

Brief guidance note for the writing of a synopsis or 'kappe' of a PhD thesis

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Why this note?

Upon request of MINAs PhD students, and after discussion in the PhD program committee plus a rapid survey of the internet and a screening of 10 recent MINA PhD theses, I have compiled a brief list of practical points of advice to MINAs PhD students. No doubt it can be useful elsewhere, and most likely others have produced something similar. There is little reason in discussing the necessity or mere existence of this synopsis, at least in our Norwegian context. We have to by law. Your alternative is writing a full monograph, or book, which is completely 'de novo' and does not contain any previously published papers in scientific journals. The formal text in section 10 of NMBUs rules reads as follows (copy-paste):

'If the thesis consists of several shorter papers, it must also contain an introductory chapter which summarises and compares the research questions and conclusions presented in the shorter works in an overall perspective, and which also documents the coherence of the thesis.'

The current note is accompanied by an essay by Haara & Smith (2011), which I translated into English and annotated with some personal comments. The 'tips' below are numbered, but that is only for the ease of referencing, it does not imply importance.

Tips

1. Length. This is the most frequent and simplest question: length is not very important. Not too short, please, and not too long either, whatever that may mean. My sample of 10 had a mean of 49 pages, but considerable variation (37-77). Obviously the number of pages is a function of page size, margins font type and line distance. There is considerable freedom in the lay-out and fonts you choose, but there is also clear advice from NMBU. Do not deviate too wildly from the style sheet suggested.
2. English: write simple English, use short direct sentences, and simple plain words. Do not try to show off your excellent mastery of this language, because that should not be your goal. Keep away from stoppers like 'Moreover, blablabla'.. But one can write many pages on writing style, and that is not the goal here.
3. Synthesis. This is the main objective of the synopsis. Try to write a synthesis that gives an overview, and pulls together the threads, which you have set out in the beginning when you described your 'private' problem in a larger setting of practice, previous work and theory (all three). Ask yourself 'What does this all mean?', and 'How do my papers actually relate to each other?' In this synthesis, or somewhat earlier, come back explicitly to your main questions (I wrote pull the threads together), and here you may add nuance to the conclusions from the individual chapters. See whether you can adjust

the generalizations from literature (that meta-analysis above) and come with something new. If you have found the axe to finally cut down an existing theory, do it here, but do it gently, they may come after you.

4. Structure/table of contents. The paper by Haara & Smith (2011) describes how the first author has struggled with the issue of structure, and they come with a sensible list. The 10 theses I reviewed all had some variant of that list: [introduction to the problem], [review of the place of your work in the wider research field], [theory/central concept], [methods used], [main findings], [meta-reflection/grand discussion].
5. Coherence among the different separate papers. Describe in text and support this if you wish with a simple boxes-and-arrows flow scheme (I like it, many research proposals have something similar – remain simple please). If the main theory you work from has a standard graphic, consider to include it or revise and indicate which corner is particularly yours.
6. In one of the first introductory sections, create a small (or large if you wish) ‘meta-analysis’ table covering the background literature for your main research questions (as quantitatively as possible – that is the advantage of meta-analysis). This can nicely support your objective/hypotheses. The table may well have narrative, qualitative elements.
7. Be concrete in your future outlook, a section that often comes towards the end. You may speculate here, as long as you warn us that this is speculative or extrapolation. Do not be afraid to write the obvious if that is an important consequence of your findings.
8. The synopsis is a good place for overview maps (abstain from irrelevant detail but add N arrow and scale bar), for illustrative photos of your landscape or equipment, sampling gear or experimental set up or similar. This helps your audience understanding what you worked with. Also your individual chapters may well have been slimmed down greatly on method, whilst method was actually very important. Then spend some synopsis space on this particular method. Flow schemes can also be very helpful, for example when samples or mapping layers have gone through complex processing steps.

Reasons for rejection

Fortunately, only few doctoral theses are judged insufficient by the evaluation committee, but this did occur over the past years. It may be insightful to consider the reasons for this. I have collected 4 comparatively recent cases, and one of them has been rejected twice and thus has not been defended at NMBU. The other improved their work sufficiently so that their thesis was approved for defense, which then went accordingly. I have anonymized these cases, and paraphrased the judgment of the evaluation committees below in Table 1.

One simple take-home-message: take care that the reviewers have no reason to get irritated with spelling, wrong references and sloppiness, this may be just that little drop toppling their

verdict. With other words: have all you can do about the form in tip-top order. As most of us know but may not practice in reality: reserve enough time in the end so that someone fresh (and capable to be constructive yet critical) reads through the whole synopsis. A second important message is that if a committee judges revision, this is accompanied by a clear advice, which, when clearly followed-up, will generally convince the committee that the thesis can be defended.

Table 1. Brief paraphrase of the judgment of 4 theses that were rejected by the review committee.

A	Two important inferences made from the data were actually not supported by the papers and data therein. The committee queried therefore conclusions and interpretations. The candidate performed additional experiments and rewrote parts of the synopsis so that this criticism could .
B	The synopsis was found too brief on method and results, and the discussion was found repetitive. A reflected critique of the method used (important in this work) was lacking. In addition, the thesis abounded with a large number of each by themselves minor typographic errors, sloppiness and vagueness in writing. The candidate did a considerable revision, which was then accepted for defense.
C	One thesis was rejected twice because the synopsis (11pp) lacked balance and overview in putting the environmental problem in perspective, it lacked a view on the applicability of what was tested in the experiments. The revision was reviewed by a new committee, which judged that the thesis still lacked both width and depth in too many aspects, it lacked a proper statistical analysis and was plagued by an overall sloppiness in internal cross-referencing, literature coverage and citation, as well as an unprecise use of terms.
D	This thesis was found not ready for defence even though the synopsis contained a structural outline of the work, had a satisfactory description of methods and individual conclusions. However, the committee had the following main concerns: (a) an inconsistent and apparently random use of terminology and concepts, (b) the omission of an important body of literature, and (c) serious methodological concerns: the lack of appropriate controls and the absence of proper statistical analysis. Based on the second review, it appears that the candidate improved on the first two points, but could not redo the experiments with different controls and apparently only partly met the statistical criticism (reported standard deviations, but still no tests).

Further reading

I would say, try to start writing and sketching your own structure with a fresh view, but if you want to read more, then start with this paper by Haara & Smith (2016), because it describes his struggle and gives some overview. Obviously, it is useful to compare a few theses and discuss these with your supervisor.

In addition I have always liked a somewhat cynical chapter in a book by the late Robert Peters (1991, a critique for ecology) on how to construct a paper. I can send you a pdf of the chapter or lend you the book. The book including this chapter has been criticized as too much text for the content and unbalanced, but I liked it (review by Beal et al, 1993. *Limnol & Oceanogr* 38, 1344-1346). Something similar is available by Tony Patt (2013, 'Zen and the art of paper writing', what a creative title). If you have difficulties writing, however, there is only one way: practice, reading more on writing is not very helpful. NMBUs writing center offers nice, zero-threshold training on writing. Consider to drop in there. Well-developed writing skills will be helpful to you in many years to come, whatever unknown technological breakthroughs will surprise my or even your generation.