Article-based dissertation & co-authorship

GS PhD pizza session
March 28, 2018

Theo van Tilburg
Faculty of Social Sciences
Academic Director Graduate School
Dept. of Sociology
Vrije Universiteit Amsterdam
Theo.van.Tilburg@vu.nl
VU Graduate School
PhD Pizza Session

‘Co-authorship’

Theo van Tilburg and Thijs Sunier will talk about co-authorship and the structure of the dissertation. Do you write several articles or a book? What ethical issues are related? Etc.

Wednesday 28 March 2018 17:00-18:30
Venue: HG-1443s

To make sure there are enough pizza’s for everyone, please let us know if you attend before 27 March (send an email to: graduate.school.fsw@vu.nl)
• The Dissertation demonstrates the PhD candidate’s ability to carry out independent academic research.

• The Dissertation shall consist of either a single academic discourse on a given subject or a collection of a number of separate academic articles, all or part of which have been published, on condition that these separate articles demonstrate sufficient cohesion in relation to a specific subject.

• If the Dissertation consists of a collection of articles as referred to in the second paragraph, then the required coherence between the articles is to be made explicit in an introductory and/or concluding chapter.

• If the Dissertation consists of a collection of articles as referred to in the second paragraph, then the PhD candidate’s contribution to each article should be adequately demonstrated.
Assessing the quality of dissertation
- FSS VU
- Wageningen
- Groningen
FSS Attainment Levels (1)

With respect to content, theory building and application, the PhD candidate:

• Has advanced knowledge and understanding of (recent) theoretical developments in the area of expertise of his/her dissertation;
• Has made a significant, original, and coherent contribution to scientific knowledge within his/her major discipline that can pass peer review;
• Has broad knowledge and understanding of the general field of social sciences and possesses the ability to relate and position the work in his/her dissertation work vis-à-vis this broader field.

Nothing on dissertation ‘form’ or collaborating /w co-authors

Source: current FSS form - evaluation by Supervisor
FSS Attainment Levels (2)

With respect to research design and methodology, the PhD candidate:

• Has demonstrated the ability to choose and apply appropriate methods and analytical instruments (e.g., research design, data collection, measurement, analysis techniques) to answer particular research questions;

• Has demonstrated advanced knowledge and understanding of the specific research design(s) and methods used in his/her dissertation research, the ability to relate these to alternative research methods within the social sciences, and analyze their applicability, strengths and weaknesses in specific circumstances.

Source: current FSS form - evaluation by Supervisor
FSS Attainment Levels (3)

With respect to academic skills, the PhD candidate:

- Has demonstrated advanced writing skills to independently write scientific texts and articles that can pass (inter)national peer reviewed evaluation;
- Has demonstrated the skills to orally present scientific research at (inter)national seminars and conferences;
- Has demonstrated the skills to function as a full member of the scientific community (e.g., ability to collaborate in research teams; discuss, evaluate and design scientific research; deal with and conduct peer review of scientific articles);

Source: current FSS form - evaluation by Supervisor
FSS Attainment Levels (4)

• Has demonstrated the skills to contribute to the valorization of scientific knowledge by communicating about his/her area of expertise to a broader (academic) community and/or by explaining its value for society in general and/or by teaching undergraduate students;

• Is knowledgeable of the prevailing standards of scientific integrity, research ethics, and proper scientific behavior, is aware of prevailing codes of conduct to prevent integrity violations, and follows these norms for proper scientific behavior in his/her own research practice.

Source: current FSS form - evaluation by Supervisor
Evaluation of the candidate’s independent contribution to the dissertation

- Please indicate concretely which parts of the research were conducted in collaboration, and which parts of the dissertation were co-authored, and evaluate the candidate’s own and independent contribution (please add space when needed).

- It is highly recommended that the contributions of the candidate and potential collaborators to each chapter (i.e., to writing, design, analyses, etc) are also indicated in the dissertation.

Potential consideration for granting a cum laude degree

- The undersigned consider(s) this dissertation to rank in the top 5% of the research in the relevant scientific field: yes / no

Source: current FSS form - evaluation by Supervisor
## Rubric Wageningen University (1)

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Unacceptable</th>
<th>Acceptable</th>
<th>Satisfactory</th>
<th>Good</th>
<th>Very good</th>
<th>Excellent</th>
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<tr>
<td>1. Originality of research *</td>
<td>Does not make a contribution, either because it is a copy, or nearly so, of work done before by others, or because the research question is trivial.</td>
<td>Makes a small and not very original contribution, uses a cookbook approach, is not really interesting but shows the ability to do research.</td>
<td>Makes a modest contribution by addressing a relevant, but small and traditional question that is interesting for those who work on the same subject.</td>
<td>Makes a substantial contribution by addressing a relevant question that is interesting for others within the field. Is a solid part of normal science, but does not open up the field.</td>
<td>Makes an important contribution by solving an old problem in a new way, or by addressing a new and relevant question, however without completely exploring and solving that new question.</td>
<td>Makes an exciting, major contribution, either by solving an old problem in a brilliant, innovative way or by asking and answering a new and intriguing question.</td>
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<td>2. Scientific quality of research chapters **</td>
<td>Chapters lack the scientific quality to be publishable in any reputable journal or by any reputable book publisher.</td>
<td>Chapters lack clear cohesion and/or show variable quality. One or two chapters have the quality to be publishable in low-ranking journals or as part of a larger book, but will probably remain uncited.</td>
<td>Chapters have sufficient cohesion and quality to address the research question. Most chapters are publishable in low-ranking journals or by a low-ranking book publisher and may be get cited a few times.</td>
<td>Most chapters are published or likely to be published in reputable journals, and may become cited within the field. If a monograph, the thesis may be interesting for a reputable publisher.</td>
<td>All or most chapters are published or likely to be published in the upper range of journals in the field, likely to become well cited within the field. If a monograph, the thesis will certainly evoke interest from reputable publishers.</td>
<td>All or most chapters are published or likely to be published in top journals in the field, likely to become well cited within and outside the own field. If a monograph, top publishers will like to publish it.</td>
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*See note*
Note on ‘Scientific quality’:

** If the research chapters are multi-authored, it is important to consider the candidate’s contribution to each chapter, in particular when s/he is not the first author. To this end, an authorship statement by the candidate has been added to the thesis manuscript. Also, it’s good to check whether the research chapters show a level of written presentation similar to the Introduction and General discussion. If the research chapters are written in a better way, this may result in a higher grade for the criterion ‘research chapters’ but it suggests an important contribution of co-authors. Thus, a higher grade for the research chapters alone should perhaps not be reflected in the overall grade of the thesis.
Guidelines and requirements for approval of a PhD thesis at the UMCG/RUG

2. Question: - Are there minimum requirements, e.g. regarding the number of experimental and published chapters, or the size of a thesis?
Answer: - The protocol given above, does not mention an obligation to have (parts of) the thesis published and/or submitted/accepted for publication prior to the thesis defense. Also, there are no specific requirements with regard to the number of (experimental) chapters nor the size (the number of pages) of the thesis. However, since the PhD title is given as ‘proof of being an independent researcher’, it is clear that the manuscript should show sufficient indications that the candidate has mastered the entire cycle associated with performing scientific work. This includes the writing and, preferably, publication of research papers. As a rule of thumb the UMCG considers a thesis containing an introduction / outline of the thesis, two published/accepted/acceptable experimental chapters and, preferably, two additional (experimental) chapters as appropriate. However, as said before, in principle there is no absolute requirement for publication to be admitted to the thesis defense, nor for obtaining the PhD degree. A PhD student must finish the manuscript of the thesis within the allotted time period. It is important that a well-written, summarizing discussion should show that the candidate has mastered his/her field of research and is capable of independent, scientific reasoning.
3. Question: - Is there a general guidance regarding the quality of the scientific journals in which articles should be published?

Answer - it is important to strive for publication in high-ranked journals. This also holds for the publications that are included in a thesis. It is better to include experimental data that cannot be published in a high ranked journal in a chapter of the thesis than to publish these in a low ranked journal. To encourage publication in high ranked journals, the Graduate School of Medical Sciences offers financial support in printing costs as an incentive for quality, when at least two of the articles in the manuscript have been published or accepted for publication in the top 25% of the relevant ISI-field in Web of Science. More importantly, the manuscript of a thesis which contains publications in high-ranked journals and which is regarded as being in the quality top 5-10% of theses can be taken as the basis for a ‘cum laude’ application. The procedure for a cum laude application is given in the protocol for the conferral of a PhD as mentioned above. A ‘cum laude’ PhD defense is not a prerequisite, but may be very helpful in starting a scientific career, e.g. as (pre)tenure track fellow at the UMCG.
Do examiner characteristics influence assessment of Norwegian PhD dissertations?

- Experienced examiners more positive than the less experienced
- Regional affiliation have a weak but significant impact on quality assessments; the further away (e.g. USA, UK), the higher the grades
  - Most Norwegian PhD theses comprise three/four papers; might impress evaluators from countries in which this practice is less common
  - Selection effect: external examiners if the supervisor considers the thesis to be very good/excellent
  - Cultural differences between countries: interpretation of concepts such as ‘excellent’ and ‘very good’
- Acquaintance to supervisor(s) matters less than expected

Dissertation based on articles
Form of the dissertation

A PhD is possible via two forms of a thesis:

• A monograph written by the PhD candidate
• A coherent collection of articles (or edited book chapters, or …)

Both are equivalent: one is not considered as better than the other. A form may be chosen depending on

• the nature of the project,
• the preferences of those concerned,
• the terms that are agreed (e.g. with the funding organization),
• cooperation (including cooperation between disciplines), and
• the PhD candidate’s career prospects.
Various prints
## Results of my PhD graduates

<table>
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<th>Year</th>
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p=published; a=accepted; s=submitted; r=rejected; n=not submitted

* Not FSS

Updated 2018
Publishing articles – who ‘profits’?

• Research programs
  Example: SoCA, 2001-2008; 30% of scientific articles = 20% of scientific products are from dissertation

• Supervisors
  Visibility of input and materialisation of research time
  Example: I have 245 publications of which 79/130 refereed articles in journals co-authored with 31 PhD candidates/graduates (I supervise(d) 22 of them)

• PhD graduates
  Cooperation in practice (and finally as ‘equal’ partners)
  Results ‘early’ available (→ conferences, peer review, citations)
  Many VENI-applicants have dissertation with articles
My ‘rules’

• Coherence (article 17) to be addressed briefly in one or two chapters
• No rules for the number of empirical (acceptable) articles, but four is common in social sciences; three is also possible, e.g. /w quality in intro/discussion or extensive data collection
• Depth and breath more important than size/number
• Each phase of publication is acceptable, i.e. published, nearing publication, submitted, close to submission, or rejected for publication
• Demonstrating PhD candidate’s contribution (article 17 regulations)
  – Articles in dissertation are first-authored by the PhD candidate
  – PhD candidate made an essential contribution to the articles
  – Authors and their contribution (i.e., to writing, design, data collection, analyses) are in a footnote
Authors’ contributions: examples

• (general paper) Contributors: DR and LF designed the study. DR and NO did the statistical analyses. DR drafted the manuscript. All authors critically revised the manuscript for important and intellectual content. DR is the guarantor.

• (article in thesis) O. Uysal-Bozkir planned the study, supervised the data analysis, and wrote the paper. T. Fokkema performed some statistical analyses and contributed to revisions of the paper. J. L. Macneil-Vroomen helped in performing some statistical analyses. T. G. van Tilburg performed some statistical analyses and contributed to the final revision of the paper. S. E. de Rooij contributed to revising the paper.

• (chapter not in thesis) Theo van Tilburg designed the chapter. Jolien Klok conducted the literature review and wrote the tekst. Both edited the text.

• Note: first author is mentioned first.
Authors’ contributions: honest, precise!

Chapter 1. Written by Elske Stolte. Several rounds of feedback on the text provided by supervisors Theo van Tilburg and Marja Aartsen. Chapter 2. Written by Elske Stolte. The data used for this article was gathered in a study coordinated by Marijke Hopman. She provided information about the original study and answered questions about the data. She also commented throughout the process on the plans for the article and on several versions of the article. Marja Aartsen advised about the analyses in Mplus which were done by Elske Stolte. Both Marja Aartsen and Theo van Tilburg commented on plans for the analyses and article, discussed these comments with Elske Stolte and commented on all preliminary versions of the article. Astrid Chorus was head of the department of TNO at the time the article was being written and commented on a number of complete versions of the article. Chapter 3. Written by Elske Stolte. Marja Aartsen and Theo van Tilburg provided feedback on the setup of the intervention study, the procedure for ethical approval, choice and development of intervention and study materials throughout the research process and discussed these in meetings with Elske Stolte. Both supervisors also provided several rounds of feedback on the text of the chapter. The website for the intervention was developed by Marcel Noordzij and Vincent Osinga of the VU IT department, content was developed and edited by Elske Stolte. Chapter 4. Written by Elske Stolte. Several rounds of feedback on the text provided by supervisors Theo van Tilburg and Marja Aartsen. Renae Smith Rea and Susan Hughes provided comments on a number of full versions of the article. Chapter 5. Written by Elske Stolte. Analyses performed by Elske Stolte. Theo van Tilburg and Marja Aartsen provided feedback on results of the analyses and the text of the article throughout the process. Chapter 6. Written by Elske Stolte. Marja Aartsen assisted in the cluster analyses in Mplus. Marja Aartsen and Theo van Tilburg provided feedback on results of analyses and text of the article throughout the process. Theo van Tilburg assisted with data preparation and analyses in SPSS. Sanne Bos assisted during the busiest months of the data gathering phase with sending and receiving the mailing of accelerometers, reading out data from the accelerometers, and replying to questions of participants.
Aim: The statement is sent with the thesis manuscript to the opponents to help them judge the candidate’s contribution to (chapters in) the thesis. A PhD study is a learning process, so the candidate is not supposed to have it done all by her/himself. The authorship statement should focus on the candidate’s own contribution. The text is written in the first person. Items to address are usually: research question, methodology, research and data collection, data analysis, text and graphs, and the final discussion.
Chapter 1. The general research question and its general scientific and social perspective were proposed by my promotor. I delineated the research question, described how it fits in the current scientific literature and described its potential social impact. I revised the text two times, after comments of my co-promotor.

Chapter 2 . . . Chapter 3. I contributed to defining the research question, proposed the methodology and the experimental design, carried out the experiments together with an MSc student whom I supervised, and did the data analysis together with the student and a statistician. The student wrote the first draft (therefore, I am second author) and revised it after the comments of myself (which were quite many) and the other co-authors.

Chapter 4 . . . Chapter 5 . . . Chapter 6. I wrote the first draft of the text after just one discussion with my co-promotor on the subjects and arguments to be included. I revised the text once, after comments of my promotor and co-promotor.
How to achieve coherence?

- Dissertation describes developments in project (e.g. pre-study, pilot, final data collection, application); like a monograph, but written as articles
- RQ has several subquestions; e.g., different types of causes (individual, organizational)
- Similar RQ, but variations in design (e.g. survey, qualitative study)
- Research was conducted in several locations, age categories, etc.
  (and combinations of these approaches)
How to conduct?

• Increasing difficulty
  - First article follows existing discussion or design
  - Last is innovative
• Increasing independence
  - First article strongly guided by supervisors
  - Last written by candidate solely; supervisors are colleagues
• Plan sufficient time for handling R&R and resubmission

Consider to submit articles to journal after submission of dissertation
Advantages dissertation /w articles

Advantages

• Doable research questions
• Results early available
• More topics, broader knowledge
• Easier to monitor progress
• Published articles are final
• Final review is predictable
• Experience with peer review
• Recognition role/work supervisors

Concerns

• Forced to have ‘small’ RQs
• Geared towards fast results
• More depth
• Monograph needed in some disciplines
• Early products not matured
• PhD graduate is not central
Authorships – Ethics and practices
• Authorship provides credit for an individual’s contributions to a study and carries accountability. There are no universally accepted standards for assigning authorship. Principles, customs and practices differ significantly from one discipline to another.

• www.research-integrity.admin.cam.ac.uk/research-integrity/guidelines/guidelines-authorship


• Yale: https://provost.yale.edu/policies/academic-integrity/guidance-authorship-scholarly-or-scientific-publications
APA-Ethics Code 2002: Publication Credit

(a) Psychologists take responsibility and credit, including authorship credit, only for work they have actually performed or to which they have substantially contributed.

(b) Principal authorship and other publication credits accurately reflect the relative scientific or professional contributions of the individuals involved, regardless of their relative status. Mere possession of an institutional position, such as department chair, does not justify authorship credit. Minor contributions to the research or to the writing for publications are acknowledged appropriately, such as in footnotes or in an introductory statement.

(c) Except under exceptional circumstances, a student is listed as principal author on any multiple-authored article that is substantially based on the student's doctoral dissertation. Faculty advisors discuss publication credit with students as early as feasible and throughout the research and publication process as appropriate.

Defining the role of authors and contributors

• Why authorship matters
• Who is an author? (all criteria are required)
  – Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work;
  – Drafting the work or revising it critically for important intellectual content;
  – Final approval of the version to be published;
  – Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.
• Non-author contributors: who meet fewer than all four criteria for authorship should not be listed as authors, but they should be acknowledged.
• www.icmje.org/recommendations/browse/roles-and-responsibilities/defining-the-role-of-authors-and-contributors.html
Placement of authors' names

Clinical investigation

- First author: Did the study, evaluated the data, and wrote the paper
- **Last author:** Planned and supervised the study and the writing of the paper
- Other authors: Participated substantially by either doing or supervising any stage of planning, execution, data analysis, or writing


**Social sciences:** PhD candidate is first author, PI or main contributor is second, decreasing contribution for third and following author
Determining and negotiating authorship

- Frequent communication and a dynamic approach can help minimize disagreements
- Why authorship matters to you
- Negotiating authorship as a dynamic process
- Disagreements over allocating authorship
- www.apa.org/science/about/psa/2015/06/determining-authorship.aspx
Publishing articles from the thesis - plagiarism

• Normally, thesis chapters can be (and often are) published as articles in scientific journals after the defense, but more and more journal editors reject such manuscripts when anti-plagiarism software has detected that the text is part of the online available PhD thesis in the library.

• Such problems can be avoided:
  – By clearly stating in the submission letter and in the article’s acknowledgements and reference list that the article was part of a publicly defended PhD thesis.
  – By asking the library to put the thesis under embargo.

• The latter option is the safest, but it doesn’t serve the progress of science.
A PhD candidate indicates per chapter

1. No embargo (thesis published 28 days before graduation)
2. Embargo, PhD candidate chooses publication date (6 months, 1 year, 2 year, fixed date after publication article)
3. Embargo if chapter not yet published (6 months, 1 year, 1.5 year after graduation)

The candidate receives a reminder two weeks before a chapter is published.
Answer to an editor (Wageningen)

• Example of answer to an editor after rejecting the manuscript because of plagiarism (by Marc Verdegem)

• “The manuscript is part of a PhD thesis of ... University. After the thesis defense, the full thesis is made available on-line. A PhD thesis is a compilation of minimum four peer-reviewed manuscripts of which most will be published after defense. I think ‘Ithenticate’ picked up the on-line thesis. I contributed to the writing of the manuscript and can testify that the text and work is original. Putting PhD theses online is common practice in Europe. Proceeding with publication in a peer-reviewed journal after the thesis defense is broadly accepted and not considered plagiarism. Considering the above, I ask you to reconsider your decision and allow resubmission of the manuscript.”
Thanks! Questions?
Theo.van.Tilburg@vu.nl