

Terms of Reference, December 7, 2005, for the Expert Committee for the Evaluation of Helmuth Nyborg's Research Project on Sex Differences in Intelligence.

Following the recommendation by Head of the Department of Psychology Jens Mammen, I have in accordance with the regulations set out in the Statutes governing Universities, § 16, decided to appoint an evaluation committee consisting of the following people:

Professor Niels Keiding, University of Copenhagen
Professor Jan-Eric Gustafsson, University of Gothenburg
Professor Jens Ledet Jensen, University of Aarhus (Chairman of the Committee).

Head of the Department of Psychology Jens Mammen's recommendation has been given in accordance with the regulations set out in the Statutes governing Universities, § 17. Regulation § 17, subsection 4 states: "*The Head of the Department is to ensure quality and consistency in the research and teaching carried out at the department*". The commentary to § 17, subsection 2 states "*The Head of the Department is to follow the individual researcher's publication record and its quality, including the observance of and adherence to the scientific ethical guidelines of the university*".

The Committee is asked to submit its statement by April 1st 2006 at the latest.

All correspondence between the Committee and the University (the Faculty of Social Sciences, the Department of Psychology and Helmuth Nyborg) is to be documented in writing and overseen by the Chairman of the Committee and the undersigned.

During the evaluation the Committee will get the opportunity to ask questions and request additional material which is in the possession of the University or Helmuth Nyborg. The Committee is evaluating the quality of the research and the observance of and adherence to scientific ethical rules of a scientific co-worker. The Committee is therefore made aware that the outcome of the evaluation can lead to grounds for possible disciplinary action.

The Committee can draw upon the administrative and legal expertise of the University. If the Committee is in need of secretarial assistance the University will make this available to the Committee.

The case history:

Dr. Helmuth Nyborg has been established as a professor in developmental psychology at the Department of Psychology, University of Aarhus since March 1st, 1994. In January 2002 Helmuth Nyborg disseminated the results of an empirical investigation he had undertaken on sex differences in intelligence, to colleagues, the public and scientific publishers. In addition to a publication there is a conference presentation, a press release, a presentation in a publicly accessible website, submission of material to a publisher and material given to the Press for the purpose of publication.

As stated in the attached letter [23] of November 23rd 2005 (including enclosures) written by Head of the Department of Psychology Jens Mammen, serious doubts have been raised while reviewing the case as to whether the aforementioned research conducted by Helmuth Nyborg and the dissemination of its results fulfil the demands of quality and adherence to research ethics required from a professor employed at the University of Aarhus.

Questions to the Committee.

The Committee is requested to make an evaluation of:

the methods applied by Helmuth Nyborg when selecting and managing his data, and thereby evaluate the validity of the results presented.

the concordance between what Helmuth Nyborg has reported to the public and sent to publishers, and the actual selection and management of data.

Helmuth Nyborg's adherence to the demands which, according to the Committee, apply in the securing and provision of data for ones own published scientific results as they pertain to the type of investigation.

Helmuth Nyborg's adherence to other demands of scientific research (as they may arise), including publication of results, which the Committee deems applicable to an investigation of this type.

It would be especially useful if the Committee could answer the question stated below in relation to Helmuth Nyborg's research project.

Enclosure [2] contains Helmuth Nyborg's description of the research design and test battery and a table of results from his "Skanderborg project" indicating sex differences in intelligence in the population investigated. The tables of results were presented by Helmuth Nyborg in the Second Annual Conference for Intelligence Research (ISIR), December 6-8th, 2001, in Cleveland, Ohio. In addition to this the material relating to the 52 so-called adults was posted on Helmuth Nyborg's homepage which was publicly accessible between the 9th and the 11th of June 2004. Also, the same material is the basis for the results stated in Helmuth Nyborg's book published in 2003 [3] section 4.2.10, pp. 208-209, and for the manuscript [4] submitted in January 2004 for publication in the journal *Personality and Individual Differences* (PAID). The same material is included in the final version, August 2005, of the manuscript published in PAID [22]. With minor variations in the text the three aforementioned sources refer to the table material [2] as:

Nyborg, H. (2001). Early sex differences in general and specific intelligence: Pitting biological against chronological age. Paper presented at the Second Annual Conference for Intelligence Research (ISIR). Cleveland, OH, December 6-8th.

Helmuth Nyborg submitted a diskette [8] to the Department of Psychology containing the file *Children incomplete data set N=325 with id and Sex.sta*, which when read using Statistica Spreadsheet contains the data that is the basis for Table 3 and Figure 7 in the aforementioned material [2]. The data have subsequently been converted to an Excel file and afterwards to a pdf file by the Department of Psychology in order to provide a readable transcript [9, children 325]. The Head of the Department of Psychology Jens Mammen has via handwritten notes indicated on the transcript which subgroups in the design the data originate from.

The aforementioned handwritten notes are based on a schematic overview [13] worked out by the Head of the Department of Psychology Jens Mammen, based upon information provided by Helmuth Nyborg [10]

concerning the research design and compared with the data files on the aforementioned diskette [8] and a data spreadsheet [12] relating to the first cross sectional investigation “fase 0”.

In Table 3 and Figure 7 in enclosure [2] and in the manuscript [4] on p. 8, the number of studied children between 8 and 14 years is stated to be 325. *In what way, according to Helmuth Nyborg, does this relate to the data material used [9, children 325]?*

Helmuth Nyborg describes the applied method of calculation in [6, 7, 19, 20] with reference to [0], which leads from the data material [9, children 325] to Table 3 and Figure 7 in [2], including the application of “mean-substitution”. *Is this method (taking reference from the conventional understanding and use of statistical methods) appropriate to the type of data presented?*

Helmuth Nyborg describes a calculation error in [7], which was entered into his calculation of the table material [2]. *Is it possible, (maybe with assistance from Helmuth Nyborg), to apply the method of calculation described by Helmuth Nyborg, and the calculation error described by Helmuth Nyborg [7] to reconstruct Table 3 and Figure 7 in [2] from the data material in [9, children 325]?*

From October 13th to December 5th, 2004 (approximately) [5] and from December 5th, 2004 (approximately) [6] Helmuth Nyborg posted the corrected calculations on his publicly accessible homepage. The diskette [8] that Helmuth Nyborg has given to the Department of Psychology contains the file *Children complete data set N=119 with id and Sex.sta*, which states to contain the data material which is the basis for the calculations. This file has been converted to a pdf-file via an Excel file by the Department of Psychology, for the purpose of transcription [9, children 119], together with the handwritten commentaries on the basis of [13]. *Is it possible (maybe with assistance from Helmuth Nyborg), using the calculation method referred to by Helmuth Nyborg and omitting the aforementioned calculation error, to reconstruct the table material in [5] Table 1 and Figure 1, and in [6] pages 2, 3 and 7, including the brief description of results in [22] p. 506, from the data material in [9, children 119]?*

Is it also possible (maybe with assistance from Helmuth Nyborg), using the calculation method referred to by Helmuth Nyborg, to reconstruct the table material in [5]. Table 2 and Figure 1 in [6] pages 5, 6, and 7 and in [22]. Table 1, Table 2 and Figure 1 from the data material in [9 adult 62]. Ref. file Adult complete data set N=62 with id and sex.sta on the diskette [8]? (Data from the 119 children are also presented in the figures).

Helmuth Nyborg states that Table 4 and Figure 8 in [2] has been calculated using the method of calculation described by himself, but with the stated calculation error from the 52 adults which is a sub-sample of the 62 adults in the data material [9, adult 62]. *Out of this information can it be evaluated whether the 52 adults are a random sub-sample of the “62 adult sample”?*

Helmuth Nyborg states that he continually included more and more people and data in his calculations, within the framework of the total design and the originally collected protocol material. *Does this method and the way it is administered, according to [10] and the minutes of meetings with Helmuth Nyborg on March 18, 2005 [11] and April 26, 2005 [14] and the following correspondence [15, 16, 17, 19, 20] live up to the demands of objective and neutral selection of sub-samples and to the expectations of transparency when selecting sub-samples?*

Is it plausible when using a standard degree of rigour in the management of the protocol material [8a] and the data material, that one could end up in a situation like the one described by Helmuth Nyborg in the minutes [11, 14] and the following correspondence [15, 16, 17, 19, 20], when he explains how the data for the original 52 adult participants cannot be extracted from the presented data of 62 participants and cannot be recreated in any other way?

Is it in accordance with usual scientific practice when correcting a calculation error in published results, that one does not carry out and disseminate the correct calculation of the original data material?

In his book [3], section 4.2.10, pp. 208 – 209, Helmuth Nyborg presents a number of statements about his empirical study on sex differences in intelligence, including the following statement: “Data on children participating in the cross-sectional **parts** of the study were included in the present analysis, as were data on children participating in the longitudinal part of the study, but who had been examined **only once**. The particular selection procedure resulted in a total of **376** children and adults, with an identical number of girls and boys in each category. **All** subjects were exposed to a large and varied battery of 20 or 21 ability tests” [my italics]. Nyborg (2001), is referenced on p. 208 and in the reference list on p. 221, and is the material presented in December 2001 at the ISIR conference [2]. Furthermore, Nyborg (2003) is referenced on p. 208 and in the reference list on p. 221 and is an earlier edition of [4].

In the paper [4] submitted to the journal PAID Helmuth Nyborg makes a number of statements about his study. Reference is made to Nyborg (2001) [2] on p. 4 and two places in Table 3, plus the reference list on p. 20. On p. 8 there is a brief reference to the results from “cohort-sequential data for the 325 8-14 year old boys and girls”.

The committee is asked to evaluate the grounds for the arguments stated in the book [3] section 4.2.10 pages 208-209 and in the manuscript [4], in the material Helmuth Nyborg has made available, including the information he provides in the minutes (11, 14) and in the following correspondence [15, 16, 17, 19, 20].

Yours Sincerely,

Tom Latrup-Pedersen
Dean Faculty of Social Sciences

Enclosures (documents are numbered in chronological order in relation to the date of availability).

(0) Jensen, A. R. (1998). *The g factor: The science of mental ability*, Westport, CT: Praeger.

(1) Statement to the Press given by Helmuth Nyborg in an email dated January 19, 2002 (16:05) to Danmarks Radio, Journalist Jette Aaes at Jyllandsposten, Journalist Nils Thorsen at Politiken, Ritzaus Bureau and the Head of the Department of Psychology Jens Mammen.

(2) The original material (10 pages) delivered by Helmuth Nyborg to the Department of Psychology, January 23, 2002.

(3) Nyborg, H. (ed.)(2003). *The scientific study of general intelligence: Tribute to Arthur R. Jensen*.

Oxford: Pergamon/Elsevier Press.

(4) Helmuth Nyborg's manuscript dated January 5, 2004 entitled "Sex-related differences in general intelligence *g*, brain size, and social status", submitted to the journal *Personality and Individual Differences* (PAID).

(5) 5 pages of material posted on Helmuth Nyborg's homepage on the Department of Psychology website on October 13 (perhaps earlier) to December 5, 2004 (perhaps earlier).

(6) Material from December 5, 2004 (perhaps earlier) posted on Helmuth Nyborg's homepage on the Department of Psychology website under the link "Analysis of sex differences".

(7) Letter dated January 31, 2005 from Helmuth Nyborg to the Head of the Department of Psychology Jens Mammen, with copies sent to the Dean of Social Sciences Tom Latrup-Pedersen and the University Rector Niels Chr. Sidenius.

(8) Diskette received March 3, 2005 from Helmuth Nyborg, including 4 files. Three of the files are data files readable with the programme Statistica Spreadsheet, containing "Children complete data set N=119 with id and Sex.sta", "Children incomplete data set N=325 with id and Sex.sta", and "Adult complete data set N=62 with id and sex.sta". The last file is a text file "Note.doc". The Department of Psychology has converted the 3 data files to Excel files, labelled "Children_complete119_Sex.xls", "Children_incomplete325_Sex.xls", and "Adult_sex.xls". The files have also been converted to pdf files for the purpose of printing. See enclosure [9].

(8a) Two filing cabinets containing protocol material delivered March 7 and 8, 2005 to the Departmental Secretary at the Department of Psychology.

(9) Three transcripts [9, children 325], [9, children 119] and [9, adult 62] in pdf format, corresponding to the three data files on the diskette [8], with the Head of the Department of Psychology Jens Mammen's handwritten notes.

(10) Letter dated March 14, 2005 from Helmuth Nyborg to the Head of the Department of Psychology Jens Mammen.

(11) Minutes of the meeting with Helmuth Nyborg and the Dean of Social Sciences Tom Latrup-Pedersen dated March 18, 2005 (8:30), a drawing dated March 18, 2005 and a copy of Helmuth Nyborg's letter from March 14, 2005 to the Head of the Department of Psychology Jens Mammen [10].

(12) Four pages of data material delivered April 9, 2005. According to Helmuth Nyborg the material includes data from "fase 0" a cross section study from 1976.

(13) A schematic overview of the research-design and the person identification numbers made by the Head of the Department of Psychology Jens Mammen and used as basis for the handwritten notes in [9].

(14) Minutes from the meeting held April 26, 2005 with Helmuth Nyborg, Dean of Social Sciences Tom Latrup-Pedersen and the Head of the Department of Psychology Jens Mammen (PAID is erroneously referred to as PAIS).

- (15) Letter dated May 8, 2005 from Helmuth Nyborg to the Dean of Social Sciences Tom Latrup-Pedersen, with four documents attached.
- (16) Letter dated May 23, 2005 from the Dean of Social Sciences Tom Latrup-Pedersen to Helmuth Nyborg.
- (17) Letter dated May 27, 2005 from the Head of the Department of Psychology Jens Mammen to Helmuth Nyborg.
- (18) Letter dated May 30, 2005 from the Dean of Social Sciences Tom Latrup-Pedersen to Helmuth Nyborg.
- (19) Email dated June 7, 2005 (10:01) from Helmuth Nyborg to the Dean of Social Sciences Tom Latrup-Pedersen, with one document attached.
- (20) Email dated June 9, 2005 (10:37) from Helmuth Nyborg to the Dean of Social Sciences Tom Latrup-Pedersen.
- (21) Letter dated June 13, 2005 from the Dean of Social Sciences Tom Latrup-Pedersen to Helmuth Nyborg (It should read algorithm instead of logarithm).
- (22) Nyborg, H. (2005). Sex-related differences in general intelligence g, brain size, and social status. *Personality and Individual Differences*, 39 (Issue 3, August), 497-509. According to the Publisher's information posted online June 8, 2005 and as a file named sdarticle.pdf on the following web-address:
- http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=5897&_auth=y&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=30a0af15b95cc8f39bd3013df0c521c9
- (23) Letter dated November 23, 2005 from the Head of the Department of Psychology Jens Mammen with an account of the case and a request to establish an evaluation committee.

Det Samfundsvidenskabelige Fakultet
Den 7. juni 2006.