - Gray and Head (2010) claim that...
- **3 or more authors:**
 - CEG is wonderful (Gray *et al.*, 2010).
 - Gray *et al.* (2010) say CEGS is wonderful.
 - Gray *et al.*'s (2010) study showed that...

Note that *et al.* is an abbreviation of *et alia* ("and others")

citations in the text of your dissertation or thesis

- When citing more than one source for a given point, separate the sources by a semicolon, e.g. (Gray, 2010; Head, 2010). If the same authors (or first author if more than 2) use just a comma between the years, e.g. (Gray, 2009, 2010)
- Order the multiple references in text in chronological order

Citations lists

- the 2nd and subsequent lines of each reference should be auto-indented by 1cm. (use format paragraph function)
- Compile lists in alphabetical order
- alphabetically by 1st Author and then by year; if the 1st author and year are both the same in 2 or more references, order papers with 2 authors before papers with 3 or more authors, and use a and b to distinguish those of each category published in the same year (1994a, 1994b).

- **(a) Two authors, and an edited volume:**

TYSON, R.V. & PEARSON, T.H. 1991. Modern and ancient continental shelf anoxia: an overview. *In: TYSON, R.V. & PEARSON, T.H. (eds) Modern and Ancient Continental Shelf Anoxia, Geological Society of London Special Publication, 58, 1-24pp.*

- **(b) Multiple authors, and an ordinary journal paper:**

FARRIMOND, P., COMET, P., EGLINTON, G., EVERSHED, R.P., HALL, M.A., PARK, D.W., & WARDROPPER, A.M.K. 1984. Organic geochemical study of the Upper Kimmeridge Clay of the Dorset type area. *Marine and Petroleum Geology, 1, 340-354.*

- **(c) Single author and a symposium volume with no editor, unpaginated chapters:**

WHITAKER, M.F. 1984. The usage of palynology in definition of Troll Field geology. *In: Reduction of Uncertainties in Innovative Reservoir Geomodelling, 6th Offshore Northern Seas Conference and Exhibition, Stavanger 1984, Norsk Petroleumsforening, Paper G6, 44pp.*

- **(d) Two authors, and a second edition of a book:**

TISSOT, B.P. & WELTE, D.H. 1984. *Petroleum Formation and Occurrence. (2nd Edition), Springer, Berlin, 699pp.*

- **(e) Webpage with no identifiable author, organisation only:**

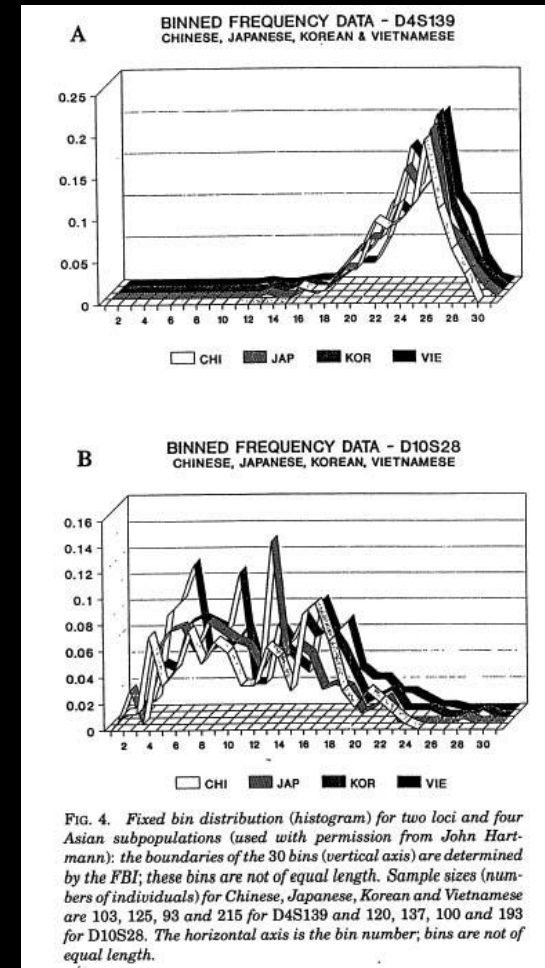
MASSACHUSETTS INSTITUTE OF TECHNOLOGY, EARTH ATMOSPHERIC AND PLANETARY SCIENCES. 2005. About biomarkers. <http://www-eaps.mit.edu/geobiology/biomarkers.html> Accessed 12/07/07.

Use of Figures

- Good figures replace a 1000 words
- Bad pictures may mislead (deliberately?), confuse or simply send the reader to sleep

Roeder K (1994) DNA fingerprinting: A review of the controversy (with discussion). *Statistical Science* 9:222-278, Figure 4

Worst figure in a scientific paper selected by Dr Karl Broman University of Wisconsin-Madison



Use of Figures

- Always refer to a figure in the text.
- All figures need a number and a title
- Figures should only contain data relevant to a given question (not all results in one)
- Furthermore, pages of figures are pointless and boring (e.g. **death by chromatogram**)
- Make sure that the content of the figure is clear from the title and the key
- Always put text with the figure.

Conferences

- Conferences are where you get to meet other researchers and discuss your work
- Networking
- New opportunities (jobs)
- New ideas
- New research
- New funding

Posters

- Posters are the most common way to present your data at conferences (especially your first)
- Posters are a heavy investment (miniature paper)
- They take a long time to write and are often only read by people in your field
- They require you to be an graphic designer
- Take A4 prints of the poster to hand out during the poster session

Oral Presentations

- As your career progresses will be asked to give more and more presentations both as an academic and in industry.
- You may never take another exam but you **WILL** give dozens of presentations.

Oral Presentations

- Everyone is nervous
- Good slides don't contain too much information
- Graphics are clear and annotated
- It is better to have a boring layout than one that is hard to read
- How many slides you use is down to you personal style
- Get the timing right.