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ANNUAL REPORT

The Danish Committees on

Scientific Dishonesty

The Danish Research Agency, October 2003



PREFACE

By Hans Henrik Brydesholt

The term of appointment for members and alternates of the Danish Committees on Scientific Dishonesty (DCSD) expired on 28 February 2003. This time, therefore, DCSD's reporting period covers the period 1 January 2002 to 28 February 2003.

Danish legislation stipulates that DCSD's chairman must be a high-court judge. Since I have now retired from the Danish High Court, I was unable to be re-appointed. Another high-court judge, Henrik Waaben, has been appointed the new chairman of DCSD.

During the reporting period the Danish Committees on Scientific Dishonesty (DCSD) held 11 meetings. Of these, five meetings were common to the three committees. The Committee for Health and Medical Science held three meetings, the Committee for Natural Science, Agricultural & Veterinary Science and Technical Science held two, while the Committee for Social Science and the Humanities held one meeting during the period.

The Committees dealt with 14 cases during the period under review. In two cases the complainants were upheld, in that the actions committed came within the stipulated criteria for scientific dishonesty. In none of the instances, however, was there any evidence of intent or gross negligence. See also the overview of cases DCSD dealt with during the reporting period, on p. 37.

At the beginning of 2003 DCSD published its decision concerning three complaints of scientific dishonesty in connection with Bjørn Lomborg's book "The Skeptical Environmentalist". The decision gave rise to considerable debate. This is particularly due

to the fact that in this, as in so many earlier cases, DCSD applied the standard of "good scientific practice" (GSP). As mentioned, this is far from being the first time that DCSD has applied this standard – compare, for instance, the article on p. 33 ff. of DCSD's annual report for 1995: "The DCSD's Opinion of Actions which are at Variance with Good Scientific Practice and the Definition of the DCSD's Order of Business" *by Daniel Andersen & Hans Henrik Brydesholt.*

The case prompted the Danish Minister of Science, Technology and Innovation to ask the Director of the Danish Research Agency to set up a working party, whose brief was to evaluate whether there is any need to adjust the regulatory basis for DCSD's future work. As DCSD's chairman at the time, I was asked to comment simultaneously on the same question in the light of previous experience. DCSD itself will have an opportunity to present its views at a later date.

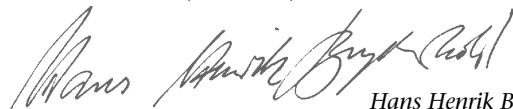
DCSD continues to attach great importance to its preventive initiatives. During the year under review, too, members of DCSD were instrumental in disseminating knowledge of the Committees' work through teaching and public education activities. Giving research environments a knowledge of how to lay down standards for scientific dishonesty and conduct at variance with good scientific practice in this way not merely has a preventive effect, it is also instrumental in consolidating due legal process. The same applies to the articles in DCSD's annual reports, which deal with decisions of more general public importance.

This annual report also contains such articles. In a review article this year, Dr Nils Axelsen, MD, has once again added an international perspective to DCSD's work. There is every reason to thank him for this major contribution, just as there is reason to thank members of ad hoc committees and members generally for the sometimes thankless work which they have so willingly performed in conjunction with DCSD's treatment of cases.

It was the Danish Medical Research Council (DMRC) that took the initiative to set up DCSD in 1992. It soon became an obvious move to expand work so as not only to include medical and health research but also other fields of science. And today there are only very few researchers who could envisage dispensing with the committees altogether.

When the precursor to the present DCSD had been operating for some time, the scheme was evaluated. Now, by the same token, there may be good cause to examine whether there is a need to adjust the regulatory basis for future work.

By the time this report has been published, I shall have retired as chairman of DCSD. I am in no doubt, however, that the future will also see a need for DCSD's work.



Hans Henrik Brydesholt, Former chairman of DCSD

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**RESEARCH INSTITUTIONS' SCOPE FOR
PREVENTING RESEARCHERS
FROM PUBLISHING AN ARTICLE**

By Hans Henrik Brydensholt

A question that has given rise to a number of cases and deliberations is in what instances a research institution is entitled to place obstacles in the way of a researcher publishing research findings.

RESEARCHERS' RIGHT AND DUTY TO PUBLISH

The point of departure is clear. A researcher has both a right and a duty to try to have his or her research results published and hence made available to other researchers and to the public as such. Research is based on the knowledge worked up by previous generations of research. And indeed, the principle of the right and duty to publish is also embodied in the "Guideline concerning the Right and Duty to Store and Use Scientific Data" (clause 2), which will be found in the collection "Guidelines for Good

Scientific Practice", published in 1998 by the former DCSD.

However, not all stakeholders in a research project will necessarily be interested in observing the principal rule set out. A private enterprise financing or sponsoring a research project typically does so with a view to profiting from the result. If the outcome is a usable result, some party will be interested in securing sole rights to its utilization – often by means of a patent. And obtaining a patent is conditional precisely on the knowledge concerned being new, on it not having been published before.

Even if the research proves futile (with no usable results emerging from the trial), the financing company may well be interested in keeping competitors in the dark about not having been able to achieve the desired result through the channels they

have been exploring. Publication of processes with a negative outcome can save competitors having to spend a fortune on retracing the same route.

Any researchers who have made a discovery with economic potential will typically also be interested in securing the proceeds for themselves and will therefore not publish their knowledge until they have secured the right of utilization for themselves or for the party to whom sole rights are assigned. In addition to economic interest, researchers also have another interest – i.e. in the scientific merit that publication would afford. More particularly, of course, this applies to researchers who have been involved in the research project without being involved in the part of the project that can actually be quantified in monetary terms.

It has been attempted to resolve these conflicting interests by applying various codes of practice. I shall not go into detail here about general patent rules and the special scheme that has been implemented for patenting inventions made by publicly employed researchers as part of their appointment. Instead, I shall make do with referring to an article by Hanne Kuktvedgaard, head of section, entitled "Cooperation Agreements between Public Research Institutions and Private Businesses" in DCSD's 2001 report, page 14 ff. On the other hand, there is reason to mention three cases that shed light on the options open to management for placing obstacles in the way of scientific publication in the event that the scope for ex-

ploitation at stake is *not* financial.

MANAGEMENT'S RIGHT TO PREVENT SUBSTANDARD RESEARCH BEING PUBLISHED

The first was a Norwegian case which DCSD was asked to consider as a result of conflicts of interests on the Norwegian Committee on Scientific Dishonesty (referred to as case no. 3 in DCSD's 2000 Annual Report). In brief, the case was about whether a consultant in charge of a department at a Norwegian hospital had acted with scientific dishonesty by opposing the publication of an article by the complainant, a doctor in the department who had collected material for intended publication.

The material had not been collected in accordance with a systematic protocol. The consultant heading the department asked another consultant who was an expert in the field to undertake an evaluation of the project. The expert consultant's statement was critical. Accordingly, the defendant consultant decided that the hospital would not accept publication.

DCSD established firstly that instances such as the one under review clearly *did not involve scientific dishonesty*.

The argument could be based on the reluctance of the consultant cum head of department to publish the intended article, rooted solely in her desire to assure the quality of the scientific work being sent out by the department. Although it is outside of DCSD's remit to undertake

a specialist quality assessment of a research project, then, lack of research quality can play a part when faced with having to evaluate the responsible person's motives for opposing publication and hence the subjective aspect of the standard of scientific dishonesty.

The basic condition for upholding scientific dishonesty, according to Danish Executive Order No. 933 of 15 December 1998, Section 3, subs. 1, is the existence of falsification or distortion of a scientific message or gross misrepresentation about a person's involvement in the research. The provision contains a non-exhaustive list of examples of the actions or omissions covered. The examples listed include deliberately distorted representation of others' results. Certainly, deliberate suppression of others' results will incur the concept of dishonesty if such suppression is committed in order to prevent the scientific message from getting out.

In the Norwegian instance, however, this was not the case. On the contrary, the resistance was driven by the desire to present as a scientific message a message resulting from the collection of non-systematized data that failed to meet the methodological requirements imposed by the health sciences.

There was no scientific dishonesty on the part of the defendant, therefore. But this was not an end to the case. In instances where scientific dishonesty has been reported but DCSD ascertains that the objective and subjective require-

ments of the Executive Order for upholding dishonesty have not been met, DCSD – always assuming that there is evidence of clearly censurable conduct on the defendant's part in accordance with general scientific practice – will make explicit the departure that has taken place from *good scientific practice*. The official authorization for DCSD's practice has been treated in DCSD's 2001 Annual Report (case no. 7) with additional references. It has also become a mainstay of the discussion that has arisen in connection with DCSD's decision on the complaints relating to Bjørn Lomborg's book "The Skeptical Environmentalist".

The issue in the Norwegian case was whether it was in keeping with good scientific practice for the consultant cum head of department to have denied the complainant a chance to publish her article. The complainant's main contention was that it had to be up to a journal and its peer review to decide whether or not an article should be published. It could not be right that the defendant had availed herself of his position to oppose the collation and presentation of the samples collected in an article.

In its decision DCSD referred to the Committee for Health and Medical Science's "DCSD's Guidelines on the Rights and Duties to Store and Use Research Data (1998)". Inter alia, the section on publication says that only quality-related assessments should be taken up: "... scientific managers ... not directly involved

in the research process can be jointly responsible for the quality of the work and the resulting publications, but they should not prevent ... publication on the grounds that the results are possibly unexpected or undesired".

Implicit in this is a research unit manager's joint responsibility for ensuring that a research project affiliated to the department is conducted in a scientifically correct manner. That is to say that the actual research process takes place in accordance with acknowledged scientific guidelines within the research world. In the particular case in hand DCSD deemed it fully justified that, for the sake of quality, the defendant had opposed the use of the samples collected in the department as the basis for an article, which would show that the research had taken place at the department under discussion. According to DCSD's decision, therefore, the defendant's behaviour was not at variance with good scientific practice, either.

In contrast to this outcome, however, is the altogether fundamental consideration for the freedom of research. It may therefore be prudent to emphasize two things:

Firstly, the crux of the Norwegian case was the disregard that had been shown for a rule as basic to the medical and health sciences as having to set up a research protocol. Had it been a question of less grave departures from a recognized scientific method, the balancing of this deliberation against freedom to re-

search would certainly have panned out differently.

Secondly, DCSD established that the Committee's attempts to clear the consultant cum head of department from criticism should not be taken as an expression that the complainant for her part would be acting in a scientifically dishonest fashion, were she to publish the relevant article – provided that she gave an honest and fair account of the objections to the work raised by the hospital. It should be added that DCSD obviously realized when the ruling was delivered that it was bound to be difficult for the complainant to find a recognized scientific journal that would publish an article on these terms.

MANAGEMENT'S RIGHT TO PREVENT PUBLICATION OF A RESEARCHER'S RESULTS IF THE RESEARCHER FAILS TO OBSERVE AN AGREEMENT ABOUT THE WAY THE DATA MAY BE USED

In this case (case no. 6 in this report) the question was whether the steering group managing the data from a major health study had been within its rights to prohibit a researcher from publishing a completed article the main topic of which was the importance of exercising. Apart from the importance of exercising, the article also contained a section on the significance of smoking and the effects of quitting.

It should be noted straight off that the researcher who brought up this case through his complaint later has requested

that the case be resumed and in this context has presented new documentation. Thus the case was not definitively concluded with DCSD's decision in 2002. However, that does not mean that the case – on the basis available in 2002 – is unsuitable for elucidating the problem under consideration here.

The researcher who complained was himself originally a member of a *working party* ("The Exercise Group") on the importance of exercising. However, professional disagreement arose over the contents of a section on tobacco. The other members of the group did not wish to take part in the ongoing work or co-author the planned article. Accordingly, notification was given that no draft of the article could be submitted for publication.

The dispute was later dealt with by the supraordinate *steering group* administering the researchers' use of the dataset collected. There was an overlap between the members of the working party and the steering group. The steering group was also opposed to publication, but no reference was now being made to professional disagreement about the tenability of the section on tobacco. Now the rationale was that the researcher had used the data made available to him in a way that contravened both a cooperation agreement signed and the research protocol on access to data in connection with research into the link between physical activity and mortality. This was later amplified by adding that the steer-

ing group, prior to the dispute, had approved a protocol giving a PhD student authority to use the dataset for a study into cutting down habitual smoking. The exercise group, including the complainant, had not been given permission to include smoking data in any way other than allowing smoking – as was clear from the project description – to form part of the analyses as a simple confounder on a par with a number of other relevant confounders. No scientific reasoning was given for removing the section on tobacco.

The complainant took the view that the resistance to publication was due to his conclusion that the relatively limited importance of smoking made the established health services uncomfortable. His complaint to DCSD, therefore, was actually about the steering group having prevented an unwanted research result from being allowed to get out.

As mentioned in the discussion of the case from Norway, there is no doubt that, objectively speaking, suppression of a research result by an executive body falls within the concept of scientific dishonesty. But, as also stated previously, the motive for opposing publication is also required to be the prevention of a scientific message emerging – and that was indeed the thrust of the complaint.

The case was considered for a long time at DCSD. This is partly due to the defendant having produced a statement that DCSD could only interpret to mean that it was now agreeable for the com-

plainant to publish the article at issue as long as it was done purely in his own name.

After DCSD had ascertained that the conflict was considered to have been resolved, the defendant adjusted his position accordingly, so that it was only the *exercise group's* point of view that the complainant could publish under his own name. *The steering group* continued to oppose publication. Lengthy deliberations ensued, including consideration on an ad hoc committee involving the subsequent exchange of pleadings with a lawyer, who was engaged by the steering group's members in the final phase.

In its decision DCSD felt called upon to note that, for the good of the reputation of research, it is vital not to suppress research results but also not to administer research in such a way as to give researchers or any third parties involved the possible impression that research results might be being suppressed.

Following consideration of the case, however, DCSD was forced to conclude that it had no basis for establishing that the steering group had tried to suppress a research result considered to be uncomfortable. There was no basis for dismissing the steering group's explanation that the ban was driven by the desire to protect the cooperation agreements that had been entered into. Similarly, DCSD was able to accede that substantial datasets – like the ones at issue here – must of necessity be subject to some control. Accordingly, DCSD had no basis for charac-

terizing the interests being safeguarded by the steering group as being unjustified by nature. With reference to the subjective criteria posited, then, the defendant's conduct could not be characterized as scientifically dishonest.

Thus the complaint of dishonesty was not upheld. What remained was the question of whether a researcher should really be prevented from getting his message out for administrative reasons when no scientific criticism had been levelled at his ability to see the research project through.

In its stance on this issue, the Committee based its findings on the complainant's modest analysis of the importance of tobacco, which clearly did not overstep the limits of the foreseeable remit for the research project. DCSD additionally had to note that any publication of the controversial article would not complicate other researchers' work in any decisive way – the latter obviating the defendant's argument that publication might make it difficult for the PhD student to publish her results. Under these circumstances, and weighing regard for a researcher's right and duty to publish against the administrative interests being safeguarded by the steering group, DCSD found that deliberations clearly had to come down on the side of the right to publish.

Hence, the result was that the researcher should have the right to publish the article under review in his own name. Consequently, the protracted handling

of the case as a result of the steering group's position once DCSD had already completed the case and considered it resolved – on the basis of the exercise group's concession that the researcher could publish the article in his own name – failed to produce a different outcome.

Taken as a whole, the two cases show that the research institution's managers have the scope to prevent publication of articles relating to research emanating from the institution, and that such intervention can be justified, based on consideration for the merits of the actual research process and on the practicalities of administering research agreements entered into. The two cases also show, however, that the freedom-to-research interest will normally mean that the researcher in question can try to have his or her results published under his or her own name, always provided that the relevant journal is given honest information that the research institution is not responsible for such publication. As far as I can gather, this in itself will often prevent acceptance for publication. Certainly, within the health and medical sciences, it is common for a journal to require a declaration from the relevant institution at which the research is purported to have been carried out.

THE MANAGEMENT'S RIGHT TO DENY ACCESS TO A DATASET IN ORDER TO PREVENT POTENTIAL MISUSE BY A RESEARCHER

If there is to be any point at all in establishing that researchers are entitled to carry on working on their own initiative if they fall foul of their institution, researchers must have the option of taking their data, or copies of them, with them when they leave the institution.

This falls into line with the rule contained in the "Guideline concerning the Right and Duty to Store and Use Scientific Data", clause 1.2., and DCSD's "Guideline for Agreements at the Initiation of Research Projects, 1998", clause 11. Even in the event of collaboration being interrupted involuntarily, then, the institution's managers must not normally hinder the relevant researcher from taking his material with him from his work at the institution.

But this rule is not written in stone, either. In a case referred to as case no. 6 in DCSD's 1993 annual report, it is established that the management at a hospital department was entitled to deny a researcher the opportunity to take his results with him on the basis of a predicted risk of misuse. The relevant researcher had twice before been guilty of scientific dishonesty. In the process, such doubts had been sown about the scientific integrity of the doctor concerned that the management took reasonable steps to prevent future misuse by denying his request.

**THE RESEARCHER MUST MAKE CLEAR
HIS INTEREST IN TAKING DATA**

The proviso for being able to blame management for preventing a researcher from publishing his or her results is, of course, that someone has *actually* attempted to lay obstacles in the path of publication. In case no. 4 in this annual report, that basic condition had not been met.

It is correct to say that the researcher's material had been destroyed by the institution at which he had previously been employed, but the researcher in question had brought it upon himself. The research institution had good reason to construe the researcher's conduct to mean that he was no longer interested in the material.

**COURT CASE ABOUT THE EFFECT OF EDTA
ON ARTERIOSCLEROSIS OF THE LEGS,
CF. CASE NO. 5 IN DCSD'S 1993 REPORT**

By Henrik Waaben, high-court judge, chairman of DCSD

In 1993 DCSD considered a case concerning two doctors' statements about the effect of EDTA on arteriosclerosis of the legs (peripheral vascular disease). The case was minuted in DCSD's 1993 annual report, case no. 5 on page 43 ff. DCSD dismissed the presence of scientific dishonesty. The disagreement between the parties to the case was subsequently ruled on by the courts. The progress of the case is described below, illustrating amongst other things the courts' reluctance to review and overrule expert medical assessments.

1. DCSD'S CASE 5/1993

A group of doctors and a representative of a patients' association complained about some articles that two doctors had written in scientific journals concerning the lack of effect of ethylenediamine tetraacetic acid (EDTA) on arteriosclero-

sis of the legs. The complaint arose from a professional debate that had been raging for a number of years between doctors using EDTA and vascular surgeons not using the substance. The study described by the articles was the first double-blind study into the effect of EDTA and had therefore attracted international attention. The study had shown that EDTA had no effect on arteriosclerosis of the legs.

The complainants challenged the correctness of this conclusion, asserting that the defendants had misled the public and the health services by having

- used a therapeutic infusion fluid and a method of production and dosage other than that used by the complainants, without making this clear;
- conducted inadequate blinding of patients and investigators despite the

study having been specified as double-blind;

- provided incorrect supplementary treatment.

DCSD's conclusion in the case was that there was no evidence of scientific dishonesty. With regard to the blinding technique the defendants had used in their study, however, DCSD expressed criticism concerning premature opening of the blinding codes. DCSD highlighted that blind follow-up should have been ensured, as should blind calculation of the results, if need be by means of a blind assessor, if it was not possible to maintain blinding for all investigators. But it was not a case of scientific dishonesty.

2. SUBSEQUENT TREATMENT BY THE COURTS

2.1. *Should the case be dismissed by the court?*

A Scandinavian confederation of doctors practising EDTA treatment, represented by one of the doctors behind the complaint made to DCSD, subsequently instituted proceedings against the two doctors at the High Court of Eastern Denmark. The claim was that the complainers (defendants) had to acknowledge that a number of specified statements that EDTA treatment could only be said to be ineffective, based on the defendants' study, were unfounded. The statements in question had been adduced by the defendants in Danish and foreign medical journals, including

Ugeskrift for Læger, and in a number of newspapers. The defendants called for the case to be dismissed. Initially, the case was ringfenced so as to pertain to this issue only, so there was no examination of the statements on their merits to determine whether they were baseless.

The plaintiff called for the case to be proceeded with. In support of this, the party concerned stated that the claim being made was suited to being decided in the courts of law, in that the articles contained damaging and incorrect, and hence actionable, statements which the plaintiff had a legal interest in having declared unfounded. The plaintiff further stated, inter alia, that during the case no stance should be taken on medical assessments, but purely on whether the defendants, for the purpose of their studies and as an incontestable premiss, were able to choose a treatment differing substantially from the plaintiff's treatment and still draw the conclusion that the plaintiff's treatment was ineffective.

In support of the claim for rejection, the defendants stated that the relevant scientific articles detailed the studies the defendants had carried out and the basis on which they had drawn their conclusions. The defendants also asserted that this discussion was of a purely medical nature, its conclusions not lending themselves to judicial review. Amongst other things, moreover, the defendants stated that DCSD had dismissed the possibility of any evidence of scientific dishonesty, and stated that they had not adduced ac-

tionable or defamatory statements that could be made the subject of a declaration of invalidity.

In its ruling of 6 February 1997, the High Court of Eastern Denmark adjudged that the plaintiff's claim presupposed taking a position on one or more differences between the plaintiff's treatment and the treatment covered by the defendants' study; and that any ruling on this matter hinged on a purely medical assessment that did not lend itself to judicial review. The High Court therefore upheld the defendants' call to have the case dismissed.

The plaintiff appealed the High Court's ruling to the Supreme Court, which was split in its ruling of 4 June 1998 into a majority of three judges and a minority of two judges.

The majority stated, *inter alia*, that there was no precluding a priori that the plaintiff might be able to substantiate the incorrectness of the defendants' statements about the effect of EDTA treatment to the courts. Accordingly, the statements might possibly be unlawful in relation to the plaintiff's members. The nature of the plaintiff's claim was therefore not such that it could not be reviewed by the courts.

The minority stated that the defendants' statement that the treatment used by the plaintiff's members was ineffective, was based on a medical study and reflected a specialist medical assessment. This assessment was challenged by the plaintiff with reference to the fact that

the treatment used in the defendants' study did not correspond to the one used by the plaintiff's members. The study could not, therefore, form the basis for any conclusion with regard to the latter treatment, while in general no criticism had been levelled at the way in which the study had been organized and implemented. The minority went on to state that even if a scientific basis were to exist on which to challenge the correctness of the defendants' conclusion, under the circumstances set forth that conclusion could not be regarded as unlawful in relation to the plaintiff. The minority, then, did not deem it possible to issue a declaration of invalidity concerning the statements under review, and on these grounds the appeal to overrule the High Court ruling was quashed.

The High Court's order of dismissal was subsequently overruled and the case remitted to the High Court for consideration on its merits. The High Court of Eastern Denmark's ruling of 6 February 1997 and the Supreme Court's ruling of 4 June 1998 were reported in the Danish weekly law journal *Ugeskrift for Retsvæsen* 1998, page 1,268 ff.

2.2 Consideration of the case on its merits

The case was subsequently heard on its merits at the High Court of Eastern Denmark. The claim on the part of the plaintiff continued to be that the defendants had to acknowledge that a large number of – specified – statements adduced by the defendants, partly about their study

of EDTA treatment and the effects of such treatment, were foundless. The defendants moved for dismissal of the claim.

The evidence presented to the High Court included presentation of references to the literature and articles about studies into the effect of treatment with EDTA, explanatory evidence given by plaintiff and defendant, as well as witness statements given by medical experts and patients who had received EDTA treatment. DCSD's decision in the case from 1993 was also presented during the case.

In a ruling of 26 June 2001 the High Court of Eastern Denmark upheld the defendants' move for dismissal of the claim, whereupon the ruling was appealed to the Supreme Court.

In a ruling of 11 December 2002 the Supreme Court ruled as follows:

"The statements that the treatment used by the EDTA doctors is ineffective is based on a specialist medical evaluation grounded in a scientific study. There is no basis for regarding these statements as unlawful.

After the results of the study, (the defendants) were entitled to advise against treatment with EDTA. It cannot be deemed unlawful that in the public debate on the subject they stated that they had investigated the EDTA doctors' treatment, in that they had the necessary wherewithal for regarding the difference between the treatment being investigated and the

EDTA doctors' treatment as insignificant."

On these grounds the Supreme Court affirmed the High Court's ruling. Final judgement was thereby given in favour of the defendants.

The High Court of Eastern Denmark's ruling of 26 June 2001, including the reasons for the ruling, and the Supreme Court's ruling of 11 December 2002 were reported in the journal *Ugeskrift for Retsvæsen* 2003, page 585 ff., including reproduction of DCSD's decision in the case from 1993 and the statements given by defendant, plaintiff and witnesses.

INTERNATIONAL DEVELOPMENT

By Dr Nils Axelsen, MD, D.Med.Sci., Head of Department

In the international arena an exceptional amount has happened within DCSD's sphere of operation in 2002. The discovery of scientific dishonesty on an unprecedented scale within physics, perpetrated by the very young but top physicist Jan Hendrik Schön, generated shock waves and gave rise to great publicity and much soul-searching.

2002 has seen sharply mounting recognition that scientific dishonesty must be prevented through teaching and the observance of explicit guidelines for good scientific practice/responsible conduct of science/scientific integrity. As previously, the USA and Great Britain are large-scale providers of the comprehensive, open and instructive flow of information.

USA

The Schön case (1-30)

Jan Hendrik Schön was awarded his PhD in *Konstanz* in 1996, gaining employment in 1998 at *Bell Laboratories* – one of the world's most respected industrial labs, owned by *Lucent Technologies*, *Murray Hill, New Jersey*.

His research results within nanotechnology were epoch-making. They included at once wide-ranging practical perspectives and were thus of equally great commercial interest. Amongst others, they included the design of transistors made from single molecules and induction of superconduction in organic molecules. By 2002, at the age of just 31, *Schön* had published more than 100 scientific articles, including a long string of articles in *Science*, *Nature* and other of the most

highly regarded journals in the discipline.

The research was considered by many to be of *Nobel* calibre, and endeavours were made to get him back to Germany as the youngest director to date of a *Max Planck institute*. Other researchers had not been able to replicate his results, but no one imagined that dishonesty could be involved. This was primarily due to the immense confidence that exists in research at *Bell Laboratories*. At the same time, the results had been published in the best conceivable journals. But frustration was growing in research circles.

Thus, in May 2002, it was pointed out that identical figures had apparently been used in a number of the articles. This questioned the reliability of the experiments. Based on this criticism, the management of *Bell Laboratories* formed a committee of inquiry headed by the physicist *Malcolm Beasley* from *Stanford University*. The committee and *Lucent Technologies* agreed that *US Federal Policy on Research Misconduct* represents the American scientific community's consensus on the subject of "scientific dishonesty". It was therefore decided that these provisions, definitions and guidelines should be used, though *Lucent Technologies* was not legally bound by these guidelines, since the research had not been subsidized by federal research funding.

The committee was given a completely free hand and assistance with the inquiry, which for reasons of time was limited to 24 heads of complaint. The indictments included 25 articles, 23 of

which had been published in 2000 and 2001, one in 1998, while one was available in preprint.

Schön was dismissed from *Bell Laboratories* on 24 September, the day before the inquiry report (15) was published. The heading to the report's conclusion was: *Scientific Misconduct and Failure to Follow Accepted Scientific Practices*.

Falsification or fabrication of data had been demonstrated in 16 of the 24 indictments. These actions had been undertaken systematically and intentionally or recklessly without the knowledge of the co-authors. This was feasible because *Schön* conducted the experimental work entirely on his own.

Nor had *Schön* followed accepted scientific practice, having failed to file lab records or preserve original data. By the same token, the instruments and setups designed by *Schön* had been either destroyed during the studies, damaged for other reasons or discarded. Moreover, the committee concluded that there is no ruling out that some of the alleged observations may prove to be physically possible if additional research is done. This does not alter the conclusion of dishonesty, however.

All 20 co-authors of the articles investigated were completely acquitted of any form of scientific dishonesty. They had all complied with accepted laboratory practice within their fields.

In total, the committee uncovered dishonesty in 17 articles, including five published in *Science*, four in *Nature* and

the rest in other journals held in high esteem. In a further six cases there was some suspicion, though this could not be substantiated. The committee noted that the articles investigated represent only a quarter of Schön's scientific output, and that much of the work not investigated also described many scientific breakthroughs.

The committee deemed it necessary to state its views on the responsibility of co-authors. The committee considered this to be a difficult issue, and one to which the scientific community has not yet devoted sufficiently thorough deliberation. The only thing available in print is the guidelines of the *German Research Foundation* (Deutsche Forschungsgemeinschaft, DFG), which briefly establishes that "Authors of scientific publications are always jointly responsible for their content. A so-called 'honorary authorship' is inadmissible".

The committee finds that the expression 'jointly' can be construed as anything from a difficult-to-define collective responsibility to each author being fully responsible for everything in the article. The committee does not agree with the latter, in that it feels that each author's responsibility must be assessed individually according to expertise, seniority and degree of involvement, particularly bearing in mind the growing importance of interdisciplinary research collaboration. The committee urges the scientific community to clarify this important issue. *Science* and *Nature*, and other journals

and news media have reported the case frequently and extensively since May 2002.

For anyone who followed the American and international debate of the 1980s on scientific dishonesty in biomedicine, this will in many ways smack of déjà vu. Here, however, we have been spared the rather inappropriate denial of facts by the research community. On the contrary, it was immediately realized that – within basic natural science research as well – there is cause for vigilance.

Bell Laboratories has deservedly received recognition for its professional handling of the case. The *American Physical Society* quickly revised its ethical guidelines, particularly on its view of co-authors' duties. In the revision, it was established that all co-authors, including senior researchers, have some joint responsibility, but that only one bears responsibility for the whole article (20). This, however, has already been criticized (20). The Society replied that it is open to revision – this is not *Newton's law*, after all (20).

Nature, *Science* and the other journals involved have bent over backwards to have the dishonest articles retracted, insisting – with articulate reasoning – that it is hard to imagine there being any scope for making their review process more effective. What remains is the question of the remaining three-quarters of Schön's publications. At any rate, it must be anticipated that the leading journals

will now tighten their requirements of co-authorship declarations.

Thus this case, which has already gone down in the annals of history as one of the biggest of its kind, is hopefully unlikely to assume major consequences for public confidence in research, as it is only fair to aver that the scientific community has demonstrated openness, volition and vigour here when it comes to keeping its own house in order.

The Ninov case

Into the bargain, the *Schön* case was not an isolated occurrence within physics. Thus, in May 2002, the *Lawrence Berkeley Laboratory* in *California* dismissed the physicist *Victor Ninov*. The dismissal came after an in-house inquiry, which revealed scientific dishonesty in an article in *Physical Review Letters* describing the discovery of elements nos. 116 and 118. The journal retracted the article in July 2002 (31).

Office of Research Integrity (ORI) (32)

The Office of Research Integrity (ORI), the federal authority that deals with health research in the USA and has the greatest experience in the field, recorded 191 reported cases in 2002, as against 196 in 2001 and 173 in 2000.

In 2002 *ORI* completed 30 cases. Dishonesty was ascertained in 13, while completion of 25 cases at *ORI* is pending. Of these, 90% contain local investigative authorities' conclusions about dishonesty. That might indicate that the num-

ber of investigations being concluded with a finding of dishonesty is on the increase. *ORI's newsletter* features resumés of the often spectacular cases, including the names of the guilty parties and the federal sanctions. The resumés do not contain information about the local sanctions.

ORI, according to its mandate, goes to great lengths to promote "responsible conduct of research" (RCR) (good scientific practice). Throughout the world, this activity is considered to be the only possible way of fostering the integrity of research – and hence also the quality of the way research is conducted.

The reason is that researchers' dishonest actions are probably not just "a flash in the pan", and that things may start on a small scale. There is therefore a need to disseminate knowledge about good scientific practice. In order to obtain a surer footing to work on, *ORI* – likewise in keeping with its mandate – has also initiated research in the field. Two research conferences have been held on the topic, the most recent one in autumn 2002.

ORI's homepage (32), contains detailed information about meetings, teaching programmes, workshops, publications and other relevant material about its activities. In 2001, in its report entitled "Analysis of Guidelines for the Conduct of Research Adopted by Medical Schools or their Components" (32), *ORI* demonstrated that the institutions' present guidelines leave much to be desired as regards setting goals for and involving

the group they actually target – the researchers. The guidelines are most specific in respect of legal questions and financial conflicts of interest. Thus, it was clearly documented that more of a systematic effort needs to be made in this field, including setting objectives for the documentation of the effect of endeavours to promote "responsible conduct of research".

ORI therefore asked the highly respected *Institute of Medicine (IOM)*, which comes under the *National Academy of Sciences*, to define the core components of the concept of research integrity and produce recommendations for ways of fostering such integrity. In July 2002 *IOM* published its report "Integrity in Scientific Research: Creating an Environment that Promotes Responsible Conduct" (32). With its in-depth investigation into the problems, the report is a *sine qua non* for anyone intending to delve into the subject today. The general conclusions of the report are that:

- it is important for the public, researchers, research institutions and science itself to have attention focused on issues pertaining to scientific integrity;
- no methods exist for evaluating the scientific integrity of research environments;
- policies and procedures need to be promoted and followed, but this is not enough to guarantee good scientific practice;
- there is a lack of evidence to defini-

tively support any one possible way of promoting and evaluating scientific integrity;

- teaching in good scientific practice is necessary, but unless done appropriately and creatively it will probably only be of modest help and possibly even ineffective;
- institutional self-evaluation is a promising way of being able to measure and continuously improve scientific integrity.

With these two and other reports, *ORI* has provided documentation and pointed out part of the continued way forward in this field, where its impact is largely dependent on the researchers' understanding, acceptance, cooperation and involvement.

The latter report was discussed in a leader in *The Lancet*, which noted that we have now moved one step further away from dealing with individual incidents of scientific dishonesty towards the actual objective: developing responsible research conduct (34). The leader predicts that many research managers will resist even more bureaucracy and find reasons why this is not practicable – or will be ineffective. But at the same time it establishes that there is no way around this if research is to be of high quality *and* retain the trust of the public. A leader in *Nature* puts it this way: "It is in the interests of every university and laboratory to help students think through the long-term consequences of what may first ap-

pear to be minor violations of integrity. Ultimately, such early consideration will be good for institutions, good for the careers of young researchers, and good for science itself" (35).

With the intense activity involved in investigations of alleged dishonesty, a great, unfamiliar responsibility is imposed on the many people who become members of investigative committees. To this is added an often unexpectedly voluminous, protracted and not rarely un-savoury workload.

This is dealt with in an interesting article in *Nature*, where some of those instrumental in investigating some of the big cases openly and candidly tell of the problems this work can create for committee members, including tremendous – and occasionally hostile – publicity, threats of legal action etc. *Paul Friedman* from *UCSD* opines that since the problem of dishonesty cannot be solved by halting the increasing competition in research, dishonesty must be combated by stopping minor breaches of good scientific practice before they attain the size of dishonesty: "Nobody arrives at fraud as the first thing they ever do ... They got there by doing little things and getting away with it" (36).

Although there are (naturally) critics, there is no doubt that most people support *ORI's* work of promoting good scientific practice. In the same way that large trade and finance scandals in the *USA* were seen to shake vital parts of society in 2002, major cases of scientific

dishonesty shake the scientific community. The arguments for and against what should be done about it are also the same. A leader in *Nature* sounds a warning note: "Most researchers are honest and not wealthy, and are not surprised to learn that corporate America is full of rogues. Before drawing too much comfort from their come-uppance, however, it would make sense to ensure that research has its own house in order" (37).

In the stream of information from the *USA* it should be mentioned that the *New England Journal of Medicine* has had to slacken off its requirements concerning leader writers' conflicts of interest in cases dealing with the evaluation of publications about drug trials, as it is ordinarily hard to find experts for the task. The limit is drawn at ownership of shares, share options and patents, or an income from the company of more than \$10,000 for two years before the review is published (38). – Two researchers from *UCLA* have examined 4,300 quotations from an article about solid-state physics from 1973. They found that the misquotations were often identical. Their examination also indicates that only 22-30 percent of the quotations are due to the researchers having read the original article. This is postulated to be typical of scientific literature as a whole. This is not dishonest, but a departure from good scientific practice (39). – Blowing the whistle and acting on a hunch of scientific dishonesty can be very stressful. This was studied by *ORI* in 1995 (32). An instruc-

tive review of a whistleblower's experiences and advice to researchers thinking of becoming whistleblowers has been published in *The Scientist* (40). *The Association of American Medical Colleges (AAMC)* has drawn up new guidelines, in which universities are recommended to preclude researchers from taking part in clinical trials financed by private companies whose researchers have a substantial financial interest in the outcome of the research. *AAMC* thus hopes to have prevented more drastic intervention on the part of the government (51).

EUROPE

GREAT BRITAIN

As mentioned in *DCSD's* previous annual reports, there was agreement amongst the interested parties at a meeting in 1999 to recommend the creation of a national body whose purpose would be to coordinate national efforts to document instances of scientific dishonesty, provide advice on how to investigate cases and to develop the prevention of dishonesty in the health sciences in Great Britain.

The stakeholders involved were the *General Medical Council*, the *Royal Colleges*, the *National Health Service*, the *Faculty of Pharmaceutical Medicine*, the *Association of British Pharmaceutical Industries*, *COPE* and the journal publishing houses. Early in 2002 the stakeholders decided that the *Academy of Medicine*, under the

supervision of its chairman, *Sir Peter Lachman*, would be spearheading efforts to create the underlying basis for such a national panel.

At *COPE's* 4th meeting in October 2002 *Peter Lachman* reported the progress of the work. After many years' discussions, therefore, things in the field are now moving, though *COPE* is not entirely satisfied with the provisional result (41). *Peter Lachman* seems to have adopted the standpoint that the issue is about replacing the "trust culture" of research with an "audit culture", and that this will have a detrimental effect. To this, *COPE's Michael Farthing* has replied that although there is trust in doctors, their practice will still be subject to audit, and that it is hard to understand that research-related dishonesty should be any different to financial dishonesty (42). *COPE* is pursuing its work, which can be studied on the organization's instructive homepage (41). The slow pace at which things are moving in Great Britain compared to developments in the USA has been criticized by the *Lancet* (34).

In the *British Medical Journal (BMJ)* *Peter Wilmshurst*, a whistleblower of great personal vigour, has published a series of details about the *Banerjee* case, documenting the protracted and agonizing progression of the case under the heading of "Institutional corruption in medicine". He starts off with a quote from *Edmund Burke*: "For the triumph of evil it is only necessary for good men to do nothing" (43).

It is a powerful article, which accuses a number of named individuals and institutions of serious acts of negligence over many years. *BMJ's* editor, *Richard Smith*, follows up the article with a remark that when he gives a lecture on dishonesty, more than half the audience have personal experience in the field, but hardly a single one has any experience of this having been properly looked into. He also says that until recently he believed that integrity was something one had and was only able to lose as a result of poor conduct. Now he thinks of integrity as something one has to fight to keep on a daily basis. We are constantly being presented with problems where the simplest thing is to give answers that do not contain the whole truth. Most of us succumb – but a few like *Peter Wilmshurst* do not (44).

Against the current backdrop, a leader in *The Lancet* (45) takes up the question of journalists' treatment of scientific articles in the mass media. Journals demand that journalists who manage to have articles sent to them before publication, and hence have time to talk to the researchers, do not publish in the mass media before scientific publication has taken place. This has the advantage that any comments in the mass media can be based on the researchers' own evaluation of the original article – not merely on knowledge gleaned from the mass media. This ought to help put pay to a number of misunderstandings.

Despite this, *The Lancet* writes, "health

scares" conveyed by the mass media are a common phenomenon due to shoddy journalism. And the phenomenon is a big problem for doctors and researchers. On 26 March 2002 the *Royal Society* therefore published guidelines for both journalists and researchers, showing for example that a relative risk of disease may only be presented in the mass media if the absolute risk is also mentioned (46).

The National Health Service (NHS) tackles this problem through the *National Electronic Library for Health* (47), where readers can look under "Hitting the headlines". This provides a review of selected articles discussed in the mass media by researchers at the *NHS Centre for Reviews and Dissemination, University of York*, so that methodological considerations and reservations etc. are made accessible to everyone by rendering them in everyday, comprehensible language, at the latest 48 hours after being discussed in the mass media. This service is invaluable today, when doctors frequently have to explain to concerned patients what the mass media have been saying about new research results.

A leader in *Nature* (48) deals with "Trust and how to sustain it". The backdrop to the leader is the fall-off in the public's confidence in the professions and traditional institutions, as well as the events of 2002.

Scientific dishonesty is rare. And so far it has only dented the image of research, not damaged its long-term substance.

But the graver problems of the *Catholic Church* ought to provide food for thought. In an opinion poll from 2002, trust in priests telling the truth had fallen from 90 percent to 64 percent in a year. The public expects researchers – like priests – to have high standards. The point of research is to serve the truth and to grow our common knowledge. Research must not serve self-protection and profit. It was precisely by putting self-protection first that the *Catholic Church* plunged itself into great difficulties.

Public trust in research can also be weakened by people using scientific uncertainty for political ends – like sowing doubts about the likelihood of global warming or evolution. A handful of ‘sceptics’ making TV appearances can confuse a public that expects unshakeable truth from research. The only thing researchers can do is to explain that scientific ‘truth’ changes in the light of new evidence, and thus explain to the public the nature of science. The public has few places to turn for objective and neutral information in a society increasingly being controlled by market forces and spin, in which the mass media – the main source of information for most people – are increasingly biased. Science is of great value to society in this respect. And researchers have to be careful not to lose the trust and confidence of the public, or to allow others to undermine it, say *Nature’s* editors (48).

On 17 October 2002 the *Association of Medical Research Charities* (AMRC) sent a

strong signal to health science researchers in Great Britain in the form of new guidelines for good scientific practice, guidelines that must be followed if they are to qualify for support (49). AMRC consists of more than 100 private organizations, including the *Wellcome Trust* and the *Cancer Trust UK*, which together support health science research in *Great Britain* and *Ireland* to the tune of more than £600m a year. The guidelines include a great many stipulations imposed on researchers and the institutions at which the funded research is being conducted.

Amongst many other things, the guidelines contain a series of specific requirements for the researchers and institutions governing the dissemination of research results through mass media, AMRC’s members being “fed up with the fallout from over-hyped or misleading results” as the outcome of researchers’ premature contact with the press on results that have not been peer reviewed.

Researchers are therefore ordered to refrain from communicating anything other than peer-reviewed results to the press. And if non-peer-reviewed research is communicated, its status must be made abundantly clear (50). AMRC recommends to its members that as from 1 January 2003 they support only researchers at institutions with guidelines for good scientific practice, whose substance takes into account all the requirements outlined in AMRC’s guidelines. According to AMRC’s *chief executive*, Di-

ana Garnham, the institutions have responded most positively to this and are now collaborating with AMRC to match up to these requirements (52).

GERMANY

The German Research Foundation (*Deutsche Forschungsgemeinschaft, DFG*) (53) has published extensive guidelines for "responsible science" and from 1 July 2002 will make research funding awards conditional on the institutions where the research is being conducted having guidelines in place for good scientific practice and the investigation of complaints (54).

In addition, *DFG* requires each institution to have appointed an ombudsman, to whom researchers can address any queries. The ombudsman provides researchers with guidance and undertakes a preliminary evaluation before taking a stance on whether complaints concern matters that should be subject to an investigation proper. In that case, he will approach the institution's management, who will head the investigation. There are some one hundred ombudsmen in *Germany*, and their experiences are to be discussed at an ombudsmen's conference in autumn 2003.

Apart from the local ombudsmen, *DFG* has a council of three ombudsmen, with Professor *Hans Heinrich Trute* as their spokesman. Researchers receiving support from *DFG*, however, can apply to the *DFG* ombudsmen's institution direct, bypassing the local ombudsmen.

In 2002 the three ombudsmen considered approx. 40 enquiries, to which they devoted a substantial proportion of their working time (55). It is Professor Trute's estimation that frequent use is also made of the local ombudsmen, but the first evaluation of the system will not be until autumn 2003 (55).

DFG itself undertakes assessments of – and, where necessary, also investigates – cases subject to local investigation, and cases when *DFG*-subsidized researchers are involved. Given the stonewalling by researchers involved in the great *Hermann-Brach* case, discussed in *DCSD*'s previous annual reports, *DFG* would view it as an admission of guilt if it were to meet with any unwillingness to collaborate in such cases (57).

Many of the 94 articles around which the *Hermann-Brach* case revolved have still not been retracted. In this context, *Nature* has demonstrated that many journals lack a policy for retracting articles (56). *DFG*'s president, *Ernst-Ludwig Winnacker*, is extremely dissatisfied, incidentally, with the relatively few repercussions the *Hermann Brach* case had for those implicated, including the fact that *Roland Mertelmann* is still head of department at the *University of Freiburg*. *Winnacker* feels that this lack of sanctions is highly detrimental to public confidence in research in *Germany* (57).

An article published in *Nature Medicine* by 15 researchers in *Göttingen* and *Tübingen* showed sensational tumour regression in patients exposed to immunologi-

cal treatment. The work received coverage in the mass media worldwide. However, immediately afterwards, it became necessary to investigate the case following the filing of an anonymous report. The committee of inquiry concluded that it was a case not of dishonesty, but of sloppiness and deviation from good scientific practice, committed by one of the 15 researchers. The other 14 authors were found to be blameless (58).

Two molecular biologists at *Göttingen University*, *Frauke Alves* and *But Ledwon*, ended up in court because *Alves*, contrary to a prior agreement, had set herself up as first author instead of *Ledwon*, who brought the action.

The court upheld *Ledwon* – not after assessing the relative contributions to the work by the parties involved, but because the verbal agreement that *Ledwon* was supposed to be first author had not been contested during the 14 months the research work was in progress. This constituted an implicit contract, which *Alves* had breached. *Göttingen University* did not wish to comment on the case (59).

SCANDINAVIA

In *Norway* work on the *National Committee for the Evaluation of Dishonesty in Health Research* has been at a standstill since the beginning of 2001, pending a decision by the *Norwegian Ministry of Education and Research* to set up a committee that covers all specialist areas, as in *Denmark* (60).

In *Sweden*, as far as is known, the situ-

ation has not been clarified either, following restructuring of the research councils there. It has recently been suggested that *Sweden* ought perhaps to introduce an ombudsman system modelled on the *German* one.

Finland is highly functional in this field, as described in previous annual reports. In 2002 the *National Advisory Board on Research Ethics* sent out a new guideline "Good scientific practice and procedures for handling misconduct and fraud in science". The Finnish research institutions have endorsed their willingness to abide by these guidelines (61).

In *Iceland*, as far as is known, there is still no great interest in becoming engaged in this field.

THE REST OF EUROPE

An article from *La Sapienza University in Rome* was retracted by the *New England Journal of Medicine (NEJM)* because it contained a manipulated figure from an article in *The American Journal of Cardiology*. The authors themselves refused to withdraw the article. It should be noted that *NEJM's* action contrasts with the majority of dishonest articles in the *Herman-Brach* case not yet having been retracted (62).

A former Post Doc at the *University of Zurich* blew the whistle on a manuscript that had been sent to *Science*. The thrust of the complaint was that data had been manipulated and the complainant was listed as a co-author without having given her approval. The article was immediately withdrawn, but the case was

discussed in the *Süddeutsche Zeitung*. A subsequent investigation concluded that the manuscript was misleading, and that it constituted an infringement of good scientific practice. The principal of the institute, Nobel prize winner *Rolf Zinkernagel*, who was not a co-author, says that the damage done to the institute's reputation in this case is great. The manuscript was not published, however, so no damage was done to science as such (63).

In an article in *Human Immunology*, *Antonio Arnaiz-Villena*, who is also chairman of the *Spanish National Commission for Immunology*, had studied the genetic profile in Palestinians as compared with Jews and other populations in the region. The article contained a resumé of the Israeli-Palestinian conflict, including the statement that *some Palestinians* were living in concentration camps. This gave rise to vehement complaints. The editors withdrew the article and dismissed *Arnaiz-Villena* from the journal's editorial board. As far as is known, this is the first time an article in a peer-reviewed biomedical journal has been retracted as a result of political comments. *Arnaiz-Villena* was later accused of financial misappropriation for an amount in the order of €860,000 – 3,900,000 (64).

During the period 1989-93 the *Dutch* neurologist *H.J. Gelmers* falsified 438 patient records in a European clinical trial for the company *Boehringer-Ingelheim*. For his involvement, *Gelmers* received €272,000, which was not declared to the tax authorities. His defence counsel said

that a psychiatric report showed *Gelmers* to be suffering from impaired judgement during the period in question. The court fined him €130,000 and 180 days' suspended prison sentence if he failed to pay the fine (65).

The *Committee for Ethics in Science* under the *Polish Academy of Science* circulated its 3rd revised version of "Good Manners in Science in 2001. A set of principles and guidelines". The 32-page booklet first appeared in 1994 and has proved a success. In *Poland* scientific dishonesty is a problem that extends from plagiarism to the buying and selling of master's and PhD dissertations. Investigations into complaints are conducted locally and are not the task of the Academy. The *Polish* scientific community seems to be rather reticent when it comes to condemning certain instances of misconduct. The *Academy* has no statistics in the field (*Szwarski, Z.*, personal communication).

CHINA

In March 2002, after three years' spade-work, *Beijing University* passed the first detailed rules in *China* whose purpose is to eradicate "research misconduct". Apart from plagiarism, falsification and fabrication, the rules cover broader subjects relating to the misuse of scientific information. The definition includes: "intentionally exaggerating the academic value and economic and social results of a research finding; publishing results without appraisal from school authorities or other academic organizations ... and disclosing

research findings that should be kept confidential according to the country's laws and regulations".

The rules are considerably more explicit and practically orientated than those previously adopted by *the Chinese Academy of Sciences and the Ministry of Education*. They also take in procedures for investigating complaints and the sanctions to be applied (66).

JAPAN

The *Science Council of Japan* has formed a committee mandated to draw up guidelines on 'misconduct'. Emphasis is given to the importance of researchers also being able to protect themselves against false accusations, which is not currently possible. The *Japanese* do not take kindly to whistleblowers, but following a series of scandals in industrial and government circles, some solution to this problem is now called for (67).

COMMENTARY

2002, then, has seen a great focus on the type of problems that led to DCSD being set up in 1993 and, as will be evident, there has been no shortage of contributions, papers and views on scientific dishonesty in 2002.

Concurrently, it must be noted that the scientific community has clearly documented the will and dynamism to tackle many of the difficult and often disagreeable problems. It is encouraging, too, that the open and instructive portrayal of such problems and their solu-

tions from American and British quarters in particular is alive and well, thanks to the leading journals and *ORI*. But many countries' voices are still missing in the ongoing exchange of information and opinions.

It will be interesting to follow *Germany's* experience with the institution of the ombudsman. The need to establish and comply with explicit guidelines for good scientific practice seems to have filtered through in many countries. The problem now is to get it to percolate to everyone in the research environments. In this context it is noteworthy that the biggest granters of private funds in *Great Britain* are now making subsidization conditional on researchers and research institutions complying with explicit guidelines for good scientific practice, including requirements governing their dealings with the mass media. *AMRC* with the *Wellcome Trust* at the head, like *DFG* in Germany, has lost patience.

However, there is still a lack of more concrete knowledge in the field. *COPE* continues to call for a powerful central initiative in Great Britain. The only place where knowledge is being gathered and research in the field is being done across a wide front is the *USA*, though we have openness and a good overview of cases being reported in *Finland* and *Denmark*, and will hopefully soon have so again in *Sweden* and *Norway*.

Thus, there is much to indicate that considerable advances in the field will be made in the years ahead.

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CASES CONSIDERED IN 2002

CASES RULED ON FOLLOWING INVESTIGATION

Cases carried over from 2001

Case 1

Complaint about the alleged plagiarization of the complainants' experimental setup and article as well as publication of the same without the complainants' consent or knowledge (case no. 12 in DCSD's 2001 report).

In August 2001 the Danish Committees on Scientific Dishonesty (DCSD) received, for information purposes, a copy of the complainants' letter to a foreign professor and head of a research institute containing a complaint about a young researcher employed at the same place who had been a visiting researcher at the complainants' institute for some time.

In December 2001 the information notice was replaced by a formal complaint to DCSD's Committee for Natural Science, Agricultural & Veterinary Science and Technical Science. The complaint was subsequently subjected to the standard processing of complaints, after which the decision was made on the basis of the material received as part of the case.

It emerged from the case that the foreign visiting researcher was not publishing research results together with members of the Danish group but was writing a report on his experiments. By chance the complainants discovered that the defendant had published at least two articles in 1999 containing a very substantial number of results of research which had not been carried out by the defen-

dant and had been published by the complainants in international journals in 1998. The complainants stated that the defendant had copied experimental data from their articles and published these under his own name without first obtaining permission from the complainants and without alluding to the complainants' work.

The defendant, for his part, maintained that although one of his articles in a foreign scholarly journal was published in 1999, the manuscript had been submitted for publication in October 1997. He further maintained that the article dealt with research which he had conducted partly in Denmark and partly in his homeland. The second of the two articles was published in a foreign journal in 1999, but the manuscript had already been submitted in June 1998.

The complainants found that the defendant's work was not original, however, as he had merely repeated the complainants' work and used their experimental test setup. Furthermore, they did not consider the time the manuscript was submitted for publication to be crucial, partly because the complainants' article, unlike the defendant's, contained the complete model development. Finally, the complainants pointed out that their article had been submitted for publication in August 1997, whereas the defendant's article on the same topic was not submitted until June 1998.

DCSD's Committee for Natural Sci-

ence, Agricultural & Veterinary Science and Technical Science heard the case at a meeting in June 2002. The Committee found that, as stated by the complainants, the defendant's articles did include plagiarization of others' results and inappropriate credit as author. Objectively speaking, then, there was evidence of scientific dishonesty, as set out in Section 3, subs. 1, clauses 6 and 8 of the Danish Executive Order on the Committees on Scientific Dishonesty.

DCSD, however, did not deem it possible to dismiss the defendant's claim that this infringement was due to ignorance of the standards applicable to publication of results in the western scientific tradition. As a result of these subjective considerations, there was no basis for characterizing the defendant's conduct as scientifically dishonest.

Prompted by this case, DCSD considered it imperative to recommend that Danish research institutions receiving foreign researchers for a period of study make sure at the start of such a stay that the researcher concerned is familiar with the rules of good scientific practice recognized in Denmark.

In accordance with this, DCSD made the following ruling: *In publishing two articles, the defendant had displayed conduct which could only be characterized as scientifically dishonest in objective terms. However, since any findings had to be based on the infringement having been due to a lack of information about the standards applicable to publication of results in the western*

scientific tradition, the defendant was cleared of the accusation on these subjective grounds.

Case 2

Resumption of a case of alleged wrongful dismissal of a case considered by DCSD (case no. 3 in DCSD's 1999 report and case no. 18 in DCSD's 2001 report).

In 1999 DCSD's Committee for Health and Medical Science received a complaint from a retired doctor and consultant, accusing a researcher with whom he had previously collaborated of having fabricated data. By way of documentation the complainant sent a document whose appearance was suggestive of a patent application. The case was dealt with at a meeting of DCSD's Committee for Health and Medical Science, which did not consider the case suitable for further consideration. See also Case No. 3 in DCSD's 1999 report.

The complainant found DCSD's rejection of the case unwarranted and brought DCSD's ruling before the Danish Ministry of Science, Technology and Innovation. The Ministry dismissed the complaint on the grounds that it is not the appellate authority for decisions made by the Danish Committees on Scientific Dishonesty.

In April 2001 the Danish Parliamentary Ombudsman, in a ruling dealing partly with the right of appeal to the Ministry of Science, Technology and Innovation on legal issues, set out his view "that Section 4 m of the *Danish Act on*

Research Advice (Consolidation Act No. 676 of 19 August 1997) establishes per se that complaints can be filed with the Ministry of Science, Technology and Innovation regarding legal questions relating to rulings made by the government research councils, the Board of the Danish Research Councils or committees formed by the same, including DCSD".

On this basis the case was taken up by the Ministry of Science, Technology and Innovation, which in a letter of 2 July 2002 referred the case for renewed consideration by DCSD. One of the reasons this happened was because DCSD had not examined the circumstances stated by the complainant in his request for resumption. In reply to an enquiry from DCSD, the parties to the case advised that they considered the case to have been thoroughly examined and capable of being decided on the pre-existing basis. Vis-à-vis the Ministry, the complainant maintained the following three points as the basis for his request to have the case resumed:

- 1 the basis from which DCSD derives its authorization does not stipulate the need for the existence of any scientific article
- 2 the court case referred to in the complainant's complaint had no direct link with the complainant's complaint and
- 3 a statement from a consultant could not be correct.

Following discussion of the case files at a meeting in October 2002 on DCSD's

Committee for Health and Medical Science, consensus was reached on the following:

re 1) DCSD considered it correct that Section 3, subs. 1 of the Executive Order on Scientific Dishonesty does not stipulate the existence of a scientific article in the case. However, Section 2 of the same provision shows that "In order to label a conduct as scientific dishonesty, it must be possible to document that the person in question has acted deliberately or exercised gross negligence in connection with the activities under consideration." In DCSD's opinion the concept which the complainant described as a negotiated draft of a scientific article gave the appearance of a patent application.

Irrespective of the executive order not stipulating the existence of a scientific article as evidence of scientific dishonesty, DCSD still failed to find that the available case files could warrant consideration of the case on its own merits, cf. Section 3 of the executive order. DCSD added that, on the available basis, the case could not be assumed to be of importance to Danish research either; and that, a priori, it had to be regarded as unlikely that the complainant's claim could be upheld, cf. Section 2 of the executive order.

re 2) As for the complainant's argument that the court case referred to in the case had no direct link with the complaint, DCSD referred in part to a quote in the 1999 letter of complaint, according to which the defendant, in direct reply to

the judge's enquiry, "altogether denied having ever undertaken the studies that had been described in a draft and reported to the complainant ...". Moreover, the same letter of complaint showed that the complainant's dissatisfaction with the defendant's explanation in court was altogether key to his approach to DCSD.

Finally, DCSD stressed that it is an investigative body whose primary purpose is to assess whether, on the basis of the explanatory statements obtained from the parties involved, there is evidence to show that the defendant's conduct can be labelled as scientific dishonesty in the event of a specific complaint. Unlike a court of law, DCSD cannot question or examine the parties to the case under oath and cannot award a party damages or other compensation, e.g. for loss of rights to a patent, as a result of incorrect information.

re 3) In considering the case in autumn 1999, DCSD obtained a declaration from a consultant referred to in the case. It appeared from this that the research project discussed had never been begun, as the Danish National Board of Health was not willing to grant the necessary funding. DCSD found itself unable to disregard this piece of information.

The conclusion was thus that DCSD still did not feel able to assess the complaint on its own merits. DCSD sent a copy of the decision in the resumption case to the Danish Ministry of Science, Technology and Innovation.

Cases received in 2002

Case 3

Premature discussion of research results with a complaint about deliberate distortion of a scientific message.

In April 2002 a specialist group within the health sector complained about a doctor attending a specialist meeting at a hospital discussing the unpublished results of studies when arguing his views in a professional dispute. The complaint was subjected to the standard complaints handling procedure. DCSD's Committee for Health and Medical Science subsequently made its ruling on the basis of the material that had been received in the case.

DCSD considered that it was not its job to take a stance on who was right in a scientific discussion. The task was solely one of deciding whether the defendant's conduct bore the nature of scientific dishonesty or was at odds with good scientific practice.

As regards premature discussion of research results, DCSD stated that medical science results should normally be presented for the first time in scientific societies or in scientific/academic journals/reports, providing full documentation.

In the case in hand, DCSD considered it clear that there was no intentional distortion of a scientific message. Nor had the defendant displayed gross neglect in his discussion of his experiences. There was, therefore, no instance of scientific

dishonesty, cf. Section 3 of Danish Executive Order No. 933 of 15 December 1998.

DCSD further stated that caution needs to be exercised in equating a statement given in a forum for the exchange of experiences between peers with a scientific publication. In the case under review, the fact that the case concerned the discussion of special-risk facilities and studies also played a part. The researcher here has a duty to exercise care in ensuring that exceptional precautions are observed, cf. Danish Executive Order No. 935 of 16 December 1998.

According to the information available to DCSD about the form of the meeting and the defendant's contribution, the Committee did not consider the contribution to have been of the nature of the published result of a scientific study, such that the defendant was obliged to keep his experiences to himself until an article on the subject had been subjected to the professional scrutiny customary within the health sciences prior to any discussion in public. Nor, then, did DCSD find any basis for criticizing the defendant for having acted at variance with good scientific practice. In accordance with this, DCSD delivered the ruling that *the complainants could not be upheld in their claim.*

Case 4

Complaint from a member of research staff whose employment at the institute con-

cerned had ceased and who was denied access to data in a database to which the person in question had contributed during the course of his appointment.

In April 2002 DCSD received a complaint from a researcher who had been employed as a researcher at a government research institute for 13 years. After his appointment ceased, the researcher asked to be given access to data in a database he had contributed to during his appointment, but the request was declined.

The complaint, which was subjected to the standard complaints procedure, referred to three factors:

1. The researcher had been asked by an international organization (WHO) to contribute to a work which WHO wished to publish and which would contain the salient results of an international research project. To this end, the complainant asked for access to his own earlier memoranda, notes, data files and references. He was refused this on the grounds that the institution was not allowed to supply "data to non-employees".

2. Prior to leaving, the complainant had submitted a manuscript for an article to an international specialist journal. The article had been accepted for publication, subject to some corrections. The complainant, however, was not in a position to resubmit the article as the institute had not responded to his approach concerning the article and related "materials, covering letters, drafts, files and so on".

3. Finally, the researcher complained that the institute's homepage, which "was under construction at the institute", referred to a project that the complainant had long since completed and on which he had had an article accepted for publication in an international journal.

The defendant stated, re the *first head of complaint*, that in a document of August 2001 called "handing-over procedure" the complainant had said: "Chapter contribution by undersigned to WHO's book publication cancelled". The research project was supported by the Danish Medical Research Council, who agreed to transfer the research project to the new head of the institute, as well as extending the project period. In addition, in November 2001, the complainant had asked to be issued with a number of listed personal belongings, including private directories and sub-directories from the researcher's own PC, following which the computer was cleaned and is now being used by another user. The material the researcher asked about was thus no longer available at the institute.

As regards the *second head of complaint*, the institute also referred to the above-mentioned "handing-over procedure". The project had been erased by the computer, the reference to the project on the institute's homepage had been deleted and the material was no longer at the centre.

On the *third head of complaint*, the institute reported that the chief author of the relevant article had stated that the article had been accepted for publication and the last author had given his approval for the reference to the project to be deleted on the homepage, which was done.

After lengthy correspondence between the parties, the complainant submitted a new complaint about the institute in September 2002. DCSD, however, notified the complainant that it was not considered right to include this complaint in the case under review. If the complainant insisted on having the complaint dealt with, this would have to be done in the form of a new case.

DCSD noted the following points on the *original* heads of complaint:

re 1) It is clear from Section 3, subs. 2 of Danish Executive Order No. 933 of 15 December 1998 on the Danish Committees on Scientific Dishonesty that “in order to label a conduct as scientific dishonesty, it must be possible to document that the person in question has acted deliberately or exercised gross negligence in connection with the activities under consideration.”

Regardless of the fact, as the complainant maintained, that there may have been some misinterpretation of the complainant’s acknowledgement in the “handing-over procedure” of August 2001, DCSD found it clear that the institute had not deliberately acted in a sci-

entifically dishonest way or displayed gross negligence in deleting whatever of the complainant’s material had not been handed over to him in accordance with his request in November 2001. DCSD added that there was no basis for doubting the correctness of the defendant’s information that the material was no longer available at the institute.

re 2) For the same reason, deletion of the material for the article could not come under the concept of scientific dishonesty.

re 3) The fact that the reference to the project and the article was only deleted after approval on the part of the co-authors specified could not give rise to criticism.

In accordance with this, DCSD ruled that *the complainant could not be upheld in his claim*.

Case 5

Case about an abstract forwarded without the co-authors’ endorsement and without rectifying the error before presenting the abstract at an international meeting.

In June 2002 DCSD’s Committee for Health and Medical Science received a complaint from a researcher who discovered that, at an international meeting in Sweden in May 2002, the defendant was using an abstract which had been withdrawn from an international meeting in the USA by the research team of which both the complainant and the defendant were members. The com-

plainant had brought it to the notice of the defendant that it was incorrect to state in the abstract that 27 patients had been treated as part of the project. This incorrectness consisted of 17 of the treated subjects having been treated before the protocol had been approved. There was no way of knowing, therefore, that they had given their informed consent to take part in the project. Ten of the patients had been treated after the protocol had been approved. It should have been set out in the abstract that 10 patients had been included in the project, that 17 patients had been treated in the same way, but outside of the protocol, and the calculation should have made a distinction between the groups.

The defendant acknowledged the error in not having the abstract corrected, but made excuses on the grounds of the hastiness that had beset his preparations for the meeting, the rather informal nature of the meeting and his provision of clear information about the circumstances surrounding the 17 patients in his verbal presentation of the project. The latter point was corroborated in a declaration from the professor chairing the meeting.

DCSD ascertained that the defendant had committed an error by forwarding the abstract referred to without the endorsement of the co-authors and by not rectifying the error prior to the presentation at the meeting. DCSD found that, irrespective of the correct facts about the number of patients having been set out

at the meeting, this conduct could only be characterized as being contrary to good scientific practice.

Conversely, on the available basis, DCSD did not feel able in this case to accept that there was evidence of falsification or distortion of the scientific message or gross deception as to a person's involvement in the research. Thus, there was no scientific dishonesty. In accordance with this, DCSD delivered the ruling that *the errors committed by the defendant could only be characterized as conduct at variance with good scientific practice.*

CASES PENDING

Case 6

Case of a conflict situation resulting in a ban on the publication of a scientific article (case no. 10 in the 2000 report and case no. 9 in the 2001 report).

The complainant approached DCSD in October 1999 in order to obtain guidance in resolving a conflict that had arisen between the defendant and himself. In November 1999 the enquiry was replaced by a formal complaint. Having prepared a draft of a scientific article, the complainant, who was a member of a working party, had been banned by the other co-authors from publishing an article that included results on a topic he did not have permission to include in his project by virtue of a reciprocal agreement on the use of data.

At one point, DCSD concluded the

case on the basis of a declaration from the defendant, but after new information emerged the case was reopened. DCSD's Committee for Health and Medical Science subsequently formed an ad hoc committee, which submitted a report on the case in October 2001.

Based on the ad hoc committee's report and the comments received, DCSD ruled on the case in November 2002. It was DCSD's view that the defendants had not acted in a scientifically dishonest way but the complainant, for his part, by publishing the article under discussion, would not be doing anything that might be characterized as scientifically dishonest or contrary to good scientific practice.

The complainant was dissatisfied with the ruling and at the turn of 2002/2003 requested that the case be reopened. As things then stood, DCSD did not feel able to dismiss the petition for resumption, for which reason the case cannot be finalized until 2003. The ruling made in November 2002 does, however, affect fundamental issues and is discussed in the article on p. 6 about research institutions' scope for preventing publication of an article by researchers.

Case 7

Case of accusation of alleged fabrication of data.

In May 2000 the complainant informed the Danish Committees on Scientific Dishonesty (DCSD) about correspondence regarding the defendant's article

in a scientific journal.

That information notice was replaced in March 2001 by a formal complaint, which was presented to DCSD's Committee for Natural Science, Agricultural & Veterinary Science and Technical Science at a meeting in August 2001. The Committee decided to set up an ad hoc committee to assess the complaint. The ad hoc committee's report on the case was presented to the parties to the case in letters of October 2002 in Danish and English, with an eye to obtaining factual comments. The defendant was not able to observe the deadlines given for replying. It has therefore not been possible to finalize the case during the year under review and it will not be possible to conclude it until 2003.

Case 8

Case of alleged plagiarization of an earlier project draft prepared by the complainant in carrying out an excavation for research.

In October 2002 DCSD's Committee for Social Science and the Humanities received a complaint from a researcher about plagiarization and copying of the complainant's project draft.

The draft had been made by another researcher, who had carried out a project matching the precise description of the complainant's project draft.

In accordance with DCSD's rules of procedure, the complaint, complete with appendices, was presented to the defendant, who replied in November 2002 that the complainant's issue did

not form part of her project description, and the same was the case with regard to the complainant's hypotheses.

The case files were presented to DCSD at a meeting in December 2002. The conclusion was that DCSD did not consider there to be evidence to support that the defendant had taken over the complainant's project, nor that there were actions or omissions as a result of which falsification or distortion of the scientific message or gross deception as to a person's involvement in the research had taken place, cf. Section 3, subs. 1 of Danish Executive Order No. 933 of 15 December 1998.

The complainant was dissatisfied with the ruling and in January 2003 requested that the case be resumed for consideration on the grounds that, having been away and having sublet his apartment, he had not been in a position to comment on the defendant's points of view.

Accordingly, in January 2003, DCSD decided to reopen the case. The ruling made on the resumptive case will be incorporated in DCSD's 2003 report.

Cases 9, 10 and 11

Three complaints from natural scientists about scientific dishonesty displayed by a social scientist in his treatment of natural science topics.

This is about the complaints concerning scientific dishonesty lodged in connection with Bjørn Lomborg's book "The Skeptical Environmentalist". DCSD an-

nounced its ruling on 7 January 2003. Since the ruling has been appealed to the Danish Ministry of Science, Technology and Innovation, and since the ruling on the complaints is not yet available, any discussion has been deferred until the annual report for 2003.

DISMISSED CASES

Case 12

Case of a complaint from a foundation that provided support for biomedical research about a researcher having covertly received support from two research foundations to meet the same expense.

In March 2002 DCSD received a complaint from a foundation that grants support for research. The complaint included a request for DCSD to evaluate whether there was evidence of scientific dishonesty by a researcher who had applied for and obtained support for his research from two different foundations without duly and properly relinquishing one of the awards.

On her own initiative, the defendant provided DCSD with an account of why she failed to immediately notify the complainant that she had received support from another quarter. The researcher refunded the sum received to the complainant in March 2002.

DCSD dismissed the case on the grounds that, according to Section 3 of the Executive Order on the Danish Committees on Scientific Dishonesty,

DCSD considers cases where, in research, there is falsification or distortion of the scientific message or gross misrepresentation about a person's involvement in the research. Fraudulent behaviour of the nature described by the foundation in its letter, does not come within the sphere of DCSD's domain. The correct addressee would initially have to be the management of the institution where the person in question was employed. As for DCSD, it would not be taking any further action in the case.

Case 13

Case of a complaint about a social scientist's scientific dishonesty in discussing research in the natural sciences.

The complaint was received by DCSD in November 2002 and dealt with a complaint about the same researcher referred to in cases nos. 9, 10 and 11. Since the complaint was received so late on in relation to the other complaints under consideration, it was not given separate treatment. The complainant received a copy of the ruling concerning the other three complaints, which at a general level were regarded as adequate for the purposes of this complaint too.

Case 14

Case of alleged scientific misconduct displayed by a social science researcher.

At about the turn of 2002/2003 DCSD received a complaint indicating the complainant's request for DCSD to scrutinize a researcher's scientific honesty.

Since the complaint was of a general nature, DCSD's Committee for Health and Medical Science found that the case was not covered by DCSD's jurisdiction, cf. Section 3, subs. 1 of Danish Executive Order No. 933 of 15 December 1998. The complaint was therefore rejected.

APPENDIX 1 DANISH EXECUTIVE ORDER NO. 933 OF 15 DECEMBER 1998

Order on the Danish committees on scientific dishonesty

Pursuant to Section 4e, subs. 4 of the Danish Act on Research Advice etc., cf. Consolidation Act No. 676 of 19 August 1997, the following provisions apply:

Section 1. The Board of the Danish Research Councils shall create three committees on scientific dishonesty within Danish research: a committee for research in natural science, agricultural & veterinary science and technical science, a committee for research in health and medical science, and a committee for research in social science and the humanities. The Committees shall have a joint chairperson, one of whose tasks is to ensure uniformity in the statements made across the fields of research.

Subs. 2. The Committees' name is the Danish Committees on Scientific Dishonesty.

Section 2. The Danish Committees on Scientific Dishonesty are mandated to consider cases of scientific dishonesty lodged with the Committees in the form of a complaint. A person can make a request to have a case considered with a view to being cleared of rumours in circulation.

Subs. 2. The case must be of significance to Danish research. Where the Committees are considered unlikely beforehand to find for the complainant, the case will be dismissed.

Section 3. Scientific dishonesty includes actions or omissions in research which give rise to falsification or distortion of the scientific message or gross misrepresentation of a person's involvement in the research, and includes:

1. Fabrication and construction of data.
2. Selective and surreptitious discarding of undesirable results.
3. Substitution with fictitious data.
4. Consciously misleading use of statistical methods.
5. Consciously distorted interpretation of results and distortion of conclusions.
6. Plagiarization of others' results or publications.
7. Consciously distorted reproduction of others' results.
8. Inappropriate credit as the author or authors.
9. Applications containing incorrect information.

Subs. 2. In order to label a conduct as scientific dishonesty, it must be possible to document that the person in question has acted deliberately or exercised gross negligence in connection with the activities under consideration.

Section 4. The chairperson shall distribute complaints to the Committees for consideration.

Subs. 2. The individual committee shall decide whether a case is to be considered or dismissed. The committee shall notify the defendant of the complaint and of whether it intends to consider the complaint.

Subs. 3. The parties in a case of scientific dishonesty are entitled to draw on the assistance of assessors. The complainant may be assisted by observers providing that he/she is a party to the case.

Subs. 4. The committee itself shall investigate the complaint, including providing all relevant information in the case.

Subs. 5. When a case of scientific dishonesty has been completed, the committee shall draft a statement with a reasoned position on the complaint lodged. Parties to the case shall be advised of the statement.

Section 5. A complaint about scientific dishonesty must be submitted within a reasonable time of the complainant having been given the necessary wherewithal for submitting the complaint. Only in special cases can the committee consider matters dating back more than five years.

Subs. 2. A committee can decide that a case previously completed by the committee is to be reopened, where prompted by special grounds, particularly the emergence of new information which – had it been available during consideration by the committee – can only be assumed to have resulted in a different outcome to the case.

Section 6. Where a committee ascertains that there is scientific dishonesty in a specific case, the committee can:

1. Inform the defendant's employer.
2. Recommend that the scientific project concerned be withdrawn.
3. Make a report to the relevant public authority supervising the area.
4. Make out a police report where a punishable offence is involved.
5. At the special request of an appointing authority, state its views on the choice of sanctions to be imposed, if any.

Section 7. The Committees shall publish an annual report detailing their activities. The report shall describe all cases of scientific dishonesty considered in non-personalized form.

Section 8. The Committees shall each be made up of a chairperson and two, four or six members, as determined by the Board of the Danish Research Councils. In addition, alternates shall be appointed for the members.

Subs. 2. The chairperson shall be a high court judge. The appointed members and their

APPENDIX 1 alternates shall be accredited researchers jointly and as best possible covering the specialist fields of the government research councils. The chairperson and members shall be appointed in their personal capacity.

Subs. 3. The chairperson shall be appointed by the Danish Minister of Science, Technology and Innovation. The members and their alternates shall be appointed by the Board of the Danish Research Councils following consultation with the government research councils.

Subs. 4. Members and their alternates shall be appointed for a period of four years and can be re-appointed for two years. If a member resigns during a term of appointment, the member appointed in his or her stead can be appointed for less than four years.

Section 9. The individual committee can decide that it is to be assisted in its investigation of a case by one or more external experts.

Subs. 2. In the event of a member's absence, the alternate shall deputize.

Subs. 3. The Committees have a quorum when the chairperson and members or their alternates are present.

Subs. 4. The Committees' decisions shall be made unanimously, wherever possible. Where a consensus cannot be reached, the decisions shall be made by an ordinary majority decision. A dissenting member can demand that his/her dissent be noted in the decision.

Subs. 5. In matters of law, a ruling shall be made by the chairman.

Section 10. Members of the Committees are subject to the same duty of confidentiality as for public functions in respect of any information gleaned in their capacity as members of the Committees.

Section 11. The Danish Research Agency shall provide secretariat services for the Committees.

Section 12. The rules of the Danish Public Administration Act shall apply to the treatment of cases by the Committees.

Subs. 2. The Board of the Danish Research Councils shall lay down rules of procedure for the Committees.

Section 13. The Order shall not apply to the Faeroe Islands and Greenland.

Section 14. The Order shall enter into force on 1 January 1999.

Danish Ministry of Science, Technology and Innovation, 15 December 1998.

Jan Trøjborg / Dan Jensen

Pursuant to Section 12, subs. 2 of Danish Executive Order No. 933 of 15 December 1998 on the Committees on Scientific Dishonesty, the following provisions apply:

The Committees – tasks and objectives

Section 1. The Committees on Scientific Dishonesty consist of three coordinated committees, each individually covering one or more scientific fields. The Committees have a joint chairperson. The three committees are: a committee for research in natural science, agricultural & veterinary science and technical science, a committee for research in health and medical science, and a committee for research in social science and the humanities.

Section 2. The Committees on Scientific Dishonesty are mandated to consider cases of scientific dishonesty.

Subs. 2. A case can be filed by anyone lodging a complaint with the Committees. Anonymous complaints will qualify for consideration only on an exceptional basis and only in the event that there are substantive and essential social interests at stake.

Subs. 3. A person can ask to have a case considered with a view to being cleared of rumours in circulation.

Subs. 4. The Committees can consider enquiries-in-principle, provided that the issue involved is deemed to be of general social interest or of interest to a wider circle of researchers or a research environment.

Section 3. The Committees wish to be conducive to promoting good scientific practice. It is attempted to achieve this goal by disseminating a knowledge of the Committees' annual report and by teaching and lecturing activities etc.

Subs. 2. At the annual joint meeting, cf. Section 9, subs. 1, the Committees discuss initiatives capable of furthering the Committees' objectives.

Preparation and adjudgement of cases on the individual committees

Section 4. The pertinent committee shall itself investigate the complaint and provide all relevant information.

Subs. 2. Information provided by the parties shall form part of the Committee's investigation and consideration of the case. The parties shall be heard by presenting the opposing party's information and comments. The hearing procedure shall consist, as a basis, of two written hearings between the defendant and the complainant; however,

APPENDIX 2 the scope and phase of the hearing shall be laid down in detail by the committee following a concrete evaluation.

Subs. 3. The committee can appoint an ad hoc committee whose brief shall be to investigate and prepare the case by compiling a report. The committee can appoint one or more external experts to an ad hoc committee. The parties to the case shall be informed of the ad hoc committee's composition and are free to offer any comments within a term of two weeks.

Subs. 4. Once the ad hoc committee has compiled a report, the report shall be sent to the parties to the case in order to ensure that factual information in the report is correct. Any comments by the parties shall be sent to the ad hoc committee. The ad hoc committee's report, the parties' comments and the ad hoc committee's remarks on these shall then be presented to the committee with a view to settling the case.

Section 5. The committee shall recommend to the parties that a case be dealt with in confidence until such time as a ruling is in place. While a case is in progress, the committee shall not supply information about the case to any third party, including the press.

Subs. 2. Where access to documents is requested for the immediate purpose of settling a case, that request will normally be accommodated.

Subs. 3. Cases ruled on shall generally be referred to in the Annual Report in depersonalized form, unless exceptional circumstances dictate that the public be made aware of the identity of those involved.

Section 6. Cases shall be decided at a meeting of the committee, cf. however Section 7, subs. 3.

Subs. 2. The committee's meetings are not public, cf. however Section 7, subs. 4 and 5.

The chairperson's tasks and powers

Section 7. One of the chairperson's tasks is to ensure uniformity of the casework procedure across the Committees.

Subs. 2. Where a complainant's claim can be considered beforehand to be unlikely to be upheld, the case shall be dismissed by the chairperson after the issue has been presented to the members of the pertinent committee. If it is apparent that a case must be dismissed, dismissal can be effected by the chairperson on his or her own initiative.

Subs. 3. Where considered unobjectionable, the chairperson can determine that a case be resolved by a written vote. At any time whatsoever, any member of the committee can demand that the case be heard at a meeting.

Subs. 4. The chairperson may decide that the parties can be granted an audience with the committee.

Subs. 5. The chairperson may decide that persons other than the Committees' members and alternates are to take part in the joint annual meeting.

Subs. 6. The chairperson shall decide whether a request for access to documents can be met, cf. Section 5, subs. 2. To an extent to be further specified, the chairperson can delegate authority to the secretariat.

Acting as secretariat for the Committees

Section 8. The Danish Research Agency provides secretariat services for the Committees.

Subs. 2. On receiving a complaint, the secretariat shall acknowledge it by providing particulars of the anticipated case-handling procedure. The chairperson shall be concurrently advised of the complaint.

Subs. 3. If the complaint is expected to be able to be heard on its merits, the secretariat shall then send the complaint to be heard by the defendant. A copy of the case documents shall simultaneously be sent to the members of the relevant committee. The secretariat shall send regular consultation replies and other case-related material to the chairperson and members of the committee.

Subs. 4. Where the complaint is deemed immediately dismissable, by agreement with the chairperson the secretariat shall prepare a draft rejection, which is then normally sent to the members of the pertinent committee for approval, cf. Section 7, subs. 2. The defendant shall be kept informed of the complaint by a copy of the letter of dismissal.

Subs. 5. The secretariat shall take part in committee and ad hoc committee meetings.

Subs. 6. The secretariat shall otherwise assist the chairperson and the Committees in their work, as determined by the chairperson.

Meetings of the Committees

Section 9. An annual joint meeting shall be held with the attendance of members of the Committees and their alternates. The meeting shall not be public. At the meeting the chairperson shall inform those present of the rulings made during the year on the individual committees. At the meeting a decision can be made on topics of common interest to the Committees.

Subs. 2. At the joint annual meeting, the time of the next year's joint meeting shall be finalized. In addition, a date in every quarter shall be fixed when the individual committees can be convened to casework meetings, should the need arise.

Section 10. Notice to attend casework meetings shall be given two weeks in advance, wherever possible, setting out which cases it is intended to consider at the meeting. Previously unsent material shall be sent out simultaneously with the agenda.

APPENDIX 2 **Section 11.** The Committees' chairperson shall chair the meetings.

Section 12. The secretariat shall minute the resolutions at meetings.

Alternates

Section 13. In the event of a member's absence or disqualification, the chairperson, in consultation with the other members of the committee, shall designate the alternate to take part in considering the case.

Subs. 2. Where a member is allowed to leave the Committees during the appointment period, the Board of the Danish Research Councils shall appoint a new member for the ongoing appointment period. The new member shall be elected from among the alternates and in consultation with the relevant government research council.

Subs. 3. Where a member is appointed in accordance with subs. 2, the Board of the Danish Research Councils shall also appoint a new alternate for the ongoing appointment period in consultation with the relevant government research councils.

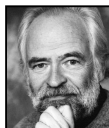
Ensuring the continuity of the Committees' work

Section 14. Once a committee has completed its consideration of a case, a copy of the ruling shall be sent to all members and alternates on the three committees.



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