

A breach of scientific integrity since 1980 on the common logical paradoxes

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May 21 2015
<http://thomascool.eu>

Abstract

There is a breach of scientific integrity in Holland since 1980 and increasingly after 2007 by several Dutch mathematicians on the subject of the common logical paradoxes: Liar Paradox, Gödel's Incompleteness Theorems, Russell's Paradox, Cantor's Diagonal Argument. The breach is described and documented. Rather than that the author emigrates it makes more sense in a globalising world that people boycott Holland till Dutch mathematicians respect scientific integrity. The case is an example for mathematicians anyway.

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1. Introduction

A mathematician wrote to me on March 7 2012:

“Once you have irritated old-style mathematicians (...) they turn, of course, into crackpot interception mode. Start nit-picking, misunderstanding, finding real small errors, maybe some big ones, but certainly consistently misunderstanding what you are trying to say. We all get letters and papers from crackpots who are squaring the circle, proving that Bell's theorem is wrong, or solving the P=NP problem. (...) It's quite a sport to show in public to your mathematical friends that these crackpots are a public nuisance. (...) You drew attention to yourself, you got attention, and now several Delft mathematicians are thoroughly enjoying a little group-crackpot-ridiculization. But I could say (and in fact do) that one could say that you asked for this! Never mind. Remember Gandhi: first they ignore you, then they fight you, then you win.”

However, I object that I “asked for it”.

The first section reviews my background and the work on the logical paradoxes. The second section provides documentation about mathematicians who have been misbehaving in above manner. The third section gives a clear example of disingenuous nit-picking.

I have identified other breaches of scientific integrity. One case concerns voting theory since 2005. ¹ One concerns a slanderous "book review" about my *Conquest of the Plane*, which is a primer on analytic geometry and calculus. ² See below on a case of didactics of mathematics in general. It is useful to now document the case on the logical paradoxes.

¹ <http://thomascool.eu/Thomas/Nederlands/Wetenschap/Artikelen/2013-02-14-PasOpMetWiskundeOverVerkiezingen.html>

² <http://thomascool.eu/Papers/COTP/LOWI/Index.html>

2. Background and work on the common logical paradoxes

The author is an econometrician (Groningen 1982) (grade point average 7.7) and teacher of mathematics (Leiden 2008) (no g.p.a. available because of partial dependency on 1982).

Colignatus (2009) looks at both *didactics of mathematics* and the *mathematics industry*.

The common logical paradoxes - **(1)** Liar Paradox, Gödel's Incompleteness Theorems, Russell's Paradox, and **(2)** Cantor's Diagonal Argument - have drawn the attention of many people since almost 2300 year ago when they started being discovered. They also drew my attention as a student around 1980 because textbook mathematics about them did not make much sense.

Results are (in the references under Colignatus):

On **(1)** and a bit of **(2)**: (1981 unpublished, 2007, 2011), *A logic of exceptions* (ALOE), and (2007) *A difficulty in proof theory*

On **(2)**: (2012, 2013) *Contra Cantor Pro Occam - Proper constructivism with abstraction* and (2015) *A condition by Paul of Venice (1369-1429) solves Russell's paradox, blocks Cantor's diagonal argument, and provides a challenge to ZFC*.

ALOE 1981 was written during my student years out of plain interest. In 2007 it surfaced during a home move, and I retyped it and programmed it in *Mathematica* - a system for doing mathematics on the computer, developed by Wolfram Research Inc. Doing three-valued logic is easier with computer algebra assistance. By then I had been teaching mathematics, statistics, logistics and operations management in 1997-2001 at college level, and ALOE 2007 benefits from didactics. Of course, 2007 also allowed a fresh critical look at the 1981 version: but it passed that test.

- In 1981 my position was: when I take a course in logic then I shouldn't be taught nonsense.
- My work in this realm essentially derives from science, and later also specifically the empirical science of didactics of mathematics, which differs from abstract mathematics itself. See Colignatus (2013) *What a mathematician might wish to know about my work*.
- My question for mathematicians is essentially whether they can check on clarity and consistency as far as mathematically relevant: which is something else than inviting them to regard my work as efforts at mathematics itself that need to be nit-picked.
- I deem it useful submit papers like (2007), (2012, 2013) and (2015) to "general journals for mathematicians" to inform mathematicians, who will generally have had a first year course in logic and set theory, about my critical findings, so that they can also look critically at their colleagues in the departments on logic and set theory. If elements of my work would be interesting enough to develop into forms that are acceptable for the mathematical community, then I suppose that mathematicians are more up to that task.
- Cultural anthropologist Ton Langendorff (2015) interviewed Dutch mathematicians on the errors that they make themselves. In a personal communication he confirmed that econometrics - my other background - tends to be seen as applied mathematics.
- Overall my analyses are competent. Mathematicians who need nit-picking to claim otherwise are misbehaving.

While studying and researching logic and its common paradoxes I have benefitted much from the comments from mathematicians, also from some of those mentioned below. Even when there is nit-picking then this indicates a possibility to avoid such in the future. Except for 1980-81 when I took that course on logic, there has been no official relation with the academic mathematicians below, and it is only their kindness and service to the general public that they were willing to look at my work. Perhaps they started out with genuine interest and then got disappointed. However, notwithstanding the gratitude for the comments and the attention given, it must be mentioned that lines were crossed.

The problem of course has become somewhat larger because of the situation that I do not write papers for mathematical journals. One supposes that what is happening here is not standard practice in the world of mathematics. This is still no excuse for crossing the lines.

3. Documentation on misbehaving mathematicians

Documentation on academic mathematicians who have been misbehaving in the manner indicated in the Introduction is, since 1980 but especially since 2007:

(1) My professor of logic in 1980-1982 was Johan F.A.K. van Benthem (Groningen & UvA). After his retirement I felt obliged to write <http://thomascool.eu/Papers/ALOE/JFAKvB/Index.html>.

(2) Albert Visser (Utrecht) was asked by Van Benthem in 1981 as independent referee. See the closing statement in ALOE. In 2007 I queried him whether he would be willing to look again: these emails are still unpublished.

(3) Henk Barendregt (Nijmegen), who monitored a bit in 2007, see Visser.

(4) The [association on logic](#),³ [research school on logic \(OzSL\)](#),⁴ [FoLLi](#),⁵ the [Dutch colloquium on mathematical logic](#):⁶ this is a PM post w.r.t. an occasional effort about contacting that community, which never resulted into an invitation to present the result and discuss it.

(5) Dirk van Dalen (Utrecht), Mark van Atten (Paris-Sorbonne) & Göran Sundholm (Leiden), w.r.t. the explanation that L.E.J. Brouwer did not understand the principle of the excluded middle, see <http://thomascool.eu/Papers/ALOE/2014-06-13-VanAtten-Brouwer.pdf>.

(6) Bas Edixhoven (Leiden): some exchanges reworked for others to read, see Colignatus (2014). He has been informed about the existence of Colignatus (2015) but still declines to explain the difference between Phi and Phi-accent, as I asked him in 2014.

PM. On the side: Edixhoven as an abstract mathematician also presented ideas about the education of mathematics, but without proper attention for the empirical science of the didactics of mathematics, which means an incompetent digression into another research field while still claiming competence, see a [report of a session](#)⁷ at KNAW in 2014 and my [letter to LOWI](#),⁸ the science integrity body.⁹

(7) Klaas Pieter Hart (2015) (TU Delft) - in the Dutch journal of mathematics NAW - reviews Cantor's "Diagonal argument". A refutation of Cantor's diagonal argument can be found in my book "A Logic of Exceptions" (ALOE) (1981, 2007, 2011) which is neglected by Hart. See a review by Gill (2008), also in NAW. Later I updated specifically on Cantor's diagonal argument in "*Contra Cantor Pro Occam - Proper Constructionism with Abstraction*" (CCPO-PCWA) (2012, 2013), on which I informed Hart. See Colignatus (2015a) for the email exchange that followed.

Starting October 29 2014, due to a restaurant discussion with Edixhoven, I looked at the relation to the ZFC axioms, which resulted in Colignatus (2015), now with an Appendix B on Hart (2015). The documentation on this leg of the discussion involves:

- i. This Appendix B in Colignatus (2015) - time stamp May 20 - can be published in NAW in response to Hart (2015) in the "readers reactions" ("De Derde Wet").
- ii. Colignatus (2015b) contains the exchange with Hart w.r.t. Appendix B.
- iii. Colignatus (2015c) supplements this on the topic of Colignatus (2015), and its Appendix B point (6) and Appendix C.

³ <http://www.verenigingvoorlogica.nl/>

⁴ <http://www.math.ru.nl/~mgehrke/OzSL/OzSL.htm>

⁵ <http://www.folli.info/>

⁶ <http://www.staff.science.uu.nl/~ooste110/seminar.html>

⁷ <http://thomascool.eu/Papers/Math/2014-07-02-KNAW-Rekenen-deugt-niet.html>

⁸ <http://thomascool.eu/Papers/Math/2014-07-08-Colignatus-aan-KNAW-LOWI.html>

⁹ See overall <http://thomascool.eu/Papers/AardigeGetallen/Index.html>

One may check that Hart's rejoinder has been used to remove possible sources for nit-picking in Colignatus (2015) and its Appendix B, but that the arguments still stand.

The next section is an example: how I restate Cantor's diagonal argument for the real numbers, and Hart nit-picks a supposed error - a straw man - then states "This is seriously bad writing and invalidates any point you want to make on that basis", and then uses this straw-man as an excuse to further neglect the discussion on content.

4. Example: Colignatus (2015c) section 5. Rejoinder on Hart 2015-05-18: The 1890 / 91 proof (decimal form)

KPH May 18:

May 8 (b): on page 24 in 2012-03-26-CCPO-PCWA.pdf (I assume you refer to this) there is a very confused presentation of the decimal proof. There are two labels, D and C , and n_D is used to denote the diagonal number $0.d_{1,1}d_{2,2}\dots$ and n_C denotes the number obtained by setting $n_{C,i}=2$ if $d_{i,i}=1$ and $n_{C,i}=1$ otherwise. At this point C and D do not seem to have any relation with the anonymous map between N and R .

Then suddenly C should not be a label but a natural number and, without warning, n_i seems to be the image of i under the heretofore anonymous map.

This is seriously bad writing and invalidates any point you want to make on that basis.

TC May 20:

- (a) This is seriously bad *reading* and invalidates any criticism you want to make on that basis.
- (b) For readers who have not yet looked at page 24: check from the above that " n_D " is a unique symbol for the diagonal number, with "n" as a label for number and "D" as a label for diagonal (in this combination since it need not be obvious that the diagonal is a number), while the definition of n_C implies that C is used as a natural number index.
- (c) A comparable flexibility of use is with superscripts: n' (n-accent), n^S (n-label-S) and n^2 (n-square).
- (d) If a professional mathematician from TU Delft cannot read properly then I am willing to consider using say D instead of n_D so that we have dealt with this "criticism".
- (e) I do not agree with the implied suggestion that a new version of the paper would be required before a discussion on content would be feasible.
- (f) I do not observe any criticism by PKH on the content of my refutation, which I asked him to do since 2012.
- (g) I maintain my criticism that Hart (2015) does not refer to Colignatus (2012, 2013) and misleads his readership.

5. Conclusion

The problem with this nit-picking and such is that no-one seems to care. When an apparently capable mathematician claims to have found an error, then fellow mathematicians and other people tend to believe that. The situation that I feel forced to document these cases now on the internet shows that other ways of resolution have not worked.

There is a breach of scientific integrity in Holland since 1980 and increasingly after 2007 by several Dutch mathematicians on the subject of the common logical paradoxes: Liar Paradox, Gödel's Incompleteness Theorems, Russell's Paradox, Cantor's Diagonal Argument. The breach is described and documented. Rather than that the author emigrates it makes more sense in a globalising world that people boycott Holland till Dutch mathematicians respect scientific integrity. The case is an example for mathematicians anyway.

My "["boycott Holland" weblog](#)"¹⁰ targets the censorship of economic science by the directorate of the Dutch Central Planning Bureau (CPB) since 1990. Here is an official relationship, in which I as an employed scientist was blocked from publishing my analysis on unemployment. This has an operational point where the boycott could stop: when the censorship is lifted. On occasion I discuss on the weblog the role of mathematics. This situation of target and supplementary aspects need not be not changed.

But the above is a good reason to boycott Holland too. It would be less operationally defined though when to stop. How is one to measure "till Dutch mathematicians respect scientific integrity" ? Such a boycott is not intended to push people into a position that they hold with valid argumentation. However, once the world is aware of the problem in Holland, we may presume that researchers on the integrity of science will start monitoring the situation.

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Colignatus is the name of Thomas Cool in science, see the website.

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