

## **Workshop: Intellectual and formal standards of scientific work** in the fields of law, social sciences and related sciences

### **I. Introduction**

1. Scientific standards and other standards for scientific work
  - scientific standards (intellectual and formal standards), legal standards, ethical standards
2. The reasons for scientific standards
  - to fight for progress, to search new discoveries and a deeper understanding
  - to use reliable methods that will bring significant, meaningful results
  - the principles of transparency, traceability, reproducibility and verifiability
3. The authority to define scientific standards
  - authority based on competence: the community of scientific peers
  - authority based on hierarchy? The problem of (often questionable) standards defined by binding regulations of faculties, institutions of higher education, academies of sciences or ministries
4. Scientific standards and scientific conventions
  - *scientific standards* derive from the principles of scientific work and therefore are *absolutely binding*
    - any violation may render your work useless
    - they are also binding if not prescribed by your institution's regulations or even contrary to them!
  - scientific conventions are non-binding common practices that have emerged in a limited context and therefore may vary from time to time, country to country, discipline to discipline or even editor to editor
    - examples: patterns of division and subdivision, the way to present the bibliographical data in footnotes, the order of the accompanying parts within the monography

### **II. Intellectual standards of scientific work**

1. Standards of intellectual authenticity and originality
  - a) Intellectual honesty
    - *no copying or leaning on without quoting!*
    - no presentation of information gathered by other authors as the result of your own work
    - no presentation of other authors' reasoning as your own thoughts
      - inform about the reasoning of others and indicate precisely, to what extent you are following it
      - spectacular cases and the rigorous fight against plagiarism in Germany 2011/12 (see workshop website)
    - no quoting without own reading
      - in particular not of sources in foreign languages that you do not understand
    - no hiding of inconvenient theories or positions
  - b) Intellectual independence
    - independent dealing with scientific literature (and jurisprudence)
      - do not just report but analyse, classify, categorize, contextualise, assess and evaluate it
    - independent reasoning
      - follow your own personal way of thinking and develop your own approach without regard to "authorities"; build up your own complex system of thoughts and arguments in your thesis; enjoy academic freedom but with regard to academic responsibility
      - consider, integrate and modify but do not just copy the arguments of others

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- c) The need for a scientific added value
- no successful scientific work without new scientific findings
  - the scientific added value of a thesis will vary according to
    - the category of the work (journal article, master/doctoral/habilitation thesis)
    - the type of scientific objective (scientifically-based practical solutions, new theories for a better understanding, transfer and adaptation of foreign solutions, critical inventory of the state of science etc.)

## 2. Standards of intellectual accuracy, consistency and precision

- a) Accurate information based on observations, empirical studies and references
- **every single information** in your text, **which is not evident, must be substantiated** by a well-documented observation (measurement results, photos, detailed descriptions etc.), sound empirical studies (complying with the demanding rules of empirical evidence) or a precise and accurate reference allowing to verify it.
  - check carefully every single sentence in your publication if it requires a footnote!
- b) Logically and dogmatically consistent structure
- aa) The importance of the structure for the quality of the scientific work (in particular of a thesis)
- the structure reflects the ability to think correctly and precisely
  - a scientific thesis is like a "house of cards": one gap or flaw in the reasoning might make it collapse
  - a convincing, consistent structure allows an easy access to your reasoning and may conceal shortcomings in your argumentation; a defective structure leads a skilled reader directly to the weak points
  - a longer text must be structured in detail (no long sections without subdivisions)
- bb) The standards of a logically consistent structure
- no dealing with sub-subjects at the same level as the main subject
  - no introduction of a new subordinated level if there are not several subordinate points
  - the need to mark any remarks outside the line of thoughts as "excursus"
- cc) The standards of a dogmatically consistent structure in legal science
- the structure must strictly follow the dogmatic structure of the relevant field (or sub-field) of law as it is understood by the author
- dd) Standards for correct headlines
- headlines must make the line of thoughts transparent and prevent misunderstandings
  - headlines must reflect the content precisely and in the correct context
  - systematic coherence, in particular homogeneity of the headlines at the same level
- c) Transparent, precise and logical reasoning in accordance with the methodology of the discipline
- indicate which scientific method is applied in which context with which result
  - justify the chosen method if it is not generally acknowledged
  - indicate subjective elements in your reasoning (they are often unavoidable but must be disclosed)
  - reason as precisely as possible, taking into account all relevant differences and distinctions
  - *do not violate the laws of logic* (→ absolutely inadmissible in scientific work!)
    - a widespread mistake: presenting logically possible conclusions as logically compelling conclusions
- d) Intellectual coherence
- use of a coherent terminology (which you may first have to develop)
  - coherent use of the scientific methods
  - coherence and consistency of the developed theories and positions

## 3. Standards of intellectual thoroughness

- a) Comprehensive consideration and appreciation of all relevant literature (and other relevant sources)
- complete consideration and appreciation of all literature on the subject
    - *every single publication* that directly deals with your subject must be mentioned and discussed; this may lead to a high number of footnotes
    - important *foreign publications* must be discussed if the problem or situation in the foreign country is comparable and the same arguments and counterarguments can be effective
  - adequate consideration and appreciation of literature on basics and backgrounds
    - in particular of *fundamental theories* in the field if they may have an impact on the research
    - this standard varies considerably according to the category of the work (journal article, master/doctoral/habilitation thesis etc.)
- b) Comprehensive discussion of all relevant aspects and arguments
- consider every single aspect mentioned in literature (or jurisprudence) or evident from the studies (→ the need for a *multi-perspective approach*)
    - if the workload is too high narrow the scope of your research!
  - consider all presented arguments - those difficult to rebut must not simply be ignored...
  - consider all aspects with all their connections at the same time (→ need for a *well-balanced approach*); this may lead to a high degree of complexity of your argumentation

- c) Getting to the bottom of the questions...
  - foresee (or even discuss in advance) possible objections (including those which might appear absurd)
  - consider all possible consequences of a potential solution in advance (and check compatibility with ethical standards)
- d) The problem to ensure intellectual thoroughness in the limited scope of a journal article
  - you may not have enough room to mention and discuss all relevant literature in your text but you still must consider it all in your mind...
  - the problem can be reduced by strictly limiting the scope of the research

### III. Formal standards of scientific work

- Regarding formal standards there are no differences between the various categories of monographies (master/doctoral/habilitation thesis etc.) since these standards do not depend on the scope or dimension of the research. However, your institution's regulations may oblige to follow certain formal conventions for certain types of thesis.

#### 1. Introduction

- a) Formal standards as a *requirement of intellectual honesty, accuracy and precision*
  - not an end in themselves...
- b) The principles guiding the formal standards in scientific work
  - allow easy *orientation*, avoid misunderstandings
  - provide quick and easy *access* to available information
  - allow quick and easy *verification* of the correct understanding and use of the information
  - present the positions of others in any context as *accurate* as possible
- c) Variations in the formal standards depending on the discipline and the national scientific culture
  - aa) The existence of variations in the formal requirements of scientific work
    - different requirements in legal science, political science and economical science
    - different requirements in different countries
    - different requirements in different languages
  - bb) The need to justify variations in formal scientific standards
    - universality or relativity of scientific standards?
    - scientific standards as part of cultural heritage?
    - specific standards or just habits (conventions) of the national or disciplinary tradition?
  - cc) The necessary limits to variations in scientific standards
    - different traditions or cultural backgrounds cannot justify deviations from the requirements of science
    - unprecise or unaccurate quoting is always unscientific - in any discipline, country or language...
- d) The problem of unreasonable standards dictated in official regulations
  - a serious problem if the official standards collide with internationally recognized standards of science
  - in the worst case a doctoral student needs to prepare two versions of his thesis: one to comply with the faculty rules and one for publication
    - example: a strict page limit does not allow the necessary comprehensive discussion of all relevant national and international literature or makes it necessary to delete an essential historical overview
    - don't publish the crippled version of your thesis - you may damage your scientific reputation!
  - any official standards not justified by the requirements of science violate the freedom of science
- e) How to meet formal standards easily
  - learn the standards *at the beginning* - subsequent corrections may cause considerable delays and costs
  - use preformulated text blocks for the citation of statutes, important books and court decisions
  - use generally acknowledged aids (e.g. official lists of abbreviations)

#### 2. The formal structure and the composition of the scientific work

- a) Overview
  - different conventions in different countries
  - suggested composition of a monography: cover sheet, outline table of contents, table of contents, list of abbreviations, main text, multi-lingual summary, bibliography, table of legislation, table of cases, index
- b) Patterns of division and subdivision of the text
  - you are free to choose any pattern, as long as it allows the reader an *easy orientation*
  - the common patterns differ considerably depending on the time, the country and the discipline
  - word processing programs can manage the table of contents and the numbering of the headlines automatically (but you will be confined to the patterns provided by the software)

- the most common patterns:
  - 1./2./3. ..., 1.1./1.2./1.3. ..., 1.1.1./1.1.2./1.1.3. ..., 1.1.1.1./1.1.1.2./1.1.1.3. ... etc. (most common; may cause confusion if the subdivisions are going deep)
  - A./B./C. ..., I./II./III. ..., 1./2./3. ..., a)/b)/c) ..., aa)/bb)/cc) ...,  $\alpha\beta\gamma  - I./II./III. ..., A./B./C. ..., 1./2./3. ..., a)/b)/c) ... (used by some word processors)
  - I./II./III. ..., 1./2./3. ..., a)/b)/c) ..., aa)/bb)/cc) ... (common for journal articles)$
- c) The table of contents
  - the most important guidance for the reader
  - must present all headlines in exactly the same wording as in the main text
  - should be as clear as possible (→ make it clearer by smart formatting)
  - reflects the well-balancing of your text (not too many subdivisions, no long sections without subdivisions)
- d) The **scientific bibliography**
  - aa) What must be listed in the bibliography?
    - ▶ all cited scientific literature but no other documents:
      - *only scientific literature* (other literature may be listed separately)
        - also scientific contributions published in the internet (drawing the line may be delicate)
      - only literature cited in your text (exception: the French model of a well-structured and commented *comprehensive bibliography* that is not just a list of books but a scientific work itself)
      - *no legal norms or court decisions* (they must be listed separately in tables of legislation and cases)
      - *no political documents* (they may be listed in a separate table)
      - no other documents or websites
  - bb) How must it be presented?
    - a division of the bibliography into categories (textbooks, works of references, articles etc.) is not common (except in the French comprehensive bibliographies) but often helpful (e.g. in course bibliographies)
    - pay attention to the *correct spelling of the names* (including the use of special characters and diacritics)
    - list the authors of joint publications in the order chosen by them, not in the alphabetical order
    - in times of internet the place of publication does not need to be indicated anymore
    - specify the exact address of *internet publications* with a deep link and specify the date of your last verification of this address
      - a general note on the last verification is enough (e.g. "All websites last visited April 27, 2016.")
      - for sources outside the world wide web (www) refer also to the internet protocol ("http://")
  - cc) Are there *special rules for publications in foreign languages*?
    - rule no. 1: the names of the authors or editors, the titles and subtitles are given in the language of the cited publication; you may add translations of the titles and subtitles [in square brackets]
    - rule no. 2: all other bibliographical specifications are made in the language of your work
      - so do not use the words "editor", "edition", "volume" or "page" or the corresponding abbreviations ("ed.", "vol.") if you write your text in Romanian!
      - this rule results from logic; it applies without regard to language, country or national tradition
- e) The index
  - an often underestimated guidance that may attract readers
    - function: to allow a quick and easy access of the reader to all passages relevant to him
    - imperative in any master, doctoral or habilitation thesis
  - can be made semi-automatically with the help of the word processor
  - must be placed at the very end of the book
  - prepare an expedient and consistent system of entries at two or three levels, following both a systematic and an associative concept
    - use a homogeneous and common terminology to enable the reader to look up the right keywords
    - combine entries and sub-entries in two different ways (e.g. "Constitution - of the European Union" and "European Union - constitution")
    - include also common colloquial, non-technical keywords (e.g. "European constitution")
- f) Other tables and registers
  - table of diagrams (imperative if you work with many diagrams, graphics, statistics)
  - table of legislation (imperative for monographies in legal science)
  - table of cases (imperative for monographies in legal science)
- g) The appendix
  - very helpful: an appendix with important aids (glossaries, translations of important terminology, overviews, timelines etc.) and with materials difficult to access (foreign laws and judgements and their translations, statistics, diagrams provided by public institutions etc.)

### 3. The scientific style of writing

- a) An objective and precise style of writing
  - in particular: neutral formulations without subjective elements
  - in particular: precise and exact formulations, exact linking of thoughts by carefully chosen prepositions, conjunctions or other logical connections
- b) A structured, purposeful style of writing
  - following the concept of structured scientific research in every detail: outlining the problem, unfolding the possible solutions, presenting the views in literature (and jurisprudence), presenting one's own decision, giving reasons for one's own decision and recapitulating
  - in a thesis: discussing theories and presenting the views of others always in the context and from the perspective of the own specific questions (a scientific thesis is not a textbook!)
- c) A concise style of writing
  - Note that in Europe scientific texts are expected to be compact and concentrated! In Europe a scientific article is not an essay!
  - recommended: frequent review of the text in order to shorten it without losing substance
- d) But nonetheless a fluent and gripping style of writing
  - as far as possible with regard to your qualities as a writer...
  - try to use a simple terminology and to avoid complicated involved sentences
  - try to apply active voice instead of passive voice (→ more precise)

### 4. The *art of scientific citing*

- the conventions vary strongly, depending on the country and the discipline, but the standards are universal because they derive from the demands of logic, precision and accuracy
- a) The need of extensive scientific citing
    - every single information, which is not evident, must be substantiated (→ see above, II.2.a, p. 2)
    - every single scientific publication (and jurisprudence) dealing with your subject must be presented and discussed
    - wherever you draw upon considerations of others, you must document it by citation
    - if there is not enough room for extensive footnotes (→ in journal articles) refer to a source that presents the scholarly debate in detail and note "... with further references"
  - b) Precision and accuracy as guiding principles of scientific citing
    - aa) *Where exactly* do I find the information? How can I get access to it?
      - always refer to the *exact page* and/or to the exact marginal number, paragraph, recital, footnote etc.
      - when citing journal articles or court decisions, specify both the page where the text begins and the page with the quoted passage
      - refer to *margin numbers* where possible because this will be more precise
      - when citing court decisions, refer preferably to official margin numbers because they are independent from the place of publication (internet, law journal, official reports etc.)
      - provide *deep links* to internet sources
      - do not adopt citations of others without verification
    - bb) *What exactly* is the information?
      - present it as accurately as possible
      - indicate clearly where you need to interpret it
      - indicate if the cited opinion is the prevailing or a minority opinion
    - cc) What is the essence of the information in the *specific context*?
      - Has the sentence or part of a sentence in your text the same meaning as the cited passage?
      - Does the cited passage express exactly the scientific opinion you want to refer to?
      - Often *clarifications* are necessary to elucidate the context. For example, you may need to specify that you agree with the result of the author but not with his reasoning (or the other way around). Use conjunctions, adverbs, attributes and other grammatical means. In most languages, there are also special expressions applied for this purpose. For example, the English abbreviation "cf." (for "confer"), which expresses that the reference is rather vague, may indicate that the cited author is principally but not in detail of the same opinion or that his opinion is based on slightly different arguments.
    - dd) The correct *exact position of the footnote*
      - Behind the paragraph, the sentence or the relevant part of the sentence? Inside or outside the brackets?
      - the footnote always refers to the part of the text (paragraph, sentence, part of the sentence, parenthesis etc.) that is specified by its exact position
      - sometimes it may be appropriate to insert a footnote directly behind an individual word
  - d) The correct citing of literature and jurisprudence
    - see the examples shown in the lecture
    - if possible follow the proposals of the authors or editors

- within a monography titles of articles, webaddresses of online articles and subtitles of books are usually specified in the bibliography but not in the footnote
  - *cite the latest edition* (except if there are special reasons to cite a previous edition)
    - citing old editions or listing them in a bibliography proves that your work is not up-to-date!
  - *no citing in direct speech* without a special, justifying reason
    - the wording must be essential to understand the meaning
    - the cited passage must be limited to the necessary minimum
    - if you cite literally you must indicate it by quotation marks
- e) The correct citing of legal norms
- use common abbreviations for the designation of well-known statutes, regulations and treaties
  - refer to the individual norm as precisely as possible (which article, section, sub-section, phrase etc.?)
- f) The correct citing of sources in different languages
- similar rules as for the bibliography:
    - provide all bibliographical specifications, except names, titles and subtitles, in the language of your work
    - do not use technical expressions ("ed.", "vol." etc.) in foreign languages if you write in Romanian
  - refer to the official name of foreign courts (→ French "Conseil d'Etat", not "Council of State")
5. The formatting of the scientific text
- restrained and graduated use of modern formatting options, such as bold types, italics, different font sizes and underlinings
  - pay particular attention to the clarity of the table of contents, since it is the most important tool for the orientation of the reader.
  - *emphasize important keywords* so that they are not missed and later can be found again easily
  - no isolated headlines at the bottoms of the pages (→ indicates a lack of professionalism)

#### **IV. The need to promote the awareness of the intellectual and formal standards in science**

- you are always invited to discuss!

More information on this workshop at [www.iuspublicum-thomas-schmitz.uni-goettingen.de](http://www.iuspublicum-thomas-schmitz.uni-goettingen.de). For any questions, suggestions and criticism please contact me in my office (block C, room 208) or via e-mail at [thomas.schmitz@cimonline.de](mailto:thomas.schmitz@cimonline.de).