

To Commissie Wetenschappelijke Integriteit (CWI)
Leiden University
Postbus 9500
2300 RA Leiden

Internet version – anonimised as far as relevant

September 30 2016

Concerning: Breach of integrity of science in 2009-2016 by Marian Hickendorff, Cornelis (Kees) van Putten (recently retired), Willem Heiser (emeritus) and Rob Tijdeman (emeritus), and after November 1 2016 potentially also Hester Bijl (appointed as vice-rector magnificus)

Dear Sir, Madam,

Your website still provides a regulation from 2014 that specifies mediation.¹ I have contacted professor Tiekens-Boon in January 2016 with the request whether she could mediate, but she wrote me, and confirmed this in a conversation, that your University Board does no longer allow mediation (**Appendix A**). My suggestion is that you advise the Board to revise the published regulation or still allow for mediation first.

I have set myself a deadline of October 1 2016, because Marian Hickendorff defended her thesis in October 2011 and it seems a common rule to use a time-window of five years.²

I also looked for other ways since January. A potential solution was to ask professor Tijdeman in his capacity as member of the committee of the KNAW report of 2009 on arithmetic education in The Netherlands.³ However, Tijdeman's response was such, that I must include him as breaching integrity of science himself now too. It is this recent response that is most problematic. If we allow a time window back to 2009 then we can observe that Tijdeman is a mathematician and no teacher of mathematics, so that his participation in the KNAW report of 2009 on arithmetic education comes with the conclusion that he is advising on an issue for which he isn't qualified, and it is a problem that he still does not recognize this in 2016.

With this time window and dead end roads, I see myself forced to submit this report to you now.

For me, there has been a clear breach of integrity for a while now. You must still consider the evidence, and hence for you this formally will be a suspicion of a breach.

The VSNU code is of 2012 and one might hold that work for a report in 2009 or a thesis of 2011 might not be subject to it. However the major problem is that the researchers reacted wrongly after 2014 when their conceptual errors were pointed out to them.

An additional complication is: member of the KNAW 2009 committee was prof. dr. ir. Hester Bijl, who will be vice-rector magnificus of Leiden University per November 1 2016 in charge of education. She is not qualified as mathematics teacher either. When I contacted her on the KNAW report she did not respond. In Leiden her position will be administrative and not as a scientific researcher. Perhaps one might say that I should submit a report to TU Delft as well, but let me concentrate on Leiden.

¹ <http://media.leidenuniv.nl/legacy/klachtenregeling-wi-universiteit-leiden-versie-14-11-14.pdf>

² Hickendorff (2011). "Explanatory latent variable modeling of mathematical ability in primary school : crossing the border between psychometrics and psychology", <https://openaccess.leidenuniv.nl/handle/1887/17979>

³ KNAW 2009, "Rekenonderwijs op de basisschool", <https://www.knaw.nl/nl/actueel/publicaties/rekenonderwijs-op-de-basisschool>

This also brings me to a word of protest. Your current regulations require me as a reporter of a problem to do all kinds of effort for you to identify the issue. It really takes a lot of time to trace an issue, query researchers, talk to people, and develop the proper approach. I also get the impression that you require that the burden of evidence would be on me. While I am convinced that there is a breach in integrity of science, it is not impossible that some lawyer at Leiden University finds some loophole such that suddenly it would be me who has filed a false accusation. Let me also refer to the weak rules at KNAW / LOWI, that apparently are targetted at allowing universities to defend themselves institutionally rather than at defending science itself.⁴ My advice is the creation of a national body of investigation of scientific issues, that resolves issues, and that might also deal with cases of integrity when such arise. The proper approach is to start looking at issues from science, and not what you do, forcing me to submit a case of integrity as if I would have all information and other means of investigation.

(1) The issue

The problem has been described succinctly in the mathematics education newsletter: "Het rekenexperiment op kinderen moet en kan worden beëindigd".⁵

There I refer to the work by Van Putten and Hickendorff, and explain what conceptual error they make, so that the "conclusions" that they draw from their research are invalid.

My suggestion there is that the Inspectorate of Education resolves what problem this has caused for education itself.

For you, the issue must be looked at from the integrity of science.

When Van Putten and Hickendorff are presented with criticism of their work, should they not reply? Shouldn't they either correct or specify why this criticism would not apply?

Hickendorff, in supporting work for the KNAW committee in 2009, then her thesis in 2011, and later public presentations on this, notably a KNAW conference in 2014, deals with education in arithmetic, which is an issue in didactics of mathematics *and its research*, but she states in an email to me in 2014 that she tries to keep a distance from didactics of mathematics "as much as possible" (**Appendix B**). Apparently she regards my questions as part of what is "possible to keep apart from".

Thus, arithmetic education is an issue of didactics of mathematics *and its research*, but we see an involvement of mathematicians and psychologists / psychometricians who are not qualified for the issue, and who draw conclusions and provide policy advice, claiming that this would be based in science!

And when I contact them on the problems that they cause in this field, then they argue that they are not interested in this field. This is Kafka and not science.

Historically, we might understand these developments. Mathematicians have a tendency to meddle in mathematics education even though they have no training on this. There is the phenomenon of "math wars" that make it no fun to get involved in this field.⁶ There is the paradigm of psychometrics that knowledge comes from measurement. As an econometrician I am very sympathetic to this. However, it still isn't science when key information and criticism is neglected. PM. The situation is also somewhat complicated since I present a paradigm shift, which causes additional discussion with other educators and researchers.⁷

Thus, the conclusions of that KNAW report and by Van Putten (member of the KNAW report and in the thesis supervising commission) and Hickendorff (both supporting work for the KNAW

⁴ <https://boycottholland.wordpress.com/2015/11/26/allea-defines-research-integrity-too-narrow>
There is a curious exchange with former KNAW president Pieter Drenth who also happens to be a psychologist involved in testing.

⁵ Colignatus (2015), " Het rekenexperiment op kinderen moet en kan worden beëindigd"
<http://www.wiskundebrief.nl/721.htm#5>

⁶ https://en.wikipedia.org/wiki/Math_wars and see also
<https://boycottholland.wordpress.com/2016/01/24/graphical-displays-about-the-math-war>

⁷ <http://thomascool.eu/Papers/Math/2016-05-09-Letter-to-VOR-and-Trainers-of-teachers.pdf>

report and thesis) are invalid. They neglected relevant information. They didn't respond adequately on criticism afterwards.

Curiously, professor Heiser, as promotor of Hickendorff, has supported this thesis and invalid approach. Perhaps the thesis supervisor can indoctrinate the Ph.D. student in thinking alike, but both would still be in error.

The thesis committee was unbalanced. Perhaps there was an effort to include a view from didactics in mathematics? Lieven Verschaffel from Leuven might perhaps come closest to having some knowledge about didactics of mathematics, but he has no background in this either. When he wrote a book review of the thesis by La Bastide – Van Gemert about Hans Freudenthal, Verschaffel overlooked a major inconsistency in that thesis, which is another example that shows that he is not adequately knowledgeable in this area.⁸

(2) Van Putten, Hickendorff, Tijdeman and Bijl at Leiden w.r.t. KNAW 2009

(2a) In 2009

The list of references of the KNAW 2009 report mentions the article by Van Putten and Hickendorff in *Tijdschrift voor Orthopedagogiek (TvO)*, may 2009 (no 5), but *doesn't mention* the critical article by Liesbeth van der Plas in the same issue – and at the same conference – that shows that the scoring method by Van Putten and Hickendorff is invalid, because they only consider the outcomes of sums and not the way of solution, while that way is relevant for learning algebra in subsequent education.⁹

Relevant letters are:

<http://thomascool.eu/Thomas/English/Science/Letters/2016-05-17-Letter-to-KNAW-and-CPB.pdf>

<http://thomascool.eu/Thomas/English/Science/Letters/2016-05-25-Letter-to-KNAW-and-CPB-supplement.pdf>

According to the VSNU code:¹⁰

"4.5. Een wetenschapsbeoefenaar is pas verdediger van een bepaald wetenschappelijk standpunt als dat standpunt voldoende wetenschappelijk is onderbouwd. Rivaliserende standpunten dienen daarnaast te worden gemeld en toegelicht."

Potentially the psychometricians might argue that they neglected the article by Van der Plas because it doesn't feature statistics, but, the issue concerns validity. When studying a topic one cannot neglect issues on validity with the fallacy of requiring statistics.

(2b) In 2014-2016

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https://lirias.kuleuven.be/handle/123456789/282138?mode=full&submit_simple>Show+full+item+record Diens bespreking van het proefschrift van La Bastide - Van Gemert toont:

(1) Hij noemt niet de inconsistentie in het hoofdstuk over Van Hiele, waarin Freudenthal zich in feite de ontdekking door Van Hiele toeëigent. Het is hem niet opgevallen, of hij heeft dit onderdeel niet echt gelezen.

(2) Hij noemt niet dat er kritiek is op Freudenthal's realistische wiskunde. De publicatie is uit 2010, en wellicht geschreven voordat Verschaffel deelnam aan de KNAW commissie, want anders zou je verwachten dat hij daar wel naar zou hebben verwezen. Toch was er al kritiek die best genoemd had mogen worden. Het proefschrift was uit 2006 toen ook Jan van de Craats al die kritiek gaf.

Het past bij een achtergrond als onderwijskundige die geen didacticus wiskunde is. Vooralnog ben ik echter de enige die protesteert tegen de fraude door Freudenthal, al mogen we blij zijn dat de redactie van de Wiskunde-brief toestond dat ik dit aan de orde stelde.

<http://www.wiskundebrief.nl/718.htm#7>

⁹ <http://www.liesbethvanderplas.nl/rekenvaardigheid-in-relatie-tot-wiskunde>

¹⁰ <http://media.leidenuniv.nl/legacy/vsnu-code-wetenschapsbeoefening-2004-%282014%29-def.pdf>

"6.2. Wetenschapsbeoefenaren laten zich eerlijk en loyaal de maat nemen over de door hen geleverde kwaliteit. Zij werken mee aan in- en externe beoordelingen van hun onderzoek."

Van Putten didn't respond. Hickendorff stated to me that she is basically unqualified for education in mathematics *and its research*, but this is not clarified in the thesis itself, and not told to the minister of education who might look differently at the KNAW report of 2009 now.

Relevant texts for Van Putten and Hickendorff are:

<http://thomascool.eu/Papers/AardigeGetallen/2016-01-17-Meta-opmerkingen-over-psychologie-en-wiskunde.pdf>

<http://thomascool.eu/Papers/AardigeGetallen/2016-01-31-Enkele-emails-rekentoets-psychometrie.pdf>

<http://thomascool.eu/Papers/AardigeGetallen/2016-02-10-Basisprobleem-in-pedagogie-onderwijs-en-didactiek-van-wiskunde.pdf>

For Tijdeman:

<http://thomascool.eu/Papers/Math/2016-05-25-Email-exchange-with-Kool-Noteboom-Tijdeman.pdf>

(3) Heiser as thesis supervisor, Van Putten as co-promotor and Hickendorff as Ph.D. student

(3a) In 2011

The same problem of not-mentioning Van der Plas (2009), breaching VSNU 4.5.

(3b) in 2014-2016

The same problem of breaching VSNU 6.2.

For professor Heiser there is the curious email in **Appendix C**. My query was a bit wider than only the thesis since I was also interested in how CITO dealt with the issue. Apparently Hickendorff is active there w.r.t. testing and there is insufficient attention for validity. However, though my query was wider, I clearly addressed Heiser as promotor of Hickendorff. See the emails mentioned above.

It is not impossible that other aspects of the regulations on integrity are relevant too. I find the code(s) questionable since they formulate some general statements and then specify some points, which makes one wonder whether its generality is actually replaced by the specifics. Overall, I find these Leiden researchers w.r.t. this issue not helpful, careful, reliable, impartial and responsible.

Kind regards,

Thomas Cool

Econometrician and teacher of mathematics

[...] Scheveningen, The Netherlands

[...]

[...] <http://thomascool.eu>

Appendix A. Email of 2016 by prof. Tiekens-Boon that declines mediation

From: "Tiekens, I.M." [...]
To: "'Thomas Cool / Thomas Colignatus'" [...]
Subject: RE: Na het gesprek - RE: Wetenschappelijke integriteit t.a.v. Marian Hickendorff en onderzoek aan onderwijs in rekenen
Date: Mon, 18 Jan 2016 [...]

Beste meneer Cool,

Hartelijk dank voor uw bericht. Ik ben blij te horen dat u het een prettig gesprek vond. Wat betreft uw verwachtingen van wat ik voor u kon doen en of het wel of niet de moeite waard voor u zou zijn om naar Leiden te komen voor een gesprek: ik had u al gezegd in een eerdere email dat u daar waarschijnlijk teveel van verwachtte. Het is dus ook niet zo dat ik uw verzoek om te bemiddelen afwijs: dat hoort gewoon niet tot mijn taken.

Dat houdt ook in dat ik niet kan voldoen aan de vraag in uw andere mail: het is namelijk niet mijn taak om dat soort dingen te doen. Zoals gezegd, mijn functie als vertrouwenspersoon is om te luisteren, advies te geven en mensen de weg te wijzen in de procedure die ze eventueel zouden kunnen volgen.

Vriendelijke groet,
[...] Tiekens

Appendix B. Email of 2014 by Marian Hickendorff

From: "Hickendorff, M." [...]
To: "Thomas Cool / Thomas Colignatus" [...]
Cc: J.A.Bergstra [at] uva.nl,
"Craats, Jan van de" [at] uva.nl
Subject: RE: T.b.v. a.s. maandag (KNAW reken-onderwijs)
Date: Fri, 27 Jun 2014 [...]

Beste Thomas Cool, Bedankt voor uw mail. Ik vrees dat ik niet de tijd kan vinden om alles wat u stuurt te bekijken. Daarnaast vraag ik me ook af of u bij mij hiervoor aan het juiste adres bent: ik ben geen didacticus maar psychologisch onderzoeker, en probeer ook zo veel mogelijk buiten de discussie over didactiek te blijven omdat ik niet meen dat dat mijn expertise is. Vriendelijke groeten, en tot a.s. maandag, Marian Hickendorff

Appendix C. Email of prof. Heiser that declines a response

From: "Heiser, W.J." [at] FSW.leidenuniv.nl
To: "Thomas Cool / Thomas Colignatus" [...]
Cc: "Hickendorff, M." [...]
Subject: RE: Ethiek van het toetsen op rekenen (PPON of LVS)
Date: Tue, 13 Oct 2015 [...]

Geachte heer Cool:
Mijn stelregel is dat het iedereen vrijstaat om mij iets op te sturen, maar dat het mij vrijstaat om daar niet op in te gaan.

Gegroet, Willem Heiser