

Fraud case Dirk Smeesters

Dirk Smeesters was an extraordinary success story. Until it became clear the young, Flemish professor had manipulated and even fabricated his data. What exactly happened and what will change in order to prevent fraud in the future? On massaging data, data detectives, and shades of grey.

text Thessa Lageman

"I have always been intrigued by the question why people behave in a certain way. What underlying mechanisms cause this type of behaviour", Dirk Smeesters says in an interview from 2008 on the EUR website. The doors were open for the young doctor after he had passed his dissertation in Leuven in 2003. The Rotterdam School of Management, Erasmus University (RSM) wanted him, but he initially chose for the University of Tilburg. One of the reasons for moving to Rotterdam a few years later was the "fantastic *Behavioural Lab*" here. Bristling with enthusiasm he tells in an interview of his interest in psychology, which goes back to high school, and of all research projects he was working on. He discovered that a messy working place is a better working place, that commercials with too skinny models are less effective, and that people who have death on their mind eat more candy. He progressed quickly in his career. The adage too good to be true is fitting: three years later it all ended.

People like all others

It was "terrible" to hear that one of his professors had apparently committed fraud, Steef van de Velde, dean of the RSM, tells. "The Stapel affair already was a huge shock. That something like this would happen at your own faculty is the last thing you expect. Smeesters was a young, promising researcher, more than an up and coming talent. At least so it seemed. But scientists are people like all others." Yes he is angry. "Or perhaps I should say 'disappointed'."

Business Administration student Roel den Blanken took the Marketing Management course from Smeesters. "He was a normal lecturer", he remembers. "His classes were interactive. He walked around in the lecture hall and was good at explaining." Quite ironically Smeesters also taught the course 'Experimental Methods in Business Research' in which students were taught step by step how to apply experimental research methods and data analyses.

Peculiar patterns

Yes, he made mistakes, Dirk Smeesters admits, but he stresses that he did not fabricate data. "I am no Diederik Stapel", he said in an exclusive interview with Flemish newspaper *The Standard* on the 30th of June.

Nonsense according to the American professor and 'data detective' Uri Simonsohn who caught wind of the case: "I am saying his data were forged", he writes in an email. "There is no way the data were merely massaged." The only other cases where he saw similar patterns were with research from Stapel. "Smeesters' justifications for his research data are irreconcilable with the evidence", Simonsohn emphasizes and sums up a number of arguments that, according to him, discredit Smeesters' explanations.

The report from the research commission Scientific Integrity concludes that Smeesters is guilty of cherry-picking data. Furthermore they found various 'peculiar patterns' in his work. "It is not the case that data has been fabricated", it says on the EUR website. "It is the case that data has been omitted in order to obtain significant effects, without mentioning that data had been omitted."

This is however incorrect. Professor Rolf Zwaan, chairman of the commission and specialized in cognitive psychology, explains that in the end the commission is convinced that at least some data had been fabricated: "We included Smeesters' reaction to our findings in the report. But, in turn, we had no time to react to it ourselves because our final meeting with Smeesters was frequently postponed. He himself stated that he massaged data. The analyses from Simonsohn, as well as our own analyses, clearly demonstrate that more was going on."

Losing data

The commission has analysed all 29 scientific articles published by Smeesters since 2001 using Simonsohn's method. Three articles, one of which had not been published, have been retracted as it became certain there are problems with the data. Zwaan: "We did not retract even more articles because we were very careful."

If you analyse a lot of publications, he explains, the method can work by chance. Vice versa, sometimes the method does not work even though something is wrong. So it is probable that not all irregularities in the data were found. A follow-up investigation would be appropriate, thinks Zwaan. "After all, Smeesters' co-authors are now not sure whether their positions or promotions are in jeopardy."

A problem with a follow-up is that Smeesters lost a large part of his data, digital as well as hard-copy, as the result of a computer crash and while moving to the RSM. How did that happen? Dean Van de Velde shrugs: "I would say everyone thinks that story is unbelievable."

Too good to be true

Simonsohn, unfamiliar with Smeesters at the time, came across one of the professor's articles by coincidence. The results seemed too good to be true. Having been confronted with the odd patterns, Smeesters replied the American scientist by email that he may have made a 'typo'.

However, that should have weakened the research outcomes instead of pushing them in one direction Simonsohn posits. "You could compare it to the claim 'I arrived later than usual today because I rode faster on my bike'", he explains. Smeesters altered his explanation as a result.

According to two statistics experts from the EUR Simonsohn's statistical method is valid. The core of his method is to check whether the data is too close to the theoretical expectation. He has been preparing an article on his results for several months. His draft, titled 'Just post it: The lesson from two cases of fabricated data detected by statistics alone' is available on the *Social Science Research Network*.

Problematic research culture

Dirk Smeesters told the research commission that massaging data is part of the research culture in marketing and social psychology. "There is talk of *questionable research practices*, but those are rather common", he declares in *The Standard*. A recent study among two

thousand psychologists from Leslie John of Harvard Business School confirms this: 78 percent withhold unfavourable results and half of the scientists adjust their hypotheses after the results are known.

Following Smeesters' comments the EUR website announces: 'The Executive Board does not believe there is a problem with the EUR's research culture.' Rector Magnificus Henk Schmidt told EM shortly after the fraud case became known that he was not certain whether massaging data happens more frequently. Therefore, as a first step an investigation of the culture at RSM will be launched. Subjects of interest will be the research environment, how Smeesters could commit fraud, the incentive structure for promotions, and how high job related stress is. Part of the 250 scientific employees of the faculty will be interviewed. A report must be completed before January 2013.

Minimum requirements

The commission Scientific Integrity advises to create a protocol for data collection and storage, binding for all scientists at the university. Likewise, Smeesters makes a plea in *The Standard* for explicit rules - 'To provide clarity in the grey area'. Rolf Zwaan: "There is indeed a grey area. Within this area researchers, unknowingly in the most cases, use certain methods incorrectly."

Finn Wynstra, Associate Director of ERIM (Erasmus Research Institute of Management) is the chair of the EUR task force in charge of researching how awareness of scientific integrity can be increased and how further cases of fraud can be prevented. [view text box]. "Within ERIM we are compiling a set of minimum criteria for collecting, analysing, storing, and reporting research data", he says. "We are looking closely at different research strategies, such as experimental research compared to research using existing data. Moreover we are developing new course modules Scientific Integrity for various researchers. Apparently there is great need for this."

It has not been decided yet whether checks will be performed on the work of researchers. Perhaps samples will be taken, says dean Van de Velde. "We do not want to create a witch hunt, but we need clarity." Simonsohn's method would not be used for this, as it is only useful for specific types of research in social psychology.

Publishing raw data

Uri Simonsohn believes it is not the duty of universities to prevent fraud. "Any efforts to such effect are likely to irritate faculty, slow down the research process, and increase paperwork", he says. It is mainly the responsibility of scientific journals, he states. They should publish raw data and should furthermore inquire how these were collected and analysed. According to Simonsohn, several publishers are considering to adjust their policies to such effect.

Zwaan as well is an advocate of publishing raw data. Van de Velde on the other hand expresses concerns whether this is viable or not: "Companies oftentimes only agree to participate in research if their anonymity is guaranteed. Moreover, you trade in your head-start on other researchers if you publicize your data. And raw data can be forged as well."

Co-authors

"An uncanny but instructive experience", Rolf Zwaan describes the investigation he has led. "Speaking to Smeesters' co-authors had an impact on me. Many of them are young researchers who have been affected by this case", he tells.

Smeesters has not yet graduated any PhD candidates. The ones he was supervising have meanwhile switched to other promoters. They told the commission in February that they gathered their data themselves and do not doubt Smeesters' integrity. His former PhD candidates and student assistants react cautiously to interview requests from EM. According to the university there is no reason to doubt the integrity of Smeesters' co-authors. Even so, they have meanwhile been advised to request raw data in case they had not collected it themselves.

Publish or perish

RetractionWatch, a blog that keeps a record of research that has been declared invalid due to fraud, is the stage of a lively discussion on, among other things, the responsibility of co-authors. The case of Smeesters sparked the debate. Jonathan Levav of Stanford University, who still has two unpublished articles with Smeesters, describes how he met him at the EUR. "Dirk is a nice, intelligent guy, and was an enthusiastic coauthor." In any case, he never had any doubts about the man's work. "Maybe he's not a friend any longer", he writes, "but he was for some time. He has a family, and he's paying a heavy price. Although this is probably deserved, it's sad for many of us to watch. I do not know what motivated Dirk to do what he did, but I know that there was no need for it. He was smart enough to become a respected scientist without messing around with data."

Perhaps it was the pressure to continuously publish, to bring something new that generates impact time and time again, thinks Steef van de Velde. All scientists are faced with the *publish or perish* challenge, Uri Simonsohn says. "But almost nobody fabricates data. Rather than try to justify illegitimate behavior, we should think of ways to prevent it."

More fraud cases

Ultimately, all interviewees underscore that it is impossible to completely prevent fraud. Pieter Kuijt, director of the Marketing & Communications department: "We have around a thousand scientific employees on Woudestein. It is a microcosm and a small, open society." Rector Magnificus Schmidt, shortly after the fraud case came to light: "The system is based on trust." "It was 'gritty case'", says Kuijt, "but we treated it carefully and diligently. As transparent as possible." Finn Wynstra of ERIM: "I am all over openness and transparency, but it does have enormous consequences for Smeesters to prominently appear on the eight o'clock news with name and picture."

Damage to the university's reputation is limited, presumes Kuijt. "It is not like 'you work at RSM so I will not work with you anymore'", says Wynstra, "but subconsciously it may have an effect." Zwaan: "Especially for social psychology this is a blow. But exactly in that field big efforts are made to change the situation." Kuijt expects that more fraud cases will come to light in the next years. "Perhaps we will be more critical with each other, or perhaps the threshold to approach a counsellor will be lower."

The rector declared in his speech for the opening of the academic year: "We can fool ourselves and believe that these are isolated incidents; the actions of solitary individuals who have lost their way for one reason or the other. But I am not convinced that the practices that have been unearthed are total exceptions."

Chronology: what happened when?

- > 29 August 2011: Uri Simonsohn, economist and social psychologist at the University of Pennsylvania, emails Dirk Smeesters, social psychologist and expert in marketing and consumer behaviour at the Rotterdam School of Management. He believes there is a problem with Smeesters' research data and requests him to send his raw data.
- > 15 September: Smeesters loses a large part of his data.
- > 26 September: Smeesters discusses this matter and his physical condition with the director of the Marketing Management department, Stijn van Osselaer (did not want to give an interview to EM). In the following months Simonsohn, Smeesters, and Van Osselaer exchange emails; slowly, the gravity of the situation is unfolding.
- > 30 November: Smeesters requests a meeting with the counsellor for scientific integrity.
- > 12 January 2012: A research commission is formed because of the suspicion of scientific error or fraud.
- > 31 January: Smeesters sends his resignation, motivated by personal reasons, to RSM.
- > 1 February: First meeting between Smeesters and the research commission. He promises absolute compliance and admits to have made a mistake.
- > 5 April, 7 May, 22 May: Smeesters cancels the meeting for the analysis of his results due to grave personal problems and a migraine attack.
- > 25 May: Meeting between the research commission and Smeesters at his house in Turnhout.
- > 21 June: The Executive Board accepts Smeesters' resignation.
- > 25 June: The EUR publishes the research report.

Measures to prevent fraud

Following the Stapel case, ERIM began researching the state of affairs for scientific integrity past fall. The objective was to gain knowledge to prevent scientific errors and fraud. Early in July the scientific staff and ERIM research master students received an email about this. In the attachment '**General recommendations for storing research data**' it is suggested to always keep copies of research data, to clearly describe the methods for gathering data, and to keep with a minimal term of five years for storing data. Later this fall, these recommendations will be specified further for various research methods, and some of the suggestions may be transformed into regulations at a later stage.

At the **Erasmus Behavioural Lab** (managed by Psychology and ERIM) data are automatically stored by now, and it is compulsory to register which and how many research subjects participate. Furthermore a pilot has been launched to test a **central data base** at the University Library, where all EUR researchers can store their data. Hundreds of thousands will be invested for storage capacity and personnel. The researcher can control who has access to the data. Whether or not using this facility will become a mandate for the whole university is not clear at this point.

Starting the end of October, there will be a **Scientific Integrity course** at ERIM. It will be compulsory for new PhDs, but available for existing PhDs and senior researchers as well. The Erasmus MC already has such a course, and other faculties will probably offer one at a later date.

Smeesters reacts:

'I definitely will not miss academia'

The dean advised him to decline further interview requests. Nonetheless Smeesters (1974) tells his side of the story to EM. "It is clear that a lot is amiss in the field."

What are you doing at this point?

"I cherish every moment I have with my children, and it is wonderful to have no work to do for once. I am learning to enjoy life again."

Do you still have problems with your health?

"I worked non-stop since I graduated in 1997. Many people warned me in recent years that I was overdoing it and would get the bill sooner or later. I have felt used up many times, but then found the energy to keep going. Until I finally hit the wall. Once you have that burnout you are completely drained, I couldn't even read a book. I was plagued by migraine attacks in that period as well. Whenever they hit I was completely knocked out. On top of that I had troublesome palpitations in the past ten years, caused by stress and too little relaxation. Fortunately these problems are under control now for the most part. Furthermore I have lingering knee problems."

How do you look back on the past year?

"It was tough, especially because I had emotional and physical problems. If such an investigation is added to all that it is even tougher. It must have been frustrating for the commission that I was in struggling with myself like this. As a result I could not always react promptly."

Did you hear from colleagues or students when the news was out?

"Yes, quite a lot actually. Especially from ex-colleagues, not from students – although several people told me they had read on websites that students thought I was a good teacher. That felt good. And I was overwhelmed with messages from friends. It took a few days to thank everyone."

You admitted that you did not follow the rules when dealing with your data. Looking back, do you regret this?

"I do know that if I were to start over, I would deal with issues that are more relevant to society and that contribute to the wellbeing of people. Then, it would be of lesser importance whether or not something is innovative theoretically or statistically significant. Journals almost exclusively publish studies with statistically significant results, which can indeed lead to massaging your data."

Why did you start cheating with your data, and where you never scared to get in trouble?

"No comment. I think researchers want to maximize the usefulness of their data because the pressure to publish is extremely high."

The EUR does not believe that you lost your data by mistake.

“Unfortunately I could not change that perception. Scientists are unfortunately sloppy with their data. A research from Jelte Wicherts of the UvA reveals that merely 27 percent of the researchers were able to provide their datasets to him. Uri Simonsohn has recently addressed the issue as well. When he requested the datasets from various people, they were unable to share them with him.”

You disagree with Uri Simonsohn about your research data: he says data has been fabricated, you say you have only massaged your data.

“I won’t respond to this, otherwise you would simply get one of those ‘according to me, according to him’-stories.”

According to you data massage occurs quite often. Can you give us examples?

“There are always suspicions, but I will not give away names. It is clear that much is wrong in the field. Now it is being proposed to have more transparency in research. Researchers would have to register their hypotheses before they conduct their studies and discuss everything they had carried out.”

The research culture at RSM is being investigated. What are your expectations?

“I cannot say anything on the matter. Many researchers will of course not admit publicly what they are doing, even if that may be justifiable. But perhaps they will do so anonymously.”

What are your plans for the future? I heard you want to work at a high school or college?

“I am not working at the moment, because I want to fully recover from my burnout. But that line of work is indeed a possibility, and there are other options. I won’t make a decision until I am back to one hundred percent.”

Will you miss science and giving lectures? And the university and RSM?

“I definitely will not miss academia. Frankly, I am relieved that I am no longer part of it. I do want to say that RSM provides a good and professional environment for people who are seeking to pursue a career there. And I still have warm feelings for a number of people who supported me. But I always had trouble to leave my work at work and that frequently caused frustrations. If I look back now, I took the job because I wanted to do research. But in retrospect my happiest moments were when I returned from a lecture that went well, and the students had treated me to an applause.”

► Kenyan terms, and that allegations of the theft of intellectual-property rights are unfair and unsubstantiated. Last week, the court asked both parties to provide more evidence; the next hearing is scheduled for 20 September.

SUPPORT NETWORK

Other African researchers at KEMRI have rallied to the programme's defence. The programme has sponsored more than 30 Africans for master's degrees in the past five years, and a further 35 research assistants have won external master's fellowships totalling around £2 million (US\$3.1 million), mainly from the Wellcome Trust. An £8-million strategic award from the Wellcome Trust is boosting PhD training on the programme, which currently has almost 50 PhD students. The investment puts it ahead of any other equivalent programme in the country, says Abdulsalan Noor, who leads the programme's spatial-epidemiology group. "This has saved many Kenyan students from the vagaries of chasing postgraduate funding through the limited international and national scholarship opportunities."

In its submission to the court, KEMRI lists a number of African scientists who were promoted and developed by the programme. These include Charles Mbogo, deputy director of the Centre of Geographical Medicine Research

"There are tensions everywhere in science — but where the former colonial master is involved, it takes on a different dimension."

Coast in Kilifi, which houses the KEMRI–Wellcome Trust programme; and Gilbert Kokwaro, who went on to head the programme's pharmacology group and is now director of the Consortium for National Health Research, a non-profit organization that coordinates health research and training in Kenya. In 2008, the KEMRI–Wellcome programme hired Kenyan malaria researcher Samson Kinyanjui as head of training to improve support for African scientists.

However, outsiders have questioned whether the programme is doing enough to promote Africans. In 2010, senior international scientists independently reviewed the programme's

application for core funding for 2011–16 from the Wellcome Trust, and unanimously deemed it "excellent". But they also queried why the programme seemed to be so "separate" from the rest of KEMRI, and why so few senior African scientists were involved.

Some joint programmes have found it challenging to boost the number of African scientists. Not only are African researchers relatively scarce, it is often difficult for those who have trained in Africa to compete on standard metrics — publication and citation rates — with colleagues trained and well-connected in developed countries.

But a culture of openness and trust may help to avoid conflict in partnerships between African and developed countries, says Tanner, who helped to develop guidelines published in May by the Commission for Research Partnerships with Developing Countries in Berne, Switzerland. One approach, he says, is to let all partners participate in setting the research agenda.

"It's about respect and transparency," says Tanner. "If you have that, you can build up a good partnership." ■

Q&A Uri Simonsohn

The data detective

Psychology was already under scrutiny following a series of high-profile controversies. Now it faces fresh questions over research practices that can sometimes produce eye-catching — but irreproducible — results. Last week, Erasmus University Rotterdam in the Netherlands said that social psychologist Dirk Smeesters had resigned after an investigation found that he had massaged data to produce positive outcomes in his research, such as the effect of colour on consumer behaviour^{1,2}. Smeesters says the practices he used are common in the field. None of his co-authors is implicated. The university was tipped off by social psychologist Uri Simonsohn at the University of Pennsylvania in Philadelphia, who spoke exclusively to Nature about his investigation.

How did your investigation begin, and how did you analyse the papers?

Somebody sent me a paper by Smeesters. I was working on another project on false positives and had become pretty good at picking up on the tricks that people pull to get a positive result³. With the Smeesters paper, I couldn't find any red flags, but there were really far-fetched predictions.

The basic idea is to see if the data are too close to the theoretical prediction, or if multiple estimates are too similar to each other. I looked at several papers by Smeesters and asked him for the raw data, which he sent. I did some additional analyses on those and the results looked less likely. I'll be submitting a paper on the method this week.

I shared my analyses with Smeesters, showing him that the data didn't look real, and I offered

several times to explain my methods. He said he was going to re-run the study and retract the paper. That was all I heard until December, when Erasmus University Rotterdam contacted me and asked me to tell them why I was suspicious. They had started their own investigation.

Can we expect more cases like this?

I tried my approach with Diederik Stapel's data after he had been called out for fraud (see *Nature* 479, 15; 2011), and they looked fake from the very beginning. Besides him and Smeesters, there's another person. I found three suspicious papers, engaged him for several months, and eventually contacted the university. They had already started an investigation, which



LUKE CHURCH PHOTOGRAPHY

has ended. It's not official yet.

There's a fourth case in which I am convinced that there's fabrication. I've approached co-authors, but none of them wanted to help. If I didn't have anything else to do, I'd do something about it, but it just became too difficult because I was handling these other cases and my own research. It's very draining.

Is this indicative of deeper problems in the field?

I don't know how systemic the crime is. What's systemic is the lack of defences. Social psychology — and science in general — doesn't have sufficient mechanisms for preventing fraud. I doubt that fabrication is any worse in psychology than in other fields. But I'm worried by how easy it was for me to come across these people.

► **NATURE.COM**
Psychology's replication problems:
go.nature.com/mn4hdk

Do you worry about other psychologists' reactions to your investigations?

I did worry a lot. Everybody likes the fact that whistle-blowers exist, but nobody likes them. People worry about somebody engaging in a witch-hunt, but I have a technique that is accurate, I used it when confronted with evidence, and I subjected it to replication by checking other papers from the same author. That's no more a witch-hunt than a neighbour calling the police when someone breaks into another person's home. I did not take justice into my own hands, I contacted the authorities and they took care of the rest. I suspect some people will be against what I've done, but there is really no personal benefit to someone of doing what I am doing.

So what is your motivation?

Simply that it is wrong to look the other way. If there's a tool to detect fake data, I'd like people to know about it so we can take findings that aren't true out of our journals. And if it becomes clear that fabrication is not an unusual event, it will be easier for journals to require authors to publish all their raw data. It's extremely hard for fabrication to go undetected if people can look at your data.

A university's reputation suffers a lot when people fake data, but they don't have tools for preventing that — journals do. Journals should be embarrassed when they publish fake data, but there's no stigma. They're portrayed as the victims, but they're more like the facilitators, like a government that looks the other way. I'd like journals to take ownership of the problem and start working towards stopping it.

Previous challenges to data in psychology were made by internal whistle-blowers, but you are not connected to Smeesters. Does that herald an important change?

It's a very important difference. The tool should be broadly applicable to other disciplines. I think it'll be worthwhile to find other ways of finding fake data. We know people are really bad at emulating random data, so there should be all sorts of tests that could be developed.

Is it possible that such methods could falsely ensnare innocent researchers?

That's my biggest fear; it's why I look at different papers from the same person. I wouldn't contact anybody unless they had three suspicious papers. And before any concerns become public, a proper investigation should always take place. ■

INTERVIEW BY ED YONG

1. Johnson, C. S., Smeesters, D. & Wheeler, S. C. *J. Pers. Soc. Psychol.* **102**, 32–50 (2012).
2. Smeesters, D. & Liu, J. J. *Exp. Soc. Psychol.* **47**, 653–656 (2011).
3. Simmons, J. P., Nelson, L. D. & Simonsohn, U. *Psychol. Sci.* **22**, 1359–1366 (2011).



More than 700 people protested at the trial of political scientist Büşra Ersanlı in Istanbul this week.

HUMAN RIGHTS

Turkey cracks down on academic freedom

External groups hope scrutiny will restrain government.

BY ALISON ABBOTT

Turkey is upping the pressure on scientists and students who question its policies, and international human-rights advocates are taking notice.

In the past few years, the government has clamped down on the independence of the Scientific and Technological Research Council of Turkey and the Turkish Academy of Sciences (see *Nature* **477**, 131; 2011). It has also harassed and jailed individual academics and students. Now, an international network is launching a campaign to support Turkish scientists whose academic rights it considers to have been violated. The network has issued a report and this week carried out its first concerted street action, when more than 100 of its supporters joined a large protest at the opening of the trial of Büşra Ersanlı, a political scientist at Marmara University in Istanbul.

Ersanlı was arrested last October, under

Turkey's 2006 anti-terrorist laws. A member of the legal Peace and Democracy Party, which promotes the rights of Turkey's Kurdish minority, she denies charges of supporting an outlawed separatist terrorist organization, the Kurdish Workers' Party.

Authorities have tried to prevent other scientists from speaking out against industrial interests, says Nesrin Uçarlar, a political scientist who has worked with Ersanlı at Marmara University. One targeted researcher is Onur Hamzaoglu, an epidemiologist at Kocaeli University in İzmit, who revealed that the region's industrial basin has high pollution levels and increased cancer rates. Hamzaoglu is now being investigated for unethical behaviour leading to public alarm, and faces a jail sentence.

Ersanlı will be tried alongside 204 others charged with illegally promoting Kurdish rights. Her arrest prompted colleagues in France to launch the International Workgroup on Academic Liberty and Freedom of Research in Turkey (GIT) on 21 November. The group is also drawing attention to the more than ▶

► **NATURE.COM**
For an Editorial on human rights in Turkey, see:
go.nature.com/v5jhez

Report of the Smeesters Follow-Up Investigation Committee

5 March 2014

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Table of Contents

1	Introduction.....	2
1.1	Task of the Smeesters Follow-Up Investigation Committee.....	2
1.2	Background to the Follow-Up Investigation	2
2	The Committee's Working Method	3
2.1	Procedure	3
2.2	Investigative Methods	3
3	Conclusions.....	5
3.1	Paper 2	6
3.2	Paper 3	7
3.3	Paper 9	7
3.4	Paper 12	8
3.5	Summary	8
4	General Remarks	9
	Appendix 1. List of Persons Contacted by the Committee	10
	Appendix 2. Conclusions Papers Published by Smeesters.....	10
	Appendix 3. Questionnaire	12
	Appendix 4. References	13
	Appendix 5. Overview of Data Sources	14

1 Introduction

1.1 Task of the Smeesters Follow-Up Investigation Committee

In December 2012 the Executive Board of Erasmus University Rotterdam decided formally to appoint a Smeesters Follow-Up Investigation Committee. The Executive Board asked the Committee to investigate the scientific integrity of Mr D.H.R.V. Smeesters' academic work and to further investigate those of Smeesters' papers which had not been withdrawn as a result of the findings of the initial investigation Committee.

The composition of the Committee is as follows:

- Prof. Dr A.J. van der Heijden, Professor of Paediatrics, Erasmus MC (Chair),
- Prof. Dr P.J.F. Groenen, Professor of Statistics,
- Dr R. Zeelenberg, Associate Professor of Psychology,
- R. te Lindert, MSc (Secretary).

1.2 Background to the Follow-Up Investigation

On 12 January 2012, the Executive Board of EUR appointed a Committee to review the scientific integrity of articles by Prof. Smeesters. This was in response to a report by Dr Simonsohn (University of Pennsylvania) to Prof. Van Osselaer (RSM) regarding a suspected academic error or fraud by Prof. Smeesters (RSM). In that investigation, the Committee investigated the scientific integrity of articles by Prof. Smeesters, using Dr Simonsohn's method.

The Committee presented its report to the Executive Board on 1 June 2012. The Committee concluded that in three publications Prof. Smeesters had acted contrary to the guidelines of scientific integrity, and that there could be no faith in the scientific integrity of these articles¹. The Executive Board accepted this conclusion and decided that these articles should be retracted.

Because of persistent doubts within academic circles regarding Smeesters' publications, Erasmus University took steps to appoint a follow-up Committee. The Committee was asked to resume the investigation and to conduct an in-depth analysis of all the articles in which Smeesters was actively involved. This task was accepted by two members of the incumbent Committee. Dr Zeelenberg agreed to take the place of Prof. Zwaan who had left the Committee.

¹ - Johnson, C.S., Smeesters, D., & Wheeler, S.C. (2012). Visual perspective influences the use of metacognitive information in temporal comparisons. *Journal of Personality and Social Psychology*, 102(1), 32-50.
- Smeesters, D., & Liu, J. (2011). The effect of color (red versus blue) on assimilation versus contrast in prime-to-behavior effects. *Journal of Experimental Social Psychology*, 47(3), 653-656.
- The third article is a working paper and has not been published.
- The committee expressed doubts about the article: Liu, J., Smeesters, D., & Trampe, D. (2012). Effects of messiness on preferences for simplicity. *Journal of Consumer Research*, 39 (2), 199-214. This article was retracted by Liu.

2 The Committee's Working Method

2.1 Procedure

All papers that were published and not retracted were investigated, that is, 22 out of 25 papers (see Appendix 2). For each published paper, the Committee attempted to glean as much information as possible from the paper itself, the data related to the paper, and by means of a questionnaire sent to Smeesters and co-authors (see appendix 3).

The data are an important source of information. Although the raw data are not available for any of the papers, the Committee obtained processed data for some of the papers from the following sources:

- data supplied by Smeesters,
- data made available by co-authors,
- data from Smeesters' network drive,
- data from Smeesters' laptop, and
- data from files on Smeesters' laptop that were undeleted.

When looking for relevant files on the network drive and laptop, the Committee searched on the basis of relevant folders, relevant file names, and an algorithm using keywords from the papers to search for files on related experiments. All the files identified by the algorithm underwent additional checks to ascertain their relevance to a paper (e.g., an Excel file which describes one of the figures from the paper).

2.2 Investigative Methods

The following steps were taken for each article requiring analysis.

1. Analysis of research materials. The Committee looked at the content of the experiments and the study design, giving consideration to the following aspects:
 - Checking for inconsistencies between the three information sources (paper, data if available, and questionnaires completed by the authors).
 - Checking whether the study could have been undertaken in the manner described.
 - Checking whether the material supplied was consistent with the information in the data (correct number of reported dependent variables, experimental conditions and reported subjects).
2. Internal consistency checks of the reported data in a paper.
 - a. All reported data were checked for internal consistency, e.g.:
 - the degrees of freedom of F and t -tests must be consistent with the reported n and the design of the experiment;
 - the reported p -values must be consistent with the calculated p -values based on the reported F and t -values and degrees of freedom.

- b. Prof. Klaassen's method (2012) was applied for between-subjects experiments. This method compares the plausibility of two hypotheses: (1) the subjects are all independent and (2) the subjects are related to one another (constant correlation). With random assignment, Hypothesis 1 should be far more plausible. The evidential value was determined for each relevant experiment. The Committee regards an evidential value of 9 or above to be high, indicating that Hypothesis 2 (constant correlation between subjects) is far more plausible than Hypothesis 1 (subjects are independent). This method was not applied in experiments that did not use random assignment of subjects to conditions.
 - c. Checking for insufficient spread between the averages of the experimental method (Simonsohn method). The Committee did this only for experiments for which this method was not applied in the first investigation. This method was not applied in experiments that did not use random assignment of subjects to conditions.
3. Check of data sources with results in a paper:
- a. Checking whether the results calculated with the aid of the available data sources are consistent with the reported results in the paper (e.g., condition averages, *F*-tests, *p*-values, etc.). Attempting to ascertain reasons for discrepancies.
 - b. Checking construction of scales; verifying reliability (i.e., Cronbach's alpha or correlation).
 - c. Checking for averages and standard deviations that are impossible given the number of observations in the condition or population.

The numerical analyses were performed by an external research bureau (Gibbs, Quantitative Research & Consulting). The findings of the numerical analyses were reported per article. The reports were interpreted by the Committee. Co-authors and Smeesters were approached with additional questions if needed.

4. The findings regarding the papers were checked against the definition of violation of scientific misconduct in the EUR Scientific Integrity complaints procedure:
- 1. *Invention: using fictitious data*
Inventing or fabricating data that is presented as having actually been obtained from the findings of research. Acting in this way impacts the heart of science – i.e. ascertaining the truth.
 - 2. *Falsification: falsifying details and/or covertly rejecting research results*
Researchers must never adapt unwelcome data to the expectations or the theoretical outcomes. Leaving out details is only permissible if there are demonstrably well-founded reasons.
 - 3. *Plagiarism of (parts of) publications and other people's results*
Science will only flourish if honest recognition is given to the intellectual property rights of each person's contribution to knowledge. This applies to the entire range of students' assignments and theses, to scientific publications and to dissertations. Nor does it only relate to literally copying every word, but also to paraphrasing, omitting notes and source references, as well as covertly using data, designs and tables collected and compiled by others. Copyright laws offer victims the opportunity to obtain redress via the courts, but even if there is not (or is no longer) a direct victim, a researcher may still be accused of plagiarism.

4. *Deliberately ignoring and failing to acknowledge contributions from other authors is a form of misconduct closely related to plagiarism. Deliberate and gross violations which cannot be resolved within the scientific community itself must be submitted for judgment to the Scientific Integrity Committee.*
5. *Unjustly posing as the (co-)author*
A researcher may only name himself/herself (or allow himself/herself to be named) as a co-author of a publication when he/she has demonstrably contributed in the form of providing ideas and expertise, carrying out research or forming theories. Any researcher who links his/her name to a publication should, as far as possible, satisfy himself/herself of the correctness and integrity of the content.
6. *Consciously misusing (statistical) methods and/or consciously misinterpreting results*
The (statistical) interpretation of research data and empirical results are part of scientific discourse and that also includes the question as to whether or not the interpretation is correct. It can only be deemed misconduct if a person persists with an incorrect representation of the matter or presents unfounded conclusions, while the scientific community has formed an undisputed opinion in respect of the matter. If necessary, a Scientific Integrity Committee and external peers may reach such an opinion.
7. *Committing imputable inaccuracies when undertaking research*
There is only a question of misconduct when the researcher does more than simply make mistakes and work carelessly and, subsequently, fails to change his/her conduct after serious and well-founded criticism. A Scientific Integrity Committee may investigate whether there is a question of misconduct.
8. *Allowing and concealing misconduct on the part of colleagues*
Both researchers and managers have a duty of care in respect of science as a whole, and in particular, in respect of the researchers in their immediate environment. It has to be acknowledged that authority relationships in academia, for example between doctoral thesis supervisors and PhD students, will not always make it easy for a person to lodge a complaint against a colleague.

The co-authors were notified in advance of the Committee's conclusions regarding the paper, and were given the opportunity to respond. Smeesters was also given the opportunity to respond to the conclusions of this report.

The Committee is well aware of the possibility that errors can occur in empirical academic research in practice. The Committee has therefore limited itself only to serious breaches of scientific integrity. The Committee also focused on the methodological credibility of the results based on the available empirical data, without giving an opinion on the substantive content of the studies.

3 Conclusions

Using the definition of violation of the scientific integrity, the Committee concludes on the basis of the investigation that in 18 of the 22 investigated papers (see Appendix 2) no violation of scientific integrity was demonstrated. However, four papers had severe problems in terms of integrity. These four papers are discussed below.

3.1 Paper 2

Liu, J., Smeesters, D., & Vohs, K.D. (2012). Reminders of money elicit feelings of threat and reactance in response to social influence. *Journal of Consumer Research*, 38, 1030-1046.

The authors indicated that Smeesters was responsible for the data collection and Smeesters and partially Liu for the data analysis.

A comparison of different data sources shows that the conditions of two pairs of respondents in Study 1 have been interchanged. The effect of this interchange is that the main effect of Prime in this study is significant ($p = 0.02$) instead of being insignificant as reported in the paper ($p = 0.068$).

In Study 2, there were problems with four scales. The variable Confederate liking consists of three items instead of the reported two items and has $\alpha = 0.809$ instead of the reported $\alpha = 0.89$. The variable Threat measure has $\alpha = 0.797$ instead of the reported $\alpha = 0.82$. For Competitive measure the paper mentions four items and $\alpha = 0.82$, whereas in the data sources only two variables were available leading to $\alpha = -0.205$. The Mood negative affect subscale was reported to have $\alpha = 0.63$ whereas we calculated it to be $\alpha = 0.43$, and the Mood positive affect subscale was reported to have $\alpha = 0.57$ whereas we calculated it to be $\alpha = 0.37$. The Klaassen method yielded evidential values (EV) of 98592 for the variable Liking of the product and 16 for Implicit threat, indicating severe problems concerning the independence of the respondents.

In Study 3, two observations on the Mood positive and negative subscales have been changed manually as they are the only values deviating from combining the underlying items; for one observation the value should be 4.3 (data source value is 2.03), and for the other it should be 1.0 (data source value is 3.0).

The Committee informed Liu and Smeesters of the observations above and asked for an explanation. Liu took responsibility for two typos in the reporting of Cronbach's α and an error in reporting the number of items in the Confederate liking scale. Smeesters took responsibility for the errors in the data and attributed this to copy-and-paste mistakes between Excel and SPSS.

There is strong evidence that some data values in Studies 1 and 3 have been changed manually. Study 2 also shows many problems in the construction of the scales. In addition, the Klaassen method gives much stronger support for manipulation than independence of the respondents for two of the four variables. The Committee concludes that this paper contains violations of the Scientific Code (Criterion 7: committing imputable inaccuracies when undertaking research) of Conduct and holds Smeesters responsible. The Committee recommends retraction of this paper.

3.2 Paper 3

Liu, J., Vohs, K.D., & Smeesters, D. (2011). Money and mimicry: When being mimicked makes people feel threatened. *Psychological Science*, 22, 1150 - 1151.

The paper indicates that the variable Liking of the confederate consists of two items with $\alpha = 0.91$, whereas a reconstruction of the data proves that three items were used with $\alpha = 0.90$.

The authors state that respondents were randomly assigned to the different experimental conditions. However a test of independence of gender with the experimental conditions shows that this not the case ($p < 0.001$). In a response, Smeesters acknowledged this observation. The Committee considers this to be a major methodological mistake that can affect the interpretation of the paper referring to Criterion 7: committing imputable inaccuracies when undertaking research. As Smeesters was in charge of data collection the Committee holds him solely responsible. The Committee recommends retraction of this paper.

3.3 Paper 9

Liu, J., & Smeesters, D. (2010). Have you seen the news today? The effect of death-related media contexts on brand preferences. *Journal of Marketing Research*, 47, 251-262.

The Committee observed problems with three of the studies in this paper.

Study 1a. Two identical data sources (from Smeesters' laptop and his network disk) contain data of 100 subjects. However, the paper describes 94 subjects. Upon questions from the Committee, Smeesters replied that he removed participants who either did not complete the experiment or who guessed the hypothesis. These Data sources also contain the averages of the scores for the domestic and foreign beer brands. The paper indicates that two beers were used to obtain the average of the domestic beers, and two other beers for the average of the foreign beers. Yet the scores contain decimal values of 0.33 and 0.67 suggesting that the average of three beers has been used. Smeesters attributed this to sloppy reporting.

Study 3: The Committee recovered five data sets that were deleted from the laptop and pertained to Study 3. Therefore these data must have been copied to this laptop after the crash of Smeesters own laptop in August 2011, and were deleted before handing the laptop over to the integrity Committee on 25 May 2012.

These files are essentially two versions to be called Datasets A and B, where Dataset A is last saved on 5 February 2007, and B saved on 6 February 2007. Most of the data in these files are identical, but important changes are observed. (1) There were empty lines in Dataset A suggesting that subjects have been removed. (2) In B, four values of the variables Brand have changed between Datasets A and B. (3) Compared to Dataset A, the variable Purchase has 44 of the 135 values changed in Dataset B. (4) We also observed that for 10 observations of the variable Patriotism, the values are not the average of the variables P1 to P10, whereas the others are. Smeesters attributed these findings to errors in data handling.

The Committee sees two major problems with this paper. The first is the omission of six participants from Study 1a without providing a justification in the paper. This omission violates Criterion 7: committing imputable inaccuracies when undertaking research. The second concerns the extreme sloppiness in data-handling in Study 3, again a violation of Criterion 7. Smeesters was in charge of the data collection and data analyses, and the Committee holds him solely responsible for this violation of scientific integrity. The Committee advises this paper be retracted.

3.4 Paper 12

Smeesters, D., Mussweiler, T., & Mandel, N. (2010). The effects of thin and heavy media images on overweight and underweight consumers: Social comparison processes and behavioral implications. *Journal of Consumer Research*, 36, 930-949.

For Study 1, preliminary analyses indicated possible problems with the variable Self-Esteem. A part of the data of Study 1 was available including Self-Esteem (experimental conditions, scores of two judges, and a combined score). A closer inspection reveals that taking the average or applying some other plausible rule does not form the combined score of the two judges. Smeesters was therefore asked to explain this observation. His answer was that only the scores of Judge 1 were used, in contrast to what was mentioned in the results section of Study 1 (i.e., a combined score was used). The Committee verified the answer by Smeesters and found this not to be true, as the ANOVA results for Study 1 mentioned in the paper can be reconstructed by using the combined scores in the data file provided. However by using the scores of Judge 1 (and not the combined scores), the Committee was able to reconstruct one of the results of the moderated mediation analysis for Normal BMI participants on the basis of the data provided, but obtained different results for the Low-High BMI participants. Later Smeesters reported that the combined scores were formed by the scores of the judges and his own interpretation in those cases in which the judges disagreed.

Smeesters confirmed that he was the data analyst for this manuscript. The Committee sees three main problems with this paper. First, the way the combined scores for Self-Esteem were formed is problematic. Second, different measures for Self-Esteem were used in the ANOVA (the combined scores) and the moderated mediation analysis of Normal BMI participants (scores of Judge 1). Third, the way the Self-Esteem measure was used in the analyses is inconsistent with the information provided in the paper. Because of the severe problems mentioned above, the Committee has no confidence in the used measures of Self-Esteem in Study 1. Smeesters was in charge of data collection and data analyses, and the Committee holds him solely responsible for this violation of scientific integrity (Criterion 7: committing imputable inaccuracies when undertaking research). The Committee therefore recommends retraction of this paper.

3.5 Summary

Our findings urge us to advise the retraction of four papers in which Smeesters was the main author or one of the main authors (in addition to the three papers that the initial Committee advised to retract). This means that, combining the findings of the first and follow-up

Committee, a total of seven of the investigated papers did not fulfil the criteria of scientific integrity.

4 General Remarks

In addition to the aforementioned specific conclusions, the Committee wishes to express a few more concerns and recommendations concerning the practice of science in general.

- a. The most striking problem in investigating the scientific integrity of the papers by Smeesters was the difficulty in obtaining the data. For all papers the raw data were missing, and for many papers even the processed data were missing. This also holds for very recently-published papers. We strongly suggest that all raw and processed data must be stored for a period of at least 10 years at academic institutions or at a repository of the scientific journals. Often, the papers did not mention where the data were collected. We recommend that authors mention at what institution(s) data were collected, to facilitate obtaining the data. Academic institutions and journals could also encourage researchers to make their data available on websites such as the Open Science Framework.
- b. In several studies, the main variable of interest is a newly-constructed scale based on a sum score of several items. Being a new scale, there is no external validation of it. In experimental studies, it can be tempting to try out several scales that are based on different subsets of items, and to choose the one that has both a good Cronbach's alpha and a significant result in the ANOVA. As a consequence, the computed p -value is no longer valid unless a multiple testing correction is applied for the number of scales which have been tried out.
- c. The Committee observed in several studies that the numbers of subjects participating in a study were not always consistent with the numbers mentioned in the paper. In a few cases, it was clear that subjects were deleted without this being mentioned, and in others subjects were added to the original investigation. It is clear that adding and removing subjects can have important implications for the results of the experiments in the articles studies, and particularly for the reported p -values.
- d. During the careful evaluation of the papers, the Committee discovered many minor inconsistencies (wrong rounding of p -values, Cronbach's alpha, F -values, χ^2 -tests, etc.). Rounding errors were found in 33 of the 54 investigated studies, and problems with Cronbach's alpha 10 times. We call for scrupulousness in reporting results.

Appendix 1. List of Persons Contacted by the Committee

- Prof. Dr J.A.P.Hagenaars, Emeritus Tilburg University, member of the Levelt Committee 2011/2012.
- Prof. Dr C.A.J. Klaassen, University of Amsterdam, member of the Drenth Committee 2011/2012.

Appendix 2. Conclusions on Papers Published by Smeesters

1. Johnson, C.S., Smeesters, D., & Wheeler, S.C. (2012). Visual perspective influences the use of metacognitive information in temporal comparisons. *Journal of Personality and Social Psychology*, 102(1), 32-50. Retracted.
2. Liu, J., Smeesters, D., & Vohs, K.D. (2012). Reminders of money elicit feelings of threat and reactance in response to social influence. *Journal of Consumer Research*, 38(6), 1030 – 1046.
The Committee concludes that this paper contains violations of the Scientific Code of Conduct (Criterion 7: committing imputable inaccuracies when undertaking research) and holds Smeesters responsible. The Committee recommends retraction of this paper.
3. Liu, J., Vohs, K.D., & Smeesters, D. (2011). Money and mimicry: When being mimicked makes people feel threatened, *Psychological Science* 22(9), 1150 – 1151.
The Committee concludes that this paper contains violations of the Scientific Code (Criterion 7: committing imputable inaccuracies when undertaking research) and holds Smeesters responsible. The Committee recommends retraction of this paper.
4. Liu, J., Smeesters, D., & Trampe, D. (2012). Effects of messiness on preferences for simplicity. *Journal of Consumer Research*, 39 (2), 199 – 214. Retracted
5. Antioco, M., Smeesters, D., & Le Boedec, A., (2011). The effectiveness of cosmetics advertising: Kate Moss or the girl next door, *Journal of Advertising Research*, 52(1), 15 – 30.
No violation of scientific integrity was demonstrated.
6. Wheeler, S.C., Smeesters, D., & Kay, A.C. (2011). Culture modifies the operation of prime-to-behavior effects. *Journal of Experimental Social Psychology*, 47(4), 824 – 829.
No violation of scientific integrity was demonstrated.
7. Smeesters, D., & Liu, J. (2011). The effect of colour (red versus blue) on assimilation versus contrast in prime-to-behavior effects. *Journal of Experimental Social Psychology*, 47(3), 653-656. Retracted.
8. Fransen, M. L., Smeesters, D., & Fennis, Bob M. (2011). The role of social presence in mortality salience effects. *Journal of Business Research*, 64(1), 29 – 33.
No violation of scientific integrity was demonstrated.
9. Liu, J., & Smeesters, D., (2010). Have you seen the news today? The effect of death-related media contexts on brand preferences. *Journal of Marketing Research*, 47(2), 251 – 262.
The Committee concludes that this paper contains violations of the Scientific Code of Conduct (Criterion 7: committing imputable inaccuracies when undertaking research) and holds Smeesters responsible. The Committee recommends retraction of this paper.
10. Loveland, K.E., Smeesters, D., & Mandel, N., (2010). Still preoccupied with 1995: The need to belong and preference for nostalgic products. *Journal of Consumer Research*, 37(3), 930 – 949.
No violation of scientific integrity was demonstrated.
11. Smeesters, D., Wheeler, S.C., & Kay, A.C. (2010). Indirect prime-to-behaviour effects: The role of perceptions of the self, others, and situations in connecting primed constructs to social behaviour. *Advances in Experimental Social Psychology*, 42, 259 – 317.
No violation of scientific integrity was demonstrated.
12. Smeesters, D., Mussweiler, T., & Mandel, N., (2010). The effects of thin and heavy media images on overweight and underweight consumers: Social comparison processes and behavioral implications. *Journal of Consumer Research*, 36(6), 930 – 949.

The Committee concludes that this paper contains violations of the Scientific Code of Conduct (Criterion 7: committing imputable inaccuracies when undertaking research) and holds Smeesters responsible. The Committee recommends retraction of this paper.

13. Lam, S. R., Morrison, K. R., & Smeesters, D. (2009). Gender, intimacy, and risky sex: A terror management account. *Personality and Social Psychology Bulletin*, 35(8), 1046 – 1056.
No violation of scientific integrity was demonstrated.
14. Smeesters, D., Yzerbyt, V., Corneille, O., & Warlop, L. (2009). When do primes prime? The moderating role of the self-concept in individuals' susceptibility to priming effects on social behavior. *Journal of Experimental Social Psychology*, 45(1), 211 – 216.
No violation of scientific integrity was demonstrated.
15. Smeesters, D., Wheeler, S.C., & Kay, A.C. (2009). The role of interpersonal perceptions in the prime-to-behavior pathway. *Journal of Personality and Social Psychology*, 96(2), 395 – 414.
No violation of scientific integrity was demonstrated.
16. Lerouge, D., & Smeesters, D. (2008). Knowledge activation after information encoding: Implications of trait priming on person judgment. *Journal of Experimental Social Psychology*, 33(2), 429 – 436.
No violation of scientific integrity was demonstrated.
17. Mandel, N., & Smeesters, D. (2008). The sweet escape: Effects of mortality salience on consumption quantities for high- and low self-esteem consumers. *Journal of Consumer Research*, 35(2), 309 – 323.
No violation of scientific integrity was demonstrated.
18. Kay, A.C., Wheeler, S.C., & Smeesters, D. (2008). The situated person: Effects of construct accessibility on situational construals and interpersonal perception. *Journal of Experimental Social Psychology*, 33(2), 275 – 291.
No violation of scientific integrity was demonstrated.
19. Morrison, K.R., Wheeler, S.C., & Smeesters, D. (2007). Significant other primes and behavior: Motivation to respond to social cues moderates pursuit of prime-induced goals. *Personality and Social Psychology Bulletin*, 33(12), 1661 – 1674.
No violation of scientific integrity was demonstrated.
20. Smeesters, D., & Mandel, N. (2006). Positive and negative media image effects on the self. *Journal of Consumer Research*, 32(4), 576 – 582.
No violation of scientific integrity was demonstrated.
21. Vanbeselaere, N., Boen, F., & Smeesters, D. (2003). Tokenism also works with groups as tokens: The impact of group openness and qualification on reactions to membership in a low-status group. *Group Dynamics: Theory, Research and Practice*, 7(2), 104 – 121.
No violation of scientific integrity was demonstrated.
22. Smeesters, D., Warlop, L., Cornelissen, G., & Vanden Abeele, P. (2003). Consumer motivation to recycle when recycling is mandatory: Two exploratory studies. *Tijdschrift voor Economie en Management*, 48, 451 – 468.
No violation of scientific integrity was demonstrated.
23. Smeesters, D., Warlop, L., van Avermaet, E., Corneille, O., & Yzerbyt, V. (2003). Do not prime hawks with doves: The interplay of construct activation and consistency of social value orientation on cooperative behavior. *Journal of Personality and Social Psychology*, 84(5), 972 – 987.
No violation of scientific integrity was demonstrated.
24. Hermans, D., Smeesters, D., de Houwer, J., & Eelen, P. (2002). Affective priming for associatively unrelated primes and targets. *Psychologica Belgica*, 42, 191 – 212.
No violation of scientific integrity was demonstrated.

25. Warlop, L., Smeesters, D., & Vanden Abeele, P. (2001). On selling brotherhood like soap: Influencing everyday disposal decisions. In S. Ratneshwar, D.G. Mick & C. Huffman (Eds.), *The Why of Consumption* (pp. 197 – 215). London: Routledge.
No violation of scientific integrity was demonstrated.

Appendix 3. Questionnaire

Questionnaire paper:

Co-authors:

Date paper:

Paper Number:

About the paper/publications:

1. Who wrote the paper (if possible, indicate approximately who wrote what part of the paper)?
2. Are there peer review reports available? If so, we would appreciate it if you can share them and attach.
3. Do you have any further comments about this paper?

General questions:

4. In which period did you cooperate with Dr Smeesters on this project?
5. Who determined the research question?

About the experiment (please answer questions 6 – 22 separately for each experiment):

The answers below concern:

Experiment:

6. Who designed and constructed this experiment (e.g., development and selection of stimulus materials, manipulations, questionnaires, computer programs etc.)?
7. Who conducted the experiment?
8. Where did the experiments take place (in which lab)?
9. How many subjects participated in this experiment?
10. Who designed the instructions for the subjects?
11. Do you still have the instructions for the subjects and materials? If so, please attach if possible.
12. Is there anything that happened during the experiment that was not reported in the paper (e.g., additional independent or dependent variables or conditions)?

About the data (please answer for each experiment separately)

13. What did the raw data consist of (e.g., questionnaires, files generated by Authorware or some other computer application)? Please also indicate the medium (e.g. electronic, paper, etc.)
14. Did you have access to the raw data?
15. Are the raw data still available? (if so, we would greatly appreciate if you could hand these over to our Committee)
16. Who collected the raw data?
17. Who analysed the raw data?
18. Do you have access to the processed data?
19. How did you save the (raw) data?
20. Did you exclude any participants? If so, what was the criterion used to remove subjects? Was this reported in the paper?
21. Did you remove any data (e.g., outlier responses, conditions, dependent variables)? If so, what criterion was used to remove data? Was this reported in the paper?
22. Please write any other remarks on the data, the experiment, the paper, or otherwise that you would like to share us.

Appendix 4. References

[EUR Scientific Integrity Complaints Procedure](#) (January 2013)

Klaassen, C.A.J. (2013). Evidential Value in ANOVA Results in Favor of Fabrication, preliminary version 29 April 2013: <http://arxiv.org/pdf/1304.7198.pdf>

Nederlandse Gedragcode Wetenschapsbeoefening (VSNU 2004, herziening 2012).

Simonsohn, U. (2013). Just post it: The lesson from two cases of fabricated data detected by statistics alone. *Psychological Science*, 24, 1875 – 1888.

Appendix 5. Overview of Data Sources

Below is a table with sources of processed data that were available to the Committee

Paper no.	Authors	Year	Status	Experiment	received from Smeesters	Network disk Smeesters	Laptop Smeesters	Undeleted file laptop Smeesters	Provided by co-authors
1	Johnson, C.S., Smeester	2012	Withdrawn						
2	Liu, J., Smeesters, D.H	2012		1	0	0	0	0	1
				2	0	0	0	0	1
				3	0	0	0	0	1
3	Liu, J., Vohs, K.D. & Sn	2011		1	0	0	0	0	1
4	Liu, J., Smeesters, D.H.R	2012	Withdrawn						
5	Antioico, M., Smeester	2011		1	0	0	0	0	1
6	Wheeler, S.C., Smeest	2011		1	1	0	0	0	0
7	Smeesters, D.H.R.V. & L	2011	Withdrawn						
8	Fransen, M. L., Smees	2011		1	0	0	0	0	1
				2	0	0	0	0	1
9	Liu, J. & Smeesters, D.	2010		1a	0	1	1	0	0
				1b	1	0	0	0	0
				2	0	0	0	0	0
				3	0	0	0	1	0
10	Loveland, K.E., Smees	2010		1a	0	0	0	0	0
				1b	1	0	0	0	0
				2	1	0	0	0	0
				3	0	0	0	0	0
				4	1	0	0	0	0
11	Smeesters, D.H.R.V., \	2010		-					
12	Smeesters, D.H.R.V., f	2010		1	1	0	0	0	0
				2	0	0	0	0	0
				3	0	0	0	0	0
13	Lam, S. R., Morrison, I	2009		1	0	0	0	0	1
				2	0	0	0	0	0
				3	0	0	0	0	1
14	Smeesters, D.H.R.V., \	2009		1	1	0	0	0	1
				2	0	0	0	0	1
15	Smeesters, D.H.R.V., \	2009		1	1	0	0	0	1
				2	1	0	0	0	1
				3	0	0	0	0	0
				4	1	0	0	0	0
				5	0	0	0	0	0
16	Lerouge, D. & Smeest	2008		1	0	0	0	0	1
				2	0	0	0	0	1
				3	0	0	0	0	0
17	Mandel, N. & Smeest	2008		1	0	0	0	0	0
				2	0	0	0	0	0
				3	0	0	0	0	0
				4	0	0	0	0	0
18	Kay, A.C., Wheeler, S.	2008		1	0	0	0	0	0
				2	1	0	0	0	0
				3	0	0	0	0	0
19	Morrison, K.R., Wheel	2007		1	1	0	0	0	1
				2	0	0	0	0	0
				3	0	0	0	0	0
20	Smeesters, D.H.R.V. &	2006		1	0	0	0	0	0
				2	0	0	0	0	0
21	Vanbeselaere, N., Boe	2003		1	0	0	0	0	1
				2	0	0	0	0	1
22	Smeesters, D.H.R.V., W	2003		-					
23	Smeesters, D.H.R.V., \	2003		1	0	0	0	0	1
				2	0	0	0	0	1
				3	0	0	0	0	1
				4	0	0	0	0	1
24	Hermans, D., Smeeste	2002		1	0	0	0	0	1
				2	0	0	0	0	1
				3	0	0	0	0	1
25	Warlop, L., Smeesters, I	2001		-					

Note. 1 = data were available, 0 = data were not available.