

Report concerning references cited in the work of Professor P. Nijkamp

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For publication.

Attachments 6.2, 6.3 and 6.4 are not published with the report, in order to protect the privacy of coauthors who were not included in the hearings of the Committee. Executive Board VU.

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1 Introduction

An article appeared in the newspaper *NRC Handelsblad* in January 2014 with the findings of a journalistic investigation into references cited in the work of Professor Peter Nijkamp (Regional, Urban and Environmental Economics, VU University Amsterdam). The implicit allegation of academic misconduct that emerged from the article prompted the Executive Board of VU University Amsterdam (hereafter the Executive Board) to form a committee of inquiry to thoroughly investigate and clarify the manner in which references were cited in Nijkamp's work. The criteria for the inquiry are the Netherlands Code of Conduct for Academic Practice of the Association of Universities in the Netherlands (VSNU), the Dutch Royal Academy of Sciences (KNAW) Memorandum on Academic Integrity, and the European Code of Conduct for Research Integrity of the ALLEA federation. While the inquiry into references cited in Nijkamp's work was in progress, the Citations Committee of the Dutch Royal Academy of Sciences published its Advisory Letter on Correct Citation in response to the discussion about plagiarism and 'self-plagiarism'. A section (1.5) was also dedicated to this subject in the Code of Conduct of the Association of Universities in the Netherlands that was referred to above.

1.1 Members of the Committee of Inquiry

The members of the Committee of Inquiry are Professor Jaap Zwemmer, chair (University of Amsterdam), Professor Jan Willem Gunning, member (VU University Amsterdam) and Professor Rick Grobbee, member (UMC Utrecht). The committee's administrative secretary is Drs Fieke Smitskamp. The Zwemmer Committee is independent and reports on its findings to the Executive Board.

1.2 Terms of Reference given by the Executive Board

The inquiry conducted by the Zwemmer Committee was not based on any specific complaint. The scope of the inquiry was to investigate the manner in which references were cited in Nijkamp's work to work published previously by himself, by himself jointly with others, and to the work of others. The Terms of Reference for the inquiry cover Nijkamp's entire oeuvre. The full text of the Terms of Reference can be found in Appendix 1 to this report.

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2 Method

The Zwemmer Committee retrieved the complete list of Nijkamp's publications from the Metis database, on the assumption that the data in Metis were accurate and were entered under the responsibility of the authors concerned. This list includes approximately 2330 publications from 1970 to the present. It soon became apparent to the Committee that the investigation of all these publications would consume an unjustifiable amount of time. It was also clear that manual investigation of the textual comparisons would be equally infeasible. Consequently the inquiry was necessarily restricted to texts that were available in digital form, and in a format that would facilitate comparison using appropriate software. In view of the, at best, limited availability in digital form of the publications from the early years, the Committee based the inquiry on the list of publications obtained from Metis, which starts in 1995. The Committee also applied several additional selection criteria in order to arrive at a workable selection for investigation. Further details of the criteria adopted by the Committee are given in 2.1.

The selected articles were analysed for overlapping passages with other publications, both in the selection and outside. The analysis was performed by carefully selected plagiarism software. The relevant specifications of the selected plagiarism software and their influence on the inquiry and its findings can be found under 2.2.

Where overlapping passages were encountered, the Committee ascertained whether references were cited, and, if so, the style of citation, and assessed the adequacy of the references. The results for all publications that were investigated are given in Appendix 2 to this report. The results of the investigation for a few publications are presented by way of example in Appendix 4.

Finally, the Committee analysed the findings and duly formed an impression of how references were cited in Nijkamp's work to work published previously by himself, by himself jointly with others, and to the work of others.

2.1 Metis and selection

The Committee based its inquiry on the list of publications obtained from the Metis database. The reference date for this list is 17 February 2014. A selection was made from this list of those that were categorized as peer-reviewed academic publications. There were 364 publications of this kind. Several errors were detected in this list, including duplicate entries of some publications, and the incorrect inclusion of publications in non peer-reviewed journals. The list also incorrectly included chapters of books, and editorials. The Committee took this into consideration. A further complication was that, contrary to expectations, not all publications entered in Metis turned out to be available in digital form.

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The following three basic criteria were applied in arriving at the 'Zwemmer selection', based on the list of publications obtained from Metis.

1) The inquiry investigated only those publications that were published in peer-reviewed academic journals. This accordingly excludes from the inquiry's selection research memoranda, working papers, conference proceedings and publications in non peer-reviewed professional journals. In the Committee's opinion, it can be acceptable for research memoranda or working papers, which are often precursors to a later publication, to exhibit a certain degree of carelessness. The academic status of conference proceedings and publications in non peer-reviewed professional journals is of a different order than that of publications in peer-reviewed journals

2) The Committee investigated publications that were available in digital form, which is also referred to as 'born digital' material. This criterion was imposed by functional limitations of the plagiarism software that prevents subsequently digitized files from being imported for comparison with other texts. Consequently it was infeasible to detect overlapping passages with publications that were not available in digital form.

3) The Zwemmer selection starts in 1995. No publications from before 1995 were investigated. As a result, the inquiry was unable to detect any overlap with publications from before 1995, unless those publications were available in digital form on Internet, thereby rendering processing by the plagiarism software, and inclusion in the comparison, possible. Any documents of this kind were treated as sources from outside the scope of the selection.

4) The Committee disregarded overlapping passages of fifty words or fewer in the analysis, without assessing whether these passages were satisfactorily referenced. The Committee's intention with this measure was to ensure that only highly significant results would be revealed, and to avoid exaggerating any borderline or trivial cases.

5) The Committee has compared the selected publications to each other (internal list) and has also compared the selected publications to publications in the iThenticate reference corpus (external list). The publications included in the external list were not necessarily published in peer-reviewed journals. Paragraph 2.2 gives more information on the reference corpus of iThenticate.

As experience was gained in compiling the results, the Committee modified the selection list, whereby some publications were found with hindsight to fall outside the scope of the selection. The Findings and Analysis chapter provides a statistical summary. Appendix 2 gives the Committee's actual findings for each publication.

2.2 Plagiarism detection software

For the purpose of the inquiry the Zwemmer Committee used iThenticate plagiarism detection software, which is dedicated to detecting textual matches in academic work, and has sufficient functionality and management facilities for use as a tool to investigate a substantial scientific oeuvre. iThenticate is

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produced by the same company as Turnitin. These two software packages have different target groups. iThenticate is used by authors of academic publications or manuscripts to check their own work for incorrect references, missing citations and suchlike, as well as by the editorial teams of journals to perform a pre-publication check of articles and manuscripts for plagiarism.

iThenticate's reference corpus includes 46 billion indexed internet pages, which constitutes a very substantial, albeit not exhaustive, quantity of academic publications from major publishers, content partners and academic databases with which iThenticate has concluded contracts.

It is worth noting that iThenticate has been found to be extremely accurate in use and that the output has been checked and found to be reliable. It is nevertheless the case that any report produced by iThenticate is only a snapshot. Any iThenticate report about which the Committee had doubts about some aspect were not analysed or interpreted further.

Reports generated by iThenticate always require manual interpretation. There are various situations that can cause iThenticate to report a certain degree of correspondence between one publication and another. For instance, the publications might have similar bibliographies, copied abstracts, descriptions of methodology, and so on. Likewise there could be overlapping passages for which a satisfactory reference is cited, and therefore do not constitute an irregularity or exception.

The Committee disregarded all overlaps of fewer than fifty words.

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3 Findings and explanatory notes

3.1 Findings

The 'Zwemmer selection' includes 364 publication titles. No data were available for 103 publications with respect to possible overlapping passages with other publications. There were various reasons for this data to be unavailable. The list below shows the categories concerned (categories A1 through A6).

The 15 publications that were incorrectly entered in Metis (for example where, contrary to the Metis data, the journal concerned was not peer reviewed) were disregarded. Several other publications were then disregarded for other reasons. Some were removed with hindsight from the selection on the basis of the Committee's criteria (when the publication was available only in hardcopy, or only as a research memorandum or Tinbergen discussion paper). It also proved to be impossible to investigate the references in some digital publications for different reasons. This was the case, for example, with 22 publications in PDF format that were impossible to import into the plagiarism software.

However, data were available for the other 261 publications in the selection. These publications were scanned by the plagiarism detection software for overlapping passages both with other publications in the selection and with the iThenticate comparison corpus.

The committee's findings can be categorized as follows.

A: No data: 103 of 364

| | |
|--|----|
| A1: Incorrect data in Metis, publications disregarded | 15 |
| A2: Publication not found | 5 |
| A3: Publication found only as a research memorandum | 12 |
| A4: The digital file could not be downloaded | 11 |
| A5: The digital file of the publication could not be imported into iThenticate | 22 |
| A6: The publication was available only in hardcopy form (not digital) | 38 |

B: Data available: 261 of 364

| | |
|---|-----|
| B1: No relevant passages that overlapped by more than fifty words | 201 |
| B2: Overlapping passages found without reference | 60 |

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3.2 Explanatory notes on the categories

A1: Publications that the Committee disregarded without further inspection because the data in Metis were found to be incorrect.

A2: Publications that were not found (either in hardcopy or digital form) and could not be included in the inquiry. It was therefore impossible for the inquiry to investigate whether any passages in these publications match passages in publications that were included. This applies to all categories A2 through A6.

A3: Publications that the Committee disregarded because, despite being listed in Metis as published in a peer-reviewed journal, investigation revealed that they exist only in the form of a preliminary study or research memorandum (Tinbergen discussion paper). The principle of restricting investigation to publications in peer-reviewed journals requires publications of this kind to be disregarded. However, in the Committee's opinion, if any publication is listed in Metis as being published in a peer-reviewed journal, it should be possible to actually find it in that form.

A4: Publications that were offered for download on a website, sometimes after payment, but could not actually be downloaded in all cases.

A5: Several publications available as digital files that the iThenticate plagiarism detection software was unable to scan and analyse for technical reasons. In other words, these publications existed and were rightly included in the selection, but no data could be extracted on which to base findings.

A6: A few publications that the Committee disregarded despite being available in digital form (born digital), because they failed to meet the Committee's selection criteria. This category generally includes chapters from books.

B1: Publications that were investigated for overlapping passages and the presence and adequacy of relevant references, but for which no relevant overlapping passages of more than fifty words were encountered in the findings.

B2: Publications in which overlapping passages were found. The appendix shows the irregularities concerned, the scale (number of words), and an assessment of the presence and adequacy of references, for each publication.

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3.3 Explanatory notes on detected overlapping passages

For each match that the software detected, the time sequence of the publications was established in order to identify the publication in which a reference was desirable or necessary.

The nature of the overlap was also investigated. Almost invariably, the software also detects obvious overlap in address data, personal details and bibliographies. The Committee has only reported overlapping passages that are relevant to the inquiry, and where it could be established that it would be unclear to the reader that the material was not original.

The irregularities found in the form of overlapping passages without satisfactory reference vary in size, but create the impression of systematic cutting and pasting, often with a few words deleted, added or changed in the target text. In the Committee's opinion, even if a few words are changed, the result still qualifies as a literal quotation, and a satisfactory reference is necessary. In some cases where the text did refer to a publication (e.g. '(Batabyal and Nijkamp, 2012b)' in publication no. 16) the publication's title was given in a footnote, suggesting that the text refers to the publication, but with no clear statement that the text had been literally reused.

4 Conclusions

The frequent reuse of fifty words or more, from texts authored by himself, or jointly with co-authors, has emerged from the inquiry into Nijkamp's publications. Most of the overlapping passages would appear to involve his own work, with or without co-authors, and to a far smaller extent to involve the work of others. This leaves the Committee with the impression that the practice of cutting and pasting served to support a possible strategy aimed more at achieving a high number of publications than an original oeuvre.

The size of the texts that were reused varies. In some cases it was just a few sentences, but in others whole paragraphs were copied. It is conspicuous that minor adjustments were frequently made by changing, deleting or adding a few words. Mostly, references to texts used previously were absent. In some cases where a reference to a publication did appear in the text, it was not made clear that the text had been literally reused.

Although the size of the overlapping passages without reference that were encountered varied, the Committee is of the opinion that the number of publications in which passages of this kind were encountered, which is 60 out of 261, or over twenty per cent, is substantial. It should be borne in mind that there might also have been overlapping passages with publications that had to be excluded from the inquiry for various reasons, and these will not therefore have come to light. Considering the passages that have overlap with publications outside the scope of the selection it is worth noting that the publication sequence can not be established (appendix 3 gives the overview). However, taking into account only the publications from the internal list of peer reviewed publications obtained from Metis (43 publications), the number of overlapping publications is still large.

The Committee is aware that the reuse of text is not always questionable. For instance, the Committee is aware that it is common in the field of economics for publications in peer-reviewed journals to be preceded by an earlier version for internal use, and by research memoranda for discussion purposes. In these cases the publication in a peer-reviewed academic journal clearly does not constitute questionable reuse of text from a research memorandum. The questionable nature arises only with the reuse of texts, other than research memoranda, that were intended to contribute to public academic debate. Even then, however, the reuse of previously published texts is not always problematic. For instance, the Code of Conduct of the Association of Universities in the Netherlands notes in section 1.5 that reuse without acknowledgment of the author's own material, or of short texts published jointly with co-authors, is not problematic in many academic fields, provided the texts concerned are brief passages in an introduction, or in sections describing theory creation and methods. However, the reuse in the publications that the Committee investigated went far beyond that limit. The examples that the Committee has given demonstrate actual cutting and pasting, sometimes with minimal adjustments, to produce yet another publication. This might also provide an explanation for the awe-inspiring number of Nijkamp's publications.

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The Committee is aware that the above passage from the Code of Conduct of the Association of Universities in the Netherlands is of very recent date, and follows on from the Advisory Letter on Correct Citation of the Dutch Royal Academy of Sciences that was issued in April 2014. This fact does not alter the Committee's conclusion. It was also clear in 1995 that it was possible for the reuse of an author's own texts without acknowledgment to assume a questionable form. An essential element of academic research is that anything that is not original must be acknowledged. This rule also applies to the reuse of an author's own texts.

The Committee is of the opinion that adapting a publication to a different audience, possibly by means of cutting and pasting, is not necessarily objectionable. However, the investigation into the reuse of his own texts in Nijkamp's work has led the Committee to conclude that this reuse has been of such a nature as to constitute a 'questionable research practice (QRP)' within the meaning of the Advisory Letter on Correct Citation issued by the Dutch Royal Academy of Sciences (KNAW) in April 2014. The QRP that has been observed is consistent with Nijkamp's evidently chosen publication strategy of giving priority to quantity and rarely publishing in leading journals. It is important to note in the light of the current 'Science in Transition' debate that the institutional incentives in this case actually reward quality rather than quantity. For several decades, research time has been apportioned in Nijkamp's faculty on the basis of the best five publications in the past five years. In this sense the chosen strategy is hard to explain.

In a very few cases the Committee has observed a correspondence in Nijkamp's publications, both with and without co-authors, with publications by third parties. It was then usually unclear which publication was sent to the publisher first. Because none of these cases was concerned with more than a few sentences, the Committee devoted no further attention to them.

It should be noted that in gathering the selected publications the Committee encountered several irregularities in the Metis registration system. The universities must be able to have confidence in the reliability of publication data that they report based on Metis. It is up to the individual researchers concerned to arrange for their data to be entered in the system. In this case that was often done carelessly, whereby other publications, untraceable documents and duplicates appeared in the category intended for articles in peer-reviewed journals.

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5 Literature consulted

ALLEA, *The European Code of Conduct on Research Integrity*, 2010.

Dutch Royal Academy of Sciences (KNAW), *Briefadvies Correct Citeren* (Advisory Letter on Correct Citation). Amsterdam 2014

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Association of Universities in the Netherlands (VSNU), *De Nederlandse Gedragscode Wetenschapsbeoefening. Principes van goed wetenschappelijk onderwijs en onderzoek* (The Dutch Code of Conduct for Academic Practice. Principles of sound university education and research). The Hague 2004, revised version 2012, revised version 2014

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6 Appendices

6.1 Terms of Reference for the Zwemmer Committee

Committee of Inquiry into the Nijkamp oeuvre

| DATE | OUR REFERENCE | YOUR LETTER OF | YOUR REFERENCE |
|-------------------|------------------|----------------|----------------|
| 06.02 2014 | FDS/fs/2014/0135 | | |
| E-MAIL | TELEPHONE | FAX | ATTACHMENT(S) |
| f.smitskamp@vu.nl | 020 598 5338 | | 1 |

Terms of Reference given by VU University Amsterdam

Dear members of the Committee of Inquiry.

The Executive Board of VU University Amsterdam hereby confirms the formation of a committee to be chaired by Profesor J.W. Zwemmer. The other members of the committee are Professor D E. Grobbee and Professor J.W. Gunning.

The Committee of Inquiry will investigate the manner in which use has been made in the work of Professor Peter Nijkamp of work produced by himself, by co-authors, and by others. The Terms of Reference cover Nijkamp's entire oeuvre.

The Executive Board has made further agreements with the Committee regarding matters including the Committee's working method and communication with the outside world. These agreements are attached.

The Executive Board indemnifies the Committee and its members against any legal consequences of their work and findings.

Yours sincerely,
on behalf of the Executive Board,
Professor J.W. Winter
President

Executive Board

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