

Gender, Stereotypes and Expertise in the Press: How Newspapers Represent Female and Male Scientists

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Executive summary

This report is part of a series of four reports examining the representation of gender and science. The work was commissioned by the UK Resource Centre for Women in Science, Engineering and Technology (UKRC). This part of the research examined coverage of Science, Engineering and Technology (SET) in twelve UK national newspapers over a six month period. The main findings are:

- Men are much more often cited as expert scientific sources than women: 5 men are quoted by journalists for every 1 woman. The same is true for in-depth interviews: 5 male scientists are profiled in the press for every 1 female scientist.
- Journalists are more likely to comment on appearance when writing about women: half the profiles of female scientists mentioned clothing, physique or hairstyle whereas the equivalent was true for only a fifth of the profiles of male scientists.
- Descriptions of women can imply a contradiction between being a 'real woman' and a 'real scientist'. Women in SET who are seen as conforming to traditional stereotypes such as 'the geek' are sometimes implicitly presented as unfeminine. Alternatively, if they are 'sexy' and 'glamorous' their status as scientists may be thrown into question.
- By contrast, descriptions of men working in SET seem to confirm men's status as bona fide scientists, computer whiz-kids or technological innovators.
- Our interviews with scientists reveal the negative impact that gender-stereotypes and scrutiny of appearance can have on women working in male-dominated work places. These interviews also highlight how media industries may constrain the range of publicly available images of women working in SET.

Our report concludes with recommendations for journalists who wish to avoid reinforcing inequalities and for organisations seeking to promote the positive representation of women in SET.

Chapter 1: Introduction

This research report is part of a series of four reports examining issues around the representation of gender and science in the mass media. The reports were commissioned by the UK Resource Centre for Women in Science, Engineering and Technology (UKRC). Established in 2004 and funded by DIUS, the UKRC works to improve the participation and position of women in Science, Engineering and Technology (SET) across industry, academia and public services in the UK.

There are major issues around training, recruitment, retention and promotion for women in science, engineering and technology. Girls/women are less likely than boys/men to opt to study SET subjects both at school and university (Rees, 2001; Roberts 2002; Murphy and Whitelegg, 2006). For example, women make up only 24% of computer science undergraduates, 22% of physics undergraduates and 14% of engineering and technology undergraduates (Women and Work, 2006). Even after training women are less likely than men to develop a career in SET, particularly in the most traditionally male-dominated sectors. For example, women comprise fewer than 13% of ICT and just 5% of engineering professionals in the UK (UKRC, 2005 figures). Even if women pursue a career in SET they are also less likely than men to be promoted to senior positions right across the sector. For example, women compose less than 6% of the most senior grade staff in SET in institutions of Higher Education across Europe (European Commission, 2006).

The mass media may have a crucial role in either reinforcing, or challenging such gender segregation and inequalities. The media have long been recognised as key players in society: helping to define people's sense of taken-for-granted normality as well as sometimes facilitating social change (see Eldridge et al., 1997). The media can also be an important source of 'role models'. Role model theory suggests that representations of women in SET may be important in showing young people that women can develop successful careers in science, engineering and technology. Experimental and survey research shows that the media 'exert a demonstrable impact on children's occupational knowledge and role identification' and that 'previous experience with (or information about) a successful woman in a traditionally male occupation decreases gender bias in evaluation and selection decisions made by both student and professional judges' (Phillips and Imhoff 1997: 35, 41).ⁱ

The problem, however, is that much of the media have, at least in the past, presented scientists in general in a negative light (e.g. the 'mad' or 'evil' scientist), and the media have specifically ignored, trivialised or misrepresented female scientists. (Throughout this report, we use 'scientist' as a general term to refer to anyone working within science, engineering or technology). Studies of news reporting, for example, highlight asymmetry in how the news media

present male and female scientists. A study of stories in *The New York Times* for 1996 and 1997, found that women scientists were used as 'tokens' in science stories with a strong emphasis placed on their role as wives and mothers (Shachar, 2000). Another study, by Haran et al. (2008), explored the way in which scientists were framed in press and TV news discussions of stem cell research and human cloning. These authors highlight how assessments of 'respectable' and 'deviant' science were refracted through norms of femininity. The 'bad' female scientist was framed through the lens of the monstrous feminine (Haran et al., 2008: 89-91). The respectable face of cloning research was illustrated by an unthreatening, demure and conventional image of a female scientist. The disreputable danger posed by reproductive cloning was highlighted through the image of the deviant female who, according to one commentator had 'the theatrical pose of the Addams Family's Morticia' and, according to another 'was dressed all in black down to her fishnet stockings, with her hair dyed orange'. (Haran et al., 2008: 89-91)

“dressed all in black down to her fishnet stockings, with her hair dyed orange”

Research into the profile of female scientists in the past has also highlighted problems. Studies reviewing magazine and press reports from the 1920s to the 1980s in the US, for example, highlight the emphasis that has been placed on female scientists' maternal, wifely or housekeeping prowess. LaFollette (1988) examined 11 mass circulation U.S. magazines from the first half of the twentieth century (1910-1955). In over 3,300 magazine issues published over a 45-year period, she found that not one single woman was listed as the author of an article on mathematics, astronomy, archaeology, or palaeontology, despite the fact that women were actively engaged in research in those fields. She found that scientific research was consistently portrayed as requiring certain 'masculine' attributes and, where women scientists were represented, they were portrayed as extraordinary.

Articles about women who were successful scientists repeatedly asserted that these women were still fulfilled through marriage and motherhood rather than through research. Indeed, stories cited by researchers such as LaFollette (and those cited in a similar study by Nelkin) include examples which now seem very dated and sexist indeed. In 1926 *The World's Work magazine* introduced eminent medical researcher, Florence Rena Sabin, as a woman whose mahogany furniture 'gleams'. In 1940 the *Watchman* magazine profiled a leading astronomer, Helen Sawyer Hogg, and informed readers that she made her own bedspreads. In 1950 *American magazine* praised the chief of the Mineralogical Laboratory at the Atomic Energy Commission because she designed and made her own clothes (LaFollette 1988: 267).

A subsequent study by Nelkin (1986) examining reports from the 1960s to the 1980s found that such feminine reference points were still very much in

evidence. For example, Maria Mayer, who shared the Nobel physics prize in 1963 for her work on the structure of the nucleus, was described by *McCall's* (1964) as: 'a tiny, shy, touchingly devoted wife and mother...who makes people very happy at her home...her children were perfectly darling' and pictures in the *Science Digest* showed her at her kitchen stove not in the laboratory (Nelkin 1995: 19). Barbara McClintock, recipient of the 1983 Nobel Prize in medicine featured in the *New York Times*, as 'well known for baking with black walnuts' (cited in Nelkin 1987: 19).

“a tiny, shy, touchingly devoted wife and mother...who makes people very happy at her home...her children were perfectly darling” (McCall', 1964)

It is against this background that the UKRC commissioned the Cardiff University School of Journalism, Media and Cultural Studies to conduct a study examining the media presentation and representation of women in SET – with a particular focus on recent media representations in the UK. This included studying representations of women scientists in newspapers, in film and on television. It also included talking to press officers to explore the role they might play in promoting positive media representations of women in science. The research as a whole resulted in four reports. The research summarised in this second report – focused on how scientists appear in the press.

This report is structured as follows:

- Chapter 2 outlines our research method.
- Chapter 3 examines the newspaper stories about SET which include quotes from male or female scientists. It examines how often men and women were quoted, and whether there were any differences in how they were introduced as experts in SET.
- Chapter 4 examines the in-depth profiles of scientists – presenting a basic *quantitative* introduction to the nature of these profiles (e.g. how often male female scientists were profiled and the papers in which they featured).
- Chapter 5 presents a more *qualitative* examination of the way in which male and female scientists were profiled, in particular highlighting the asymmetrical focus on women's appearance. We also contextualise this analysis by drawing on interviews with high-profile women scientists exploring their experiences of being represented in the media.
- Chapter 6 presents a summary of our recommendations.

Chapter 2: Research method

Our key interest in this part of the research was in how women in SET are represented in the UK press – we wanted to examine how often male and female scientists were quoted in stories and how men and women were introduced and described (both in routine news reports and in in-depth interviews with prominent individuals).

Press sampling strategy

Our sample covers a range of broadsheets and tabloids: six dailies (*The Times*, *Guardian*, *Daily Mail*, *Daily Telegraph*, *Sun* and *Daily Mirror*) and six Sunday papers (*Mail on Sunday*, *Observer*, *News of the World*, *Sunday Mirror*, *Sunday Times* and *Sunday Telegraph*). The newspapers were accessed via Lexis-Nexis, an online searchable database of UK national, international and local newspapers. Searches were conducted to collect all articles about science, engineering and technology published during the first six months of 2006.

This yielded a sample of 7,903 articles about SET. This data base was then sub-sampled in two ways.

- We identified every article about 6 key areas of SET. These were chosen to reflect a span of areas across science, engineering and technology and consisted of stories focussed on: human genomics, cloning/stem cells research, space, military technology, Interconnectivity and computers (see Table 2.1 for definitions). This produced a sub-sample of 1,503 articles – each of which was examined to see whether any scientists were quoted within it.
- We also examined the entire six month sample to identify every profile of male or female scientists (e.g. the interview with prominent individuals exploring their achievements or points of view in-depth). This identified a total of 51 profiles.

Press coding and analysis

In order to examine how men and women were quoted in the 6 key areas of SET over our six month period we coded each of 1,503 items into Atlas-it identifying the headline and date of the item, who authored the piece, and which paper it appeared in. We recorded how many men and women were quoted in these articles and the order in which they were quoted. We also noted if there were any references to the scientist's relationship status, career breaks, whether children were mentioned, reference to ethnic identity, disability, and appearance (See Appendix 1 for the coding sheet).

In order to analyse the 51 in-depth profiles of male and female scientists a similar coding strategy was pursued – but in this case we were also able to do *qualitative* analysis, producing a detailed comparison of how male and female scientists were described. We examined the type of adjectives used about men and women and details of how their clothing or hairstyles were described.

Finally we were able to contextualise findings from analysis of our two press samples by drawing on earlier research we had conducted with women working in SET exploring their views of media coverage (see Kitzinger et al., 2008). In particular we contextualise our findings in the final section of this report by drawing out comments from prominent women scientists about their experiences of being profiled in the media. We also reflect on the impact of such profiles on women working in SET in general. (This material is based on data from 86 women – the method for this part of the study is presented in report 1 – and therefore not repeated here, Kitzinger et al., 2008). We also invited comment on this report from a couple of experienced women journalists in order to help refine our recommendations for the media.

Table 2.1 Defining our key SET areas

Cloning and Stem Cells	Items where the central subject is the use and development of animal cloning, therapeutic cloning, recombinant DNA technology/DNA cloning, and/or reproductive cloning.
Human Genomics	Items where the central subject is innovation, policymaking and research in human genomics.
Interconnectivity	Items where the central subject is remote access to digital information via interconnected devices, including regulation and censorship of digital information, irrespective of the devices used.
Computers	Items about computers of all kinds, where the central emphasis is not on the interconnectedness of devices.
Military Technology	Items where the central subject is innovation and research in contemporary armour, artillery, chemical/nuclear/biological weapons, explosives, firearms, fortifications; military vehicles of all kinds, and/or surveillance equipment.
Space	News items where the central subject is innovation and research in contemporary astronomy, cosmology and/or space exploration.

Chapter 3: The use of male and female scientists for expert comment

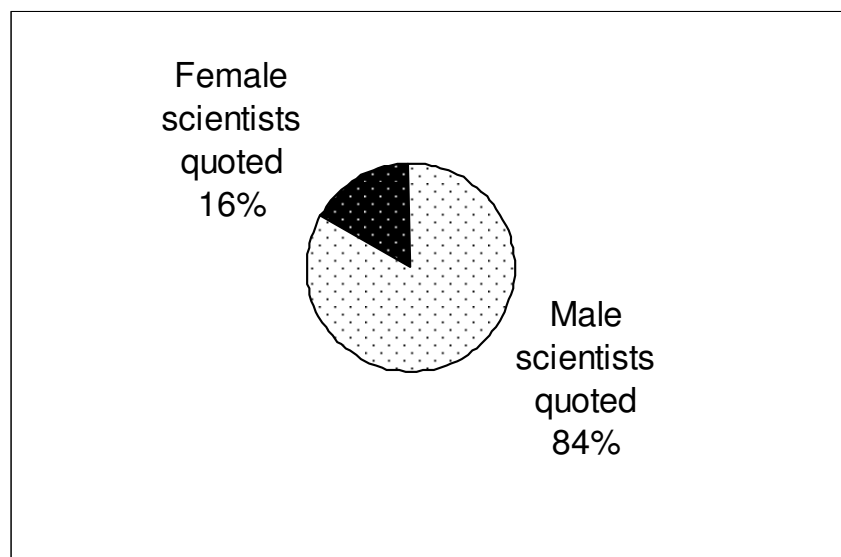
This chapter asks the questions:

- How *often* do male and female scientists feature in the press as experts?
- What *prominence* are they given?
- What *areas of SET* are they invited to comment upon?
- Are there any differences in how male and female scientists are introduced?
- Are there any differences in the profile given to male and female scientists depending on the nature of the newspapers, or depending on the gender of the journalist?

3.1 The number and ordering of quotes from male and female scientists

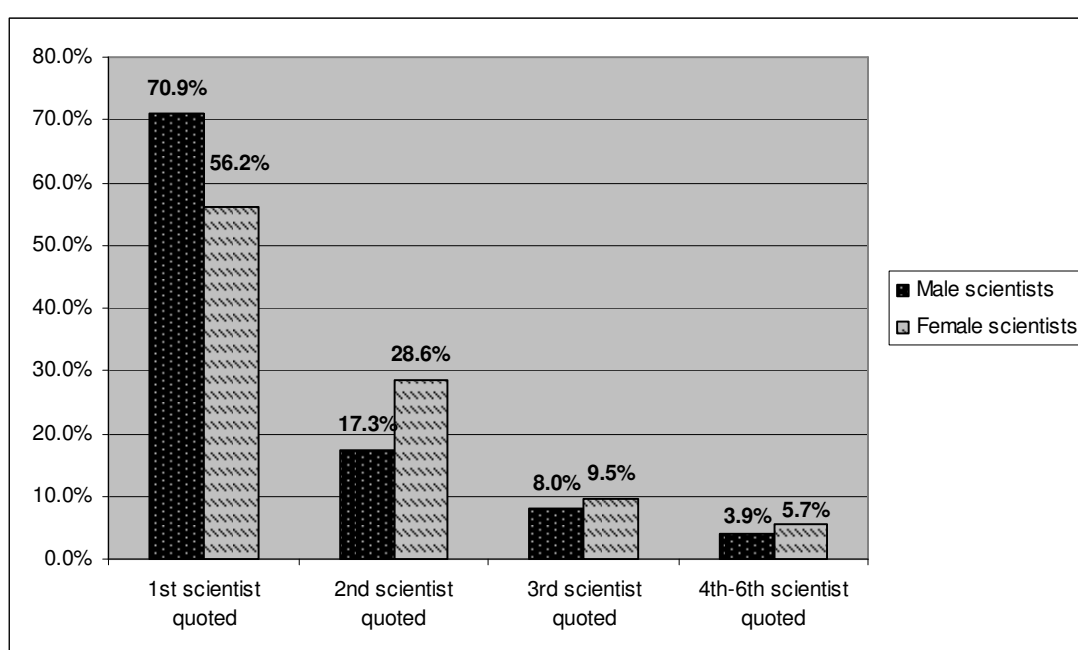
In our sample of 1,503 articles there were 644 quotes from scientists.ⁱⁱ Most of these quotes, 84% (n=539), were from men. Only 16% (n=105) were from women. In other words about 5 male scientists are quoted for every one female scientist (see fig 3.1).ⁱⁱⁱ

Fig 3.1 Proportion of quotes from male and female scientists in newspaper reporting of SET



Not only were men much more likely to be quoted than women, they were also much more likely to be quoted *first*, with women (even when they *were* quoted) relegated to a secondary source. Fig 3.2 shows that only 56% of women in our sample were cited first in the news stories in which they appeared, compared with 71% of all men quoted. In other words, less than one third of men were relegated to the status of additional sources, compared with almost half of all female scientists.

Fig 3.2 Gender of scientist by prominence of quotation (as a % of total number of scientists of each gender quoted in newspaper articles)

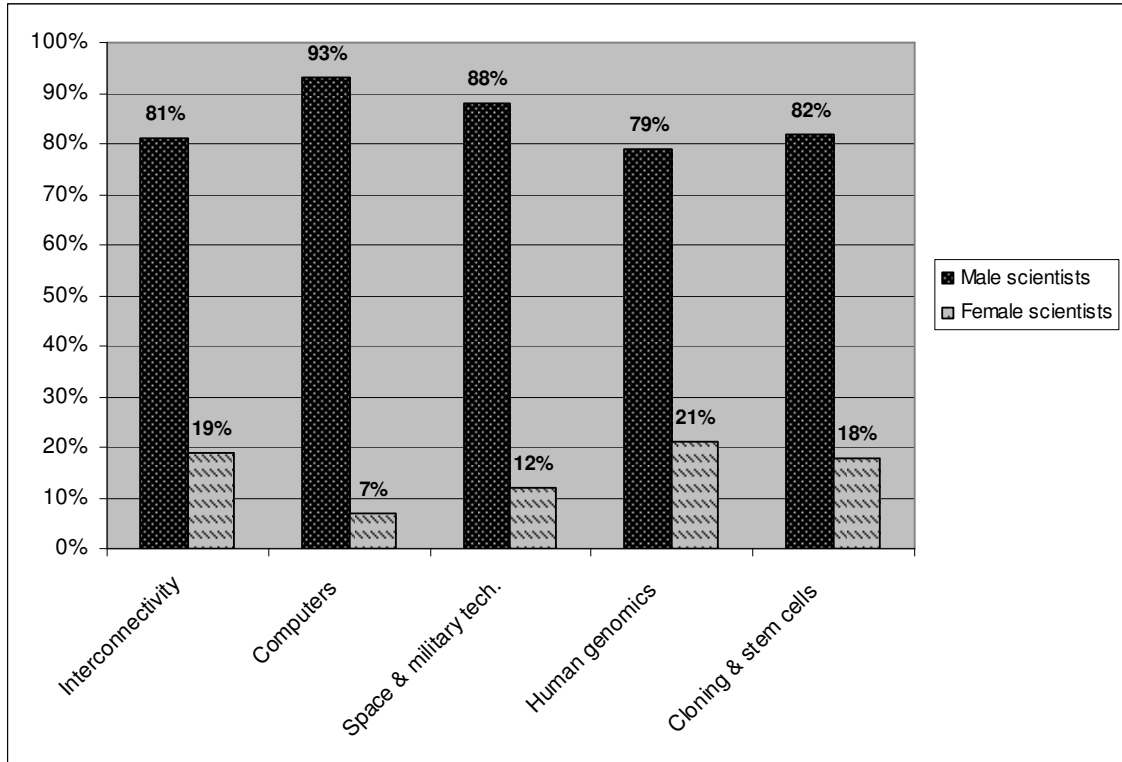


This data was found to be statistically significant using the Pearson Chi-Square Test ($P < 0.05$)^{iv}

3.2 The gender of scientists quoted in different areas of SET

Men are quoted more often than women in all of the areas of SET we examined. However, the chances of female experts being quoted are higher in some areas than in others. Research into genetics and stem cells is far more likely to be commented on by female scientists than military technology or space exploration, for example (see Fig. 3.3).^v This finding can be related to the fact that a larger proportion of female scientists work in some fields rather than others. For instance women make up between 40% and 50% of those working in medical sciences but are less well represented in other areas of SET (European Commission, 2006). However, even where women do represent a high proportion of the work force (such as in medical sciences) they are still relatively under represented in the public profile of science.

Figure 3.3 Gender of scientist quoted from different areas of SET

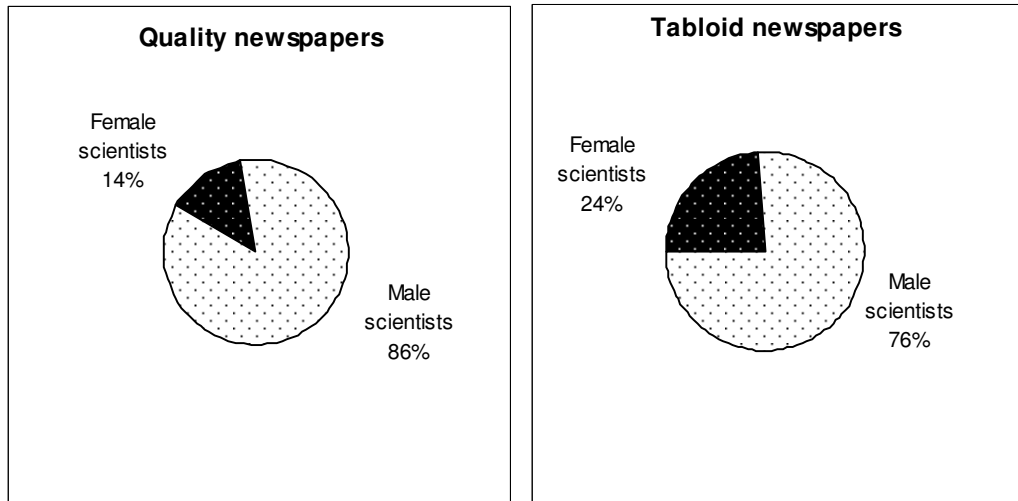


This data was found to be statistically significant using the Pearson Chi-Square Test ($P < 0.05$)

3.3 The proportion of male and female scientists quoted in different newspapers

Whilst all newspapers are more likely to quote men than women, different newspapers give more prominence to women than others. See Fig 3.4. There were some interesting differences between the 'broadsheet'/'quality' press, and their mid-market and tabloid counterparts. Overall, female scientists made up 24% of the experts quoted in the mid-market and tabloid papers, but just 14% of those quoted in the 'quality' press.^{vi} This seems to be partly linked to the mid-market/tabloid papers covering a different type of SET story. Female scientists were cited in the tabloids mainly in a cluster of recurring popular stories about 'cyber bullying' and the screening of embryos for 'abnormal' genes. A number of one-off stories, such as one about the use of pigeons to measure air pollution, which used comments from female scientists, also contributed to this trend.

Figure 3.4 Proportion of male and female scientists quoted in 'quality' and 'tabloid' newspapers



*This includes all daily and Sunday newspapers, 'Tabloids' includes the *Daily Mail*.

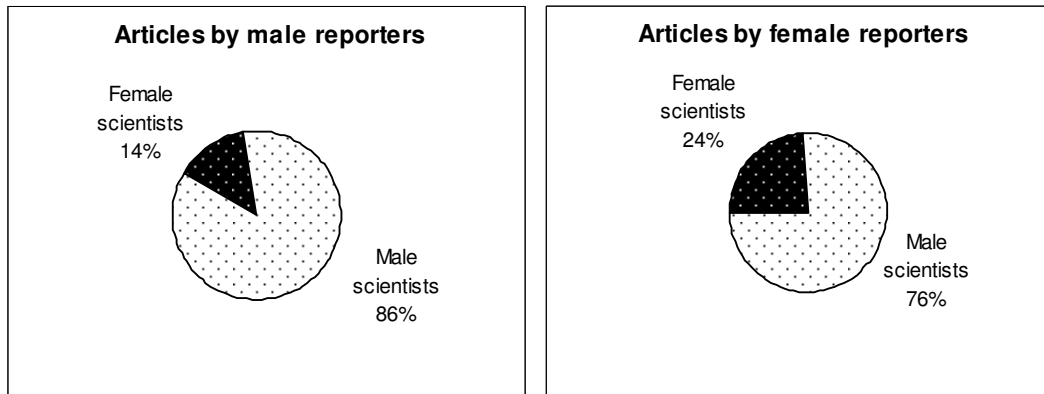
This data was found to be statistically significant using the Pearson Chi-Square Test ($P < 0.01$)

3.4 The gender of scientists quoted in stories by male and female reporters

Our coding frame was also designed to explore whether the gender of the journalist made any difference to whether they quoted male or female scientists. Fig 3.5 shows that this is indeed the case. Male journalists used quotes from male scientists on 400 occasions, but quotes from female scientist on only 66 occasions. Female journalists used quotes from male scientists on 100 occasions and quotes from female scientists on 31 occasions. In other words, the ratio of male to female scientists quoted by male journalists is about 6:1, whereas it is about 3:1 for female reporters. Reporters responsible for this trend include the *Sunday Times*' health correspondent Sarah-Kate Templeton, the *Daily Mail*'s health reporter Peeta Bee and its science writers Fiona Macrae and Julie Wheldon. (For discussion of similar findings in relation to the gender-balance of reporting about other issues see Van Zoonen, 1998).

The fact that female journalists cite more female scientists could be related to the type of story the journalist covers (with the choice of source to quote following on from that). This might, in turn, cross-link with the fact that more women journalists wrote for the tabloids. It could also relate to the way in which journalists directly select their sources. We explored this further by looking closely at the type of stories addressed by female journalists writing about SET.

Figure 3.5 Gender of scientists quoted in stories by male and female reporters



This data was found to be statistically significant using the Pearson Chi-Square Test ($P < 0.01$)

We found that, in most cases, when female reporters cite female scientists their male colleagues do the same when covering the *same* story. This suggests that common news values prevail over gender-related factors in the selection of sources. However, in several instances female reporters write stories quoting female scientists which no male reporters cover. There are also some examples of *the same story* being covered quite differently by male and female journalists, with some male reporters citing more men as sources and female journalists quoting more women.

A good example of the latter can be found in coverage of the return to Earth of a NASA capsule containing scientifically valuable dust from the 'tail' of a comet in January 2006. The story was first covered on January the 14th by Alok Jha, the *Guardian's* science correspondent. Jha cites as his sole scientific source Professor Monica Grady (who was to be one of the first scientists to analyse the comet dust) (*Guardian*, January 14, Jha 2006). He and his colleague James Randerson, who wrote a follow-up story two days later, are the only male reporters to cite this female SET practitioner (*Guardian*, January 16, Randerson, 2006). Eleanor Mayne wrote an article for the *Mail on Sunday* on the NASA project on 15th January, and also quoted Professor Grady. She is the only female reporter to write about the episode, and she uses this female scientist as her only source (Mayne, 2006). The other three male reporters who covered the event (writing for the *Telegraph*, the *Daily Star*, and *The Times*) all quote only male NASA scientists involved with the project (White 2006, Henderson 2006; Fleming, 2006).

3.5 The way scientists are introduced and described

There were very few references to the interviewees' appearance, age, nationality, marital and/or parenthood status in our sample.^{vii} (This is in contrast to our findings from the in-depth profiles/interviews – see Chapter 5). Just 12 of

the scientists quoted were referred to by their nationality (2%), 11 had reference made to their age, 6 to their appearance, 5 their marital status, and in six cases reference was made to whether they were parents. Most of these references were made about different scientists, and not clustered around descriptions of particular sources (except in the case of the UK astronaut Piers Sellers, and Professor Heinz Wolff addressed below). In the vast majority of cases, then, when scientists are introduced by journalists as expert sources they are framed without any extra reference to personal/demographic characteristics.

In the overwhelming majority of cases the language used to introduce scientists of both genders is also very non-descriptive. Scientists were rarely portrayed in anything but the most neutral tones. The most striking exception to this rule was a piece about self-proclaimed 'geek' and Google computer scientist Marissa Mayer who is described as having been referred to online as 'hot', a 'honey', and as looking 'like Scarlett Johansson' (*Observer*, January 22, Smith, 2006).

The few references to people's clothing were confined to passing mentions, such as one article which talks of the 'trademark black turtleneck' worn by Apple CEO Steve Jobs (*Guardian*, January 11, Litterick, 2006). Most allusions to scientists' nationality were made in a fairly innocuous way, for example a story from the *Sunday Times* cites 'Peter Frost, a Canadian anthropologist' (Dobson and Taher, 2006), or another from the *Guardian* quotes "David Laney, an American astronomer based in Cape Town' (Carroll, 2006).

The use of overt stereotypes to describe scientific sources was very rare in the sample. The most obvious example of this is found in a piece about the scientist Professor Heinz Wolff, who is described as 'the archetypal nutty professor'. This article, also comments on the untidiness of the scientist's office (which is in 'disarray – littered with pieces of computer, children's toys and biscuit tins'), and his hair and bow-tie, which are 'askew', making him look 'mischievous' (*The Times*, June 6, Lewis 2006).^{viii}

3.6 Conclusion

Our analysis of how male and female scientists were quoted reveals the following key findings.

- Men are much more often cited as expert scientific sources than women. Newspaper reports of SET quote five men for every one woman.
- Mid-market/tabloid newspapers carry fewer SET stories, when they *do* carry give proportionately more prominence to women compared to their broadsheet counterparts. The ratio of men to women scientists quoted in the tabloid press is 3:1, whereas in the "quality" newspapers it is 6:1.

- Female journalists are more likely than their male colleagues to quote female scientists. The ratio of male to female scientists quoted by male journalists is 6:1, whereas it is 3:1 for female reporters.
- Women are more likely to be quoted in stories about some areas of SET than others. Research into genetics and stem cells is far more likely to be commented on by female scientists than computers, military technology and space exploration.
- There is little difference in how men and women in SET are described when they are simply being introduced for expert comment. Most introductions are brief and relatively neutral.

Our analysis shows that there is little difference in how male and female experts are framed when they are simply introduced into reports for expert comment. However our research also shows that newspaper readers would routinely have the male-dominated nature of SET confirmed by the fact that a higher proportion of quotes come from male, rather than female, experts. The view of certain areas of SET as almost exclusively male preserves would also be confirmed. There are, however, crucial difference depending on the type of newspaper and the gender of the journalist. This has implications for any efforts to promote a higher profile for women in SET, and these are discussed in Chapter 6.

Chapter 4: Profiles of scientists – a basic quantitative overview

This chapter presents an overview of our second data set – the 51 articles based on journalists' in-depth interviews with, and profiles of, scientists. In this chapter we explore the comparative attention given to male and female scientists and explore *where* the profiles featured, *who* they were written by, and the *areas of SET* in which the scientists worked. This chapter also presents quantitative data about the attention given to men and women's appearance.

The total number of scientists profiled in the first six months of 2006 was 51. These 51 profiles appeared in 49 articles, as one article profiled 3 individuals. In the sections that follow, all figures below are presented as a proportion of the number of profiles (not the number of articles). We also decided to expand on the original research design by contextualising these figures within a broader sample, by tracking down profiles of two particularly prominent women scientists for our qualitative analysis. (See Chapter 5)

Note: The small number of profiles focussed on female scientists makes some of the figures below indicative of potential trends, rather than significant findings in their own right. We therefore do not present the data as graphs or pie charts to avoid the findings becoming separated from the actual numbers.

4.1 What was the proportion of newspaper profiles of men versus women?

There were 43 profiles of men and 8 profiles of women. In other words, 84% of those profiled were male scientists, and 16% were female. The headlines give some flavour of these reports. Examples of profiles about men include:

- 'Tech hippy spreads 'good word' of free advertising' (*The Times* March 17, Sherwin, 2006)
- 'The ringmaster of the blogosphere' (*Guardian*: February 16, Moody, 2006)
- 'Southern gent who wants to reignite energy talks' (*Daily Mail*, February 9, Fleming, 2006)
- 'Meet man who's made 10,000 children' (*Sun*, June 1, Symons, 2006)

Profiles about women included:

- 'Injecting enthusiasm into science' (*Sunday Times* June 18, Thorpe, 2006)
- 'OS boss masters the digital age' (*Sunday Times*: June 4, Huw Davies, 2006)
- 'The gender mender' (*The Times* February 18, Parry, 2006)
- 'In Search of the Snow Leopard: Nearly eaten by polar bears, stalked by giant spiders (and a close shave with Bin Laden) ...for four years this woman endured unimaginable hardship to create what may be the most

amazing wildlife series ever made' (*Daily Mail*, March 3, Courtenay-Smith, 2006).

4.2 In which newspapers did the profiles appear?

Most of the profiles of people working in SET appeared in the broadsheet/ 'quality' press. The *Guardian*, *Times* and the *Sunday Times* carried the bulk of relevant items. Table 4.1 lists the number of profiles by newspaper. This highlights the fact that half of all the women profiled appeared in the *Sunday Times* (a particularly striking finding given that the dailies produce 6 editions for every one edition of a Sunday paper). It is also worth noting that, among the tabloid press, the *Daily Mail* stands out. The *Daily Mail* was the *only* tabloid in our sample period to profile a *woman* scientist. This may be important to note for any strategy aimed at promoting more, or 'better', representation of women in SET to a wide variety of audiences. The finding is consistent with the *Daily Mail's* emphasis on health/science, and its targeting of female readers.

Table 4.1 Number of profiles of men and of women in different newspapers

Profiles by Newspaper	No. of Profiles	%	No. of women	as a % of women
Daily Newspapers				
<i>The Guardian</i>	14	32.6%	1	12.5%
<i>Times</i>	11	25.6%	2	25.0%
<i>Daily Telegraph</i>	5	11.6%	0	0.0%
<i>Daily Mail</i>	3	7.0%	1	12.5%
<i>Sun</i>	2	4.7%	0	0.0%
<i>Daily Mirror</i>	1	2.3%	0	0.0%
Sunday Newspapers				
The <i>Sunday Times</i>	4	9.3%	4	50.0%
<i>Observer</i>	3	7.0%	0	0.0%
<i>Sunday Mirror</i>	0	0.0%	0	0.0%
<i>Mail on Sunday</i>	0	0.0%	0	0.0%
<i>News of The World</i>	0	0.0%	0	0.0%
<i>Sunday Telegraph</i>	0	0.0%	0	0.0%
Total	43	100	8	100

4.3 In which sections of the paper did the profiles appear?

Table 4.2 shows the newspaper *section* in which the profiles of male and female scientists appeared. The results show that 2 profiles of female scientists appeared in the 'body and soul' section of *The Times* (an insert on Saturdays which covers subjects such as food, health, sex and beauty). Another 2 of the profiles of female scientists appeared in the 'appointments' sections. These two sections thus account for half of all the profiles of women. By contrast only 9.7% (4) profiles of men appeared in such formats. This finding suggests that any strategy to increase the number of profiles of women in SET might most

successfully target certain sections of newspapers rather than others. It also suggests a need to develop additional strategies to ensure that women are profiled in a wider range of sections of the newspaper.

Table 4.2 The *section* of the newspapers which carried profiles of male and female scientists

Section	No. of Men	as a % of no. of men	No. of Women	as a % of no. of women
Features	11	25.6%	1	12.5%
Education	5	11.6%	1	12.5%
Not Specified	4	9.3%	1	12.5%
Appointments	2	4.7%	2	25.0%
Business/Mark ets	4	9.3%	0	0.0%
Body & Soul	2	4.7%	2	25.0%
Technology	3	7.0%	0	0.0%
Times Magazine	3	7.0%	0	0.0%
Comment	2	4.7%	0	0.0%
News	1	2.3%	0	0.0%
City	1	2.3%	0	0.0%
Foreign/Overse as	1	2.3%	0	0.0%
Media	1	2.3%	0	0.0%
Special Supplement	0	0.0%	1	12.5%
Games	1	2.3%	0	0.0%
Books	1	2.3%	0	0.0%
Health	1	2.3%	0	0.0%
Total	43	100	8	100

4.4 Who were the journalists who wrote the profiles?

There are some interesting patterns related to the journalist's gender. Although both male and women journalists mostly profiled male scientists, women journalists were more likely than their male counterparts to profile women (24% vs. 13%) (see Table 4.3.). We do not know however, whether this is an outcome of editorial decision-making or the preference of the journalists. For example, it may be that once an editorial decision has been taken to profile a particular scientist, gender-matching is pursued. It may also be the product of female journalists choosing (or being 'side-lined') into specialising in particular areas – areas in which, in turn, more female scientists also work.^{ix}

Table 4.3 Gender of journalist who authored profiles of men and women scientists

Gender of profiled scientist	Male journalist	As a % of male journalist	Female journalist	As a % of female journalist
Male	26	87%	13	76%
Female	4	13%	4	24%
Total	30*	100	17*	100

*The figures refer to the gender of journalists - as 2 of the profiles had no by-line, we can thus only determine the gender of 47 of the journalists.

4.5 What areas of SET were addressed in the profiles of scientists?

We also examined the number of profiles about men and women working in different areas of SET. Table 4.4 shows this information broken down by the gender of the scientist profiled. This analysis shows that women scientists profiled in the press were more likely than men to be working in human healthcare technologies (50% vs. 16.5%). The profiles of men working in SET represented a much *wider range* of areas of SET. This in part reflects the fact that women have achieved “near-parity in the medical sciences’ but are less likely to be working in other sectors such as engineering and technology or the natural sciences (European Commission, 2006).

Table 4.4 Subjects of profiles, comparing male and female scientists

Subject	Men	as a % of no of men	Women	as a % of no of women
Human Healthcare technologies	7	16.3%	4	50.0%
Interconnectivity	7	16.3%	1	12.5%
Animals	6	14.0%	1	12.5%
Energy	6	14.0%	0	0.0%
Education	2	4.7%	1	12.5%
Entertainment Technologies	3	7.0%	0	0.0%
Reproductive Technologies	1	2.3%	1	12.5%
Space	2	4.7%	0	0.0%
Human Genomics	2	4.7%	0	0.0%
Other Science	2	4.7%	0	0.0%
Food	1	2.3%	0	0.0%
Transport	1	2.3%	0	0.0%
Human Psychological Science	1	2.3%	0	0.0%
Military Technology	1	2.3%	0	0.0%
Other Technologies	1	2.3%	0	0.0%
Total	43	100	8	100

4.6 What specific characteristics were mentioned?

Finally we systematically examined how male and female scientists were described – the details mentioned about their demographic, social or physical characteristics. The profiles of scientists commonly mentioned their age (in 2 out of every 3 cases) and sometimes referred to their nationality (1 in 3 cases)^x and their parenthood (1 in 4) or relationship status (in 1 in 5 cases). These characteristics were slightly more likely to be mentioned in profiles of *female* rather than *male* scientists; however, the numbers are too small to generalise.^{xi}

The one striking difference that *did* emerge concerned the attention given to men's and women's appearance. Half of the profiles of women mentioned their clothing, physique and/or hairstyle whereas this was only true for one fifth of the profiles of men. Qualitative analysis also revealed that the way in which men and women were described was very different. We pursue this through qualitative analysis presented in the next chapter.

4.7 Conclusion

The ways in which male and female scientists are described in in-depth newspaper profiles reflects, and represents, women's minority and, in some ways, 'deviant status' within some areas of science, engineering and technology. There are, however, some important differences depending on the outlet and the journalist. These might be significant for any attempts to improve the profile of scientists in the press. Our main findings are as follows.

- There is a scarcity of profiles of women scientists in the press.
- Female scientists are portrayed as working in a narrow range of *fields* (e.g. human health technologies). By contrast men are represented as working across the full gamut of SET.
- Female scientists are more likely to be profiled in certain *parts* of the newspaper (e.g. the 'soft' section), whereas men are profiled across a wider range of newspaper sections.
- Some newspapers are better than others at highlighting women in SET (e.g. *The Times*, *Sunday Times* and *Daily Mail*).
- Female journalists are more likely than male journalists to profile female scientists.
- There is some evidence that journalists focus more on characteristics such as age and marital status when writing about female, rather than male, scientists.
- Journalists will comment on female scientists' appearance more often than they comment on the appearance of male scientists.

The practical implications of such findings are summarised in our recommendations chapter, Chapter 6.

Chapter 5: Profiles of male and female scientists – a *qualitative* analysis

5.1 Reflection on the significance assigned to appearance

This chapter focuses on how male and female scientists are described when they are subject to in-depth profiles. This emerged as a significant issue from our *quantitative* analysis, and was therefore subject to further, *qualitative*, inquiry. The qualitative analysis was pursued firstly by revisiting our six month sample, and then, separately, by expanding the research to track profiles of the two most high-profile female scientists in the UK.

5.1.1 A systematic comparison of profiles on male and female scientists profiled in a six month period.

The qualitative analysis of our original sample of 51 profiles (January to June 2006) highlighted that there were not only differences in how *often* a scientist's appearance was mentioned (depending on whether they were female or male). Closer attention also revealed that there were differences in the *way* such descriptions were presented.

Examples of the type of attention focused on women scientists' appearance can be illustrated by quotes such as: 'She is impressive, an immaculately groomed woman of 70, who could easily pass for 15 years younger'^{xii} (*The Times*, February 18, Parry, 2006) and 'This petite, feisty communicator...' (*Sunday Times*, June 18, Thorpe, 2006). Other descriptions included references such as: 'The 55-year-old academic's mane of blonde hair, her short, navy voluminous skirt – [...] teamed with a Vivienne Westwood jacket and knee-length boots sets a high benchmark' (*Sunday Times*, February 26, Bowditch, 2006).

When appearance is mentioned for *men* it tends to be rather brief and carries a rather different tone. For example, while women might be described as having a 'mane of blonde hair', the focus for men is more likely to be on a beard, with rather different connotations e.g. 'His full white beard is worn more in homage to Charles Darwin than the Almighty' (*Observer*, March 12, Adams, 2006).

References to clothing are also quite different depending on the gender of the scientist being profiled. For example, the *Guardian* informs readers that a scientist is 'in a suit, which his colleagues say is the exception rather than the rule' (*Guardian*, January 24, Nordling, 2006), another is described as 'the picture of the relaxed, trendy academic - dark jeans, black T-shirt and gold-rimmed glasses' (*The Times*, June 8, Ahuja, 2006), while, in the *Observer*, the boss of Nintendo is described as: 'Dressed in Jeans and Nintendo T-shirt; Miyamoto is relaxed and prone to occasional bouts of wackiness' (March 19, Mathiason, 2006). Not only is the 'typical academic' implicitly male (in black T-shirt and gold-rimmed glasses') we would also note the contrast between the

'immaculately groomed' or fashionably attired women and the informally dressed men profiled in the press. This in part reflects how clothing may signify rather differently for male and female scientists - an issue which emerged from our interviews with scientists and is explored in Report 1. (See Kitzinger et al., 2008)

The computer 'nerd' image also plays out in some accounts. One 'entrepreneur behind the pioneering website that threatens the global newspaper business model', for example, is introduced by the headline as a 'hippy' and describes himself as having been 'the boy with the "black plastic glasses taped together"' (*The Times*, March 17, Sherwin, 2006). As these examples illustrate description of the appearance of *male* scientists often bounce off the 'Einstein/Darwin' stereotype or relate to the image of the (implicitly male) hippy entrepreneur turned technological wizard or the young 'nerd' or 'geek' who has built up a fortune as a computer entrepreneur.^{xiii}

Table 5.1 Examples of how male and female scientists are described in passing in 'quality' press reports (January-June 2006)

Male	Female
'His full white beard is worn more in homage to Charles Darwin than the Almighty' (<i>Observer</i> , March 12, 2006)	'an immaculately groomed woman of 70, who could easily pass for 15 years younger' (<i>The Times</i> , February 18, 2006)
He is 'the picture of the relaxed, trendy academic - dark jeans, black T-shirt and gold-rimmed glasses' (<i>The Times</i> , June 8, 2006)	'This petite, feisty communicator...' (<i>Sunday Times</i> , June 18, 2006)
He was 'the boy with the "black plastic glasses taped together"' (<i>The Times</i> , March 17, 2006)	'The 55-year-old academic's mane of blonde hair, her short, navy voluminous skirt – [...] teamed with a Vivienne Westwood jacket and knee-length boots sets a high benchmark' (<i>Sunday Times</i> , February 26, 2006)

5.1.2 A case study of two scientists

We decided to pursue some of the issues emerging from analysis of our 6-month sample by locating a few more profiles of women in SET. We therefore searched a wider time frame, including a search of *local* as well as national papers for further profiles. We chose to search on the names of two of the most well-known women scientists in the UK: Professor Kathy Sykes and Baroness Susan Greenfield (the latter was the subject of the description highlighted in Table 5.1 above).

Baroness Susan Greenfield is Professor of synaptic pharmacology at Oxford University and, since 1998, has been Director of the Royal Institution. She also helped found the Science Media Centre and authored the 'SET Fair' report on women in SET (Greenfield, 2002). Her extensive media appearances include her 6-part BBC2 series '*Brain Story*'. Professor Kathy Sykes holds a Chair in 'Public Engagement in Science and Engineering' at Bristol University. Like Greenfield she is very well-known – including appearing on the BBC programme '*Rough Science*' and presenting a television series on alternative medicine. Both women present themselves on multiple platforms (via the media and in various public events). Both are also framed, promoted, interpreted, or presented by others (including TV producers who invited them to participate in programmes, colleagues who comment upon them and journalists who profile them). As two of the most high-profile scientists in the UK these presentations have a disproportionate impact on the public image of the women in SET.

Our additional research on the profile of these two scientists confirmed the great emphasis that is placed on women's appearance. Journalists highlighted, for example, Baroness Greenfield's 'shoes of teetering altitude' and 'miniskirt of dizzying brevity' (*The Times*, October 21, Naish, 2006) and Professor Sykes 'spaghetti-strap top and fashion-diva scarf' (*Bristol Evening Post*, April 27, Greenwood, 2002). Some descriptions read as if they came from the fashion and shopping pages. We are informed about Professor Greenfield's 'shocking pink Gap twin-set, matched with Guerlain's pink lipstick' (*The Times*, February 25, Taylor, 2000) or her 'pale pink gilet, fine lilac twin set from Whistles, black pelmet skirt by Giorgio Armani, black tights and clumpy block wedges from an exclusive shop in London's Sloane Street' (*Mail*, July 18 Kelly, 2000).

On the one hand, some such descriptions might be welcomed because they show female scientists as well-groomed and fashion-conscious. Such representations may be viewed as useful to contradict the image of scientists as nerdy, frumpy, socially incompetent, or 'masculine' (images seen to discourage some girls from pursuing careers in SET).^{xiv} Some journalists clearly used descriptions of female scientists such as Baroness Greenfield and Professor Sykes as an opportunity to challenge the dominant image of the boffin and indeed, of the 'bimbo'. Thus one article profiling Susan Greenfield was headlined: 'Blonde hair, short skirt, big brain' (*Herald*, April 28, Langdon, 2001). The opening lines of another, titled 'The scientist and the human factor', introduced Professor Sykes by stating: 'There is no twitching moustache and no spinning bow tie. There is no crazy hair' (*The Times*, January 11, Ahuja, 2005). Another article hailed her as 'a dynamic role model who challenges the notion that scientists are stuffy old men'. (*Western Mail*, December 16, Reddy and Brake, 2004);^{xv} while a third commented 'Kathy has the rare ability to communicate brilliantly, without a trace of the "nerdy" image which she admits can dog many a white-coated lab genius' (*Bristol Evening Post*, April 27, Greenwood, 2002). There seems to be an interesting tendency to use women's

first names only - but further research would be needed to explore whether or not this is a significant trend.

‘BLONDE HAIR, SHORT SKIRT, BIG BRAIN’ (*Herald*, April 28 2001)

At the same time, however, some of the focus on female scientists’ appearance can have some negative connotations. It can, for example, draw attention away from the scientist’s professionalism to her physical appearance – and there may be the implicit accusation that women are being manipulative and using their sexuality to promote themselves. This can be further illustrated by quotes contained in the *Sunday Times* article about Susan Greenfield and her Vivienne Westwood jacket already quoted above: ‘Greenfield may be Britain’s leading authority on the brain, but it is her physique that turns heads’, comments the journalist, adding that ‘Greenfield’s bitchier colleagues suggest that the reason she looks more like an advertising executive than a don is because she is one and the brand she is promoting is herself’ (*Sunday Times*, February 26, Bowditch, 2006). A similar theme is pursued by another journalist who writes that Greenfield is ‘wearing tight jeans, a tight stripy pink T-shirt, and matching pink lipstick.’, adding, as an aside in brackets: ‘We must mention the makeover; in 2002 she was still in pearls and ash-blonde layered haircuts. But, unaccessorised, a sparkling intellect does not get you on to the pages of *Vogue*.’ (*The Times*, November 8, Marsh, 2007).

Scientists who are seen to ‘court’ a high public profile (perhaps especially those who attract attention in magazines aimed at women) are particularly vulnerable to such criticism. The label ‘celebrity scientists’ is a potentially discrediting one. There is a thin line between promoting science and being accused of ‘self-promotion’, between making science ‘accessible’ and being accused of ‘downgrading’ it, and between conveying enthusiasm about science and (if you are a woman) being dismissed as ‘girlish’ or ‘flirtatious’ (See Boyce and Kitzinger, 2008 for further discussion of this point).

The prominence of women in science communication fields could be double-edged here. This is because scientists who are labelled as so-called ‘media whores’ may lose credibility with their professional peers – and this might be even more discrediting for women than for their male counterparts. It is not accident that the term ‘media-whore’ is itself a feminised epithet. Professor Steve Fuller argues that female intellectuals in the public domain can have their intelligence devalued by popular engagement, whereas men, by comparison, ‘don’t get hurt by being around a lot’ (quoted in Barton, 2004, 6). As one commentator has observed: ‘It seems that even in the intellectual world there are slags and there are studs’ (*Guardian*, July 2, Barton, 2004).^{xvi}

Both Kathy Sykes and Susan Greenfield were sometimes explicitly discussed in terms of their sexual attractiveness to men. Each was independently described

as 'putting the sex into science' - a phrase used about Professor Sykes in the *Express*, February 1, 2006 and about Baroness Greenfield in the *Daily Mail* 18 July 2000. Greenfield was even framed in a sort of intergenerational way as sex object by, rather bizarrely, being described in the headline as 'daughter of a chorus girl' (*Daily Mail*, July 18, Kelly, 2000).

“HOW THE DAUGHTER OF A CHORUS GIRL IS PUTTING SEX INTO SCIENCE” (Daily Mail, July 18, 2000)

Descriptions also dwelt on particular gestures, dress or behaviours which were framed as flirtatious or provocative. Baroness Greenfield, for example, according to one journalist, 'flicks her blonde tresses in a manner that must make kneecaps quiver among livelier male peers in the House of Lords' (*The Times*, October 21, Naish, 2006). According to another: 'her tight black pelmet of a skirt barely covers slim thighs encased in black tights' (*The Times*, February 25, Taylor, 2000) and a third journalist reports that Greenfield 'works the room' at a function in 'dominatrix heels' (*The Times*, November 8, Marsh, 2007).

Professor Kathy Sykes is subject to similar sexualised descriptions. She was reportedly acclaimed by the BBC as 'the new thinking man's crumpet' (*Western Mail*, February 3, Watson, 2006) and is described in terms such as a 'blonde bombshell' (*Express*, February 1, Roche, 2006).^{xvii} One review of her appearance as presenter on 'Alternative Medicine' (BBC2) seemed more reminiscent of 'Baywatch' than a report of a science programme. Under the headline 'Quacks given the bird', Sykes's programme was reviewed as follows.

“She is babe scientist Professor Kathy Sykes of Bristol University in charge of Public Engagement in Science and Engineering. The tousle-haired blonde engaged with her public by giving dissertations while running along a beach in a damp vest and dinky shorts. The camera lingered over her big eyes and grin. Quack science? There must be many of the show's three million viewers who did not notice any science, just the engagement” (Sunday Mercury, April 2, Tyndale, 2006).^{xviii}

“The tousle-haired blonde engaged with her public by giving dissertations while running along a beach in a damp vest and dinky shorts”

Such sexualisation is, of course, not unique to women working in SET. Those in nursing, for example, face similar problems: from the image of the staff nurse in suspenders to the sexual fantasies that revolve around the matron. The ways in which women are subjected to a pornographic gaze is refracted through ideas about their particular profession (e.g. whether it is a 'male' or 'female' job) and

ideas about power. (The reference to Greenfield wearing ‘dominatrix heels’, above, is part of this discourse).

5.2 A view from scientists in the public eye

In order to contextualise our analysis of how scientists were profiled in the media we asked the scientists we interviewed what they thought about the ways in which the press profiled women in SET. We also decided to try to interview some prominent women at the receiving end of such publicity. Our method for this is described in Report 1.

Note: Our final set of interviewees included high profile women such as Baroness Susan Greenfield. She, along with some of the other interviewees, was happy to be quoted by name. However, not all the prominent women we spoke to necessarily wanted to be identified. We have therefore presented most quotes as anonymous – and have chosen not to assign ID numbers to quotes in order to avoid ‘jigsaw’ identification with other quotes presented in other reports about our research.

The following issues emerged from our interviews with scientists describing their experience of media coverage.

- Concern about being framed as a ‘female scientist’ rather than just a scientist;
- Being interpreted as ‘flirtatious’ or using feminine wiles when seeking to engage people with science;
- Inappropriate focus on personal life;
- A focus on appearance.

Several of the senior women we interviewed were critical of the media coverage they received. Some expressed frustration with the tendency to frame them as specifically *female* scientists. One explained that whenever she made a public statement it was presented as: ‘*female* scientist says x, y and z’. As she commented, ‘you never hear of Robert Winston [a comparably prominent scientist in the UK] being called a *male* scientist or *male* doctor, so why should the fact that I am a female make any difference whatsoever?’ Similar views were expressed by other scientists in diverse areas of SET.

“I would prefer to look at it from a point of view of being a scientist and gender not coming into it at all. A female astronomer [...] when she was interviewed by the media about ‘what it feels like to be a female astronomer’ [...] apparently turned round and answered along the lines of ‘one day being a female astronomer isn’t going to be news anymore’. And that is pretty much how I feel.”

“One day being a female astronomer isn’t going to be news anymore”

A second issue raised by the women we interviewed concerned a tendency of journalists to introduce questions about their personal lives. As one explained: ‘You often find that you agree to do an interview and then end up fielding questions about your personal life that you didn’t bargain for.’ One senior scientist was taken aback when a journalist asked whether she had a boyfriend – a question she found entirely inappropriate in the context of being interviewed about her scientific work. Another found her relationship with a supposed boyfriend highlighted in a magazine profile. She was particularly surprised by this as, in fact, she did not have a boyfriend, she was living with her female partner.

The most recurrent criticism of how the media framed female scientists, however, concerned the focus on appearance. Women’s experience of being subject to media attention mirrored the findings from our textual analysis – highlighting the asymmetrical media focus on women’s clothing and self-presentation. As one prominent woman commented:

“I don’t ever see anyone commenting on how Robert Winston dresses. [...] it is just something that he doesn’t have to live with, but I do. [...] I know I wear mini skirts from time to time but that is not that noteworthy, it’s not that special. It’s not as if I wore bikinis or went topless. That would be noteworthy!”

“I know I wear mini skirts from time to time but that is not that noteworthy ... It’s not as if I wore bikinis or went topless. That would be noteworthy!”

In her view, this emphasis on her fashionable clothing implicitly suggested that female scientists were usually, or *should* be, rather disinterested in fashion.

“I do find it a little odd that so much should be made of the fact that I wear make-up and wear short skirts, you know? Because the implication is that female scientists shouldn’t care what they look like, and it is thought that I am unusual in that I care about what I look like”.

However, at least, she added, the media focus on her interest in fashion: ‘shows that you are a normal woman’. Another interviewee, however, was more ambivalent, She did not necessarily see such media images as portraying ‘normal’ women and was, herself, ‘not terribly feminine, I mean, I dress nicely and all that, but [...] I’m more likely to be found building a dry stone wall in the roughest old jeans.’ Asked whether it was good to have her profession represented by more traditionally ‘glam’ women, she commented:

“While I might have a deep-rooted hatred for these beautiful pseudo-people, at the same time I can see that it may be useful for us because we have such a difficulty with our image on TV and in the media.”

There are then, ambivalent and contrasting views, about the image of the glamorous female scientist. On the one hand, many of those working with young people are concerned to challenge a view that girls who pursue subjects such as math, physics and engineering are 'geeks'. On the other hand, promoting the idea that everyone has to be brilliant *and* 'gorgeous' can be seen as unhelpful too (for further discussion of this issue see Kitzinger et al., 2008).

Alongside the above issues, we would also note that a focus on appearance was sometimes seen to *get in the way* of communication. Professor Kathy Sykes has raised this issue commenting: 'I would rather people to be listening to what I say rather than thinking I'm crumpet.' (quoted in *Western Mail*, Feb 3, Watson 2006). This point was echoed by one of our interviewees who commented:

"I think they do waste a lot of [time] talking about the colour of my lipstick etc, which really isn't relevant when you are trying to talk about one's work and be taken seriously."

"I think they do waste a lot of [time] talking about the colour of my lipstick."

The attention to the female scientists 'femaleness' was experienced as sometimes denying, or twisting, attempts to come across as 'human'. Professor Sykes has made this point to journalists, arguing that she has been 'misread': Instead of the 'sexy face of science', she is aiming, she says, 'to be a scientist with humanity'(quoted in *Express*, Feb 1, Roche 2006). However, regardless of their intentions, some female scientists find that their behaviour may be interpreted as provocative. A 'human' approach from a female scientist is equated with a 'feminine' approach – and this is often also seen to involve an element of 'feminine wiles' or flirtatiousness.

A related point raised by some women with media experience, was the tendency for the media to pressurise women to behave in particularly ways that highlighted their femininity. This could range from requests from press photographers to adopt particular poses to a tendency for TV producers to encourage female presenters to pay attention to their clothing. One eminent professor, for example, was asked to pop up onto a work bench and cross her legs for a photo shoot - a pose she suspects would not have been requested of a man:

"The press guy came to come and take photographs of me in work, and he said, "could you just pop up on the bench and cross your legs and sit like this"! "No I can't!" Nobody would sit on a work bench. And things like, you know, "can you just lean across the car a bit?"

Another group of (female) scientists were invited to appear on a children's science programme – but discovered they were expected to appear wearing bikinis (for a scene the apparently required demonstrating some science in a shower). They pulled out of contributing to this programme. Another woman gave up her job on a science TV show because of the sort of pressure placed upon her:

“I really loved the science of it, I really loved the teaching and all that kind of stuff. But I really hated being on screen and sort of the forces of it and the pressure and all the make-up and that kind of imagey stuff, I found very difficult. So I left.”

Women may thus both opt out of or be rejected from appearing on television because of the sexism that surrounds them. Even without explicit sexualisation, women presenting science programmes find they may be expected to pay attention to dress in a way that would not be demanded of a male presenter. As one scientist commented, reflecting on her own appearances on TV:

“It is fine for [a male presenter] to wear the same pair of trousers about nine times in the series, but there is a lot of pressure on female presenters to wear something different every single time [...] so that I found very difficult.”

When she had presented SET on children's television, her casual, 'tomboy' look was relatively tolerated. However, opportunities to move into presenting adult science programmes were limited. She suspects this is, partly, because she does not project an image compatible with the 'thinking man's crumpet'. Commenting on some of the women scientists with particularly high media profiles she comments:

“I have absolutely no doubt that those people are actually talented and interesting and enthusiastic and work very hard [...] However, I wonder whether there is a whole bunch of people who probably are just as good communicators but aren't as palatable for the general public because they don't look the right way. I think if I was more of your conventional TV presenter I think I would have had a lot more opportunities open to me.”

This is, of course, not a problem confined to *scientists* – television as a medium increasingly privileges good looks and 'good grooming' in promoting presenters, especially female presenters. When we asked one (former) media worker for comments on this report she responded with the following observation:

“Women in journalism – particularly in the broadcast sector – also face similar dilemmas over their representation. Women of my generation shunned any consideration of appearance, dress etc and fought to be treated in the same

way as men and to be offered equal opportunity at work. Being 'girly' was anathema for me [...]. However, times have changed. Particularly in broadcast, the focus on audience response has increased demand for 'good-looking' presenters. There are some presentation pressures for men too these days but these are much more considerable for female presenters, not just female science presenters."

5.3 The significance of appearance for women at work

The way in which prominent women scientists are profiled in the media (and the way in which female science presenters are encouraged to cultivate their image) enters a complex multi-media and work environment in which aspiring and practicing scientists are confronted with an array of competing (and sometimes apparently contradictory) images.

On the one hand our interviewees commented that female scientists were presented, in some parts of the media, as unfeminine 'unattractive individuals with thick black glasses, with no dress sense' (SQ10 – Information Technology) or 'terribly business-like almost as if to succeed in physics you have to play by the men's rules' (Interviewee 3 - Physics).^{xix} On the other hand, the media can frame women scientists as ultra-feminine. Professor Greenfield has become a 'poster girl' for glamorous science in the UK and similarly glamorous female scientists often feature in TV fiction and films (for further discussion see Report 1).

Some women felt very strongly that it was important that women in SET be allowed to be feminine, wear make-up or enjoy dressing-up. One woman for example, who had been a fashion model before becoming a computer programmer, commented:

"I always wanted women to know that you can be feminine if you wanted to be feminine, [...] And I think that in the 90s there [was the] real masculinising of powerful women in SET. And I think I would like to see good women who are bright, women who are in scientific or engineering fields, are still women." (Interviewee 2 – Computer Science)

By contrast other interviewees were more ambivalent. As one commented:

"I am kind of against glamour on TV in general, because people aren't like that, well most people aren't like that." (Interviewee 18 – Computers)

The problem is, perhaps, not whether women in SET are stereotyped as 'ugly' or 'beautiful', 'masculine' or 'feminine' – but that they should be measured against such criteria at all.

The media's focus on appearance echoes the critical scrutiny many women experience in the work place. The media's focus may thus both reflect, and

help to contribute to, a situation in which women in SET are often faced with pressure around clothing. Our research participants often felt they had to face choices about how to 'fit in' or 'stand out' in a male dominated work place, how to resist stereotypes, and how to present themselves in ways which would maximise the chances of being 'taken seriously' in SET (in spite of being female). Some women in SET felt they had to dress in a 'masculine way'. One, for example, routinely wears trouser suits 'similar to guys that I work with [...] sort of fit in with people around me' (Interviewee 9 – Civil Engineering). Another avoids bright colours because she does not want to 'stand out like a sore thumb, [...] when everybody is in black suits' (Interviewee15 - Construction).

Some of our interviewees experienced the dilemma about how to dress as a catch 22 situation. As one trainee in engineering commented:

I think it is like really hard to gauge you know, you don't want to look bad but at the same time you wouldn't like to look tarty or anything because then people will think you are not a good scientist. But at the same time you don't want to look scruffy. (FG5: PT3 – Civil and Environmental Engineering)

“you wouldn't like to look tarty or anything because then people will think you are not a good scientist. But at the same time you don't want to look scruffy.”

The above discussion has focussed on the question of appearance because this emerged as a significant difference in how male and female scientists are profiled in the press – and was discussed at length by some of our research participants. However, it should be noted that other research participants did not wish to dwell on the issue, or dismissed it as a simple question of professionalism. Several senior women we interviewed did not want to 'make a big thing' about image management. When presented with examples of how some scientists had been described in the media, they acknowledged the problem, but felt it should not be a major cause for concern. 'It's appalling isn't it', one acknowledged, 'you can't win with either way'. However, she added:

We might not like it, but isn't that just nature? Isn't that what men and women are about, and I don't think we can necessarily change that. [...] Yes, there is a bias that way. But it is nature. Moaning about it isn't going to change things.

5.4 Conclusion

The ways in which men and women are described in newspaper profiles of scientists places disproportionate and asymmetrical emphasis on women's appearance. Our main findings from this chapter are as follows.

- Journalists will comment on female scientists' appearance more often than they comment on the appearance of male scientists.

- The ways in which journalists describe female and male scientists' appearance are also quite different: descriptions of women's appearance may be quite elaborate and detailed, they sometimes explicitly address issues of 'femininity' and the representations may be sexualised. By contrast, descriptions of men are brief, not marked as 'gendered', and not sexualised.
- Descriptions of male scientists often implicitly reference classic stereotypes around the type of person (male) who might work in SET. Men are described in relation to the bearded egg-head, the t-shirt wearing computer whiz-kid or the gauche, geeky teenager who goes on to make millions. Such references seem to confirm, rather than question, men's status as bona fide scientists or technological innovators.
- Descriptions of women appearance can have the *opposite* implications: women who can be positioned as *conforming* to traditional stereotypes such as 'the geek' are sometimes implicitly presented as unfeminine. Alternatively, if they are 'blonde' and 'glamorous' they are implicitly positioned as potentially 'unscientific'. An implicit contradiction is drawn between the stereotype of 'airheads' and 'eggheads'; 'bimbos' and 'boffins'.
- Our findings suggest some social changes have taken place in how women in SET are represented. Comparing our findings to earlier work suggests that prominent women in SET may no longer be judged for the quality of their baking or their skill with the needles (as they were sometimes in the 1920s to 1980s) (see page 3). Instead, they may now be judged on the basis of their beauty, fashionableness or sexiness.
- Some journalists appear to be attempting (however clumsily) to use references to appearance to recognise, but also to challenge stereotypes about women (e.g. as in she may be blonde, but she is *also* a rocket scientist). Journalists describing women scientists may also use their failure to conform to the dominant image of the typical scientist as a *challenge* to stereotypes about science/scientists (e.g. in the framing of some high profile women as accessible and good science communicators).
- Promoting women scientists to popularise science can be double-edged however. This is not least because popularising science can be seen as incompatible with high-level scientific accuracy, due scientific process and high prestige.
- Our interviews with high-profile scientists reveal some of the ways in which journalists frame women scientists in highly problematic ways and how the media industry may constrain the range of available images of women in SET.
- Our interviews with women in SET also highlight the impact scrutiny of appearance can have on some women in the sector, while also highlighting some of the contradiction and diversity of opinion among scientists themselves about what counts as a 'positive' or 'normal' representation, and indeed, what is worth trying to change.

Chapter 6: Recommendations

Our research has highlighted how women in SET are represented in the UK press as a minority (as experts quoted) and sometimes as 'different' if not 'deviant' from the traditional (male) scientist. Not only are female scientists positioned as unusual, there are also clear differences in the extent, and nature, of the attention given to male and female scientists' appearance. In 1989 Donna Haraway observed that to be known as a woman and as scientist is 'an oxymoronic social subject only beginning to break down' (Haraway 1989: 281). This point was echoed by Van Dijck (in the nineteen nineties) who argued that: 'By virtue of their ascribed feminine characteristics, women hardly fit the category of 'scientist' at all' (Van Dijck 1998: 24). Almost a decade on there still seems to be, in some people's minds, an implicit contradiction between being female and being a scientist. The mass press coverage can both reflect and perpetuate this. The lack of prominence of female experts in SET (when quoted in news reports) and the sexist way in which some female scientists are profiled may be discouraging for girls/women seeking to develop careers in SET and can contribute to the dilemmas facing women working in male-dominated fields.

In order to promote a higher and more positive profile for women in SET, and to address some of the problematic ways in which women in SET are represented when they *do* appear in the press, we would make the following recommendations.

6.1 Recommendations for those promoting positive representation

Those seeking to promote profiles of women scientists might be able to use the information provided in this report as a useful basis from which to consider how to encourage a higher profile for women in SET. This strategy could be the following.

- Encourage journalists to reflect on their own practices and editors to reflect on their editorial guidelines about sexist language (see below).
- Provide resources for journalists to encourage them to quote more women in SET - e.g. via The Get SET Women database or by ensuring that the database used by the major SET organisations include more women.

Provide resources to encourage journalists to quote more female experts

- Develop initiatives to support journalists in developing links with female scientists – this could include placements where journalists are able to shadow scientists or vice versa.

- Input into the training of journalists to encourage them to develop a more egalitarian approach to reporting SET. This could include, for example, briefing Schools of Journalism (providing training resources) or setting up a competition for young or trainee journalists. The latter initiative could include, for example, establishing an award (with co-sponsorship from leading SET bodies) for the best profile of a scientist which presented a vivid picture of the scientist, and insights into the science, without being sexist.

Develop initiatives to support journalists in developing links with female scientists

- Provide journalists with a range of interesting women to profile at different stages of their career and in diverse areas of SET.

Promote a range of interesting women for the media to profile, including women at different career stages

- Caution is needed here, however as ‘showcasing’ women as women scientists foregrounds gender and highlights women as ‘exceptional’. As one former newspaper editor commented to us: ‘More attention is paid to the appearance of women in just about every field so a degree of difference is set to persist. However this is accentuated if the female scientists are “pitched” to journalists on the basis of gender. Gender is almost bound to be more of an issue.’

Target certain newspapers to promote more profiles of women in SET

- Given the difference revealed by our research, it may be most productive to work with certain newspapers and target certain section of newspapers to promote more profiles of women in SET. This could include supporting those which already display a predisposition toward profiling women as well as men in SET. An alternative, but less likely to succeed strategy would be to target those newspapers which exclusively profiled male scientists during our sample period.

Work with journalist and editors to confront the sexism that informs some profiles of scientists

- Work with journalist, editors and with high profile women to confront the sexism that informs some profiles.

Form alliances with female journalists and senior figures within the media industry

- Form alliances and networks with women journalists and senior figures within the media industry. Women working in the media face many of the same problems as women working in SET. Speaking about this report to journalists we have had some interesting responses. One woman wrote to us after reading the draft report: ‘The comments from your scientists are very evocative for me on how I handled my profile as the first woman editor of various newspapers. One urge was to celebrate the landmark on gender role model lines but really I wanted to be recognised as a good editor, not a good woman editor.’ She added: ‘I would stress the parallels between the patterns you identify in the treatment of female scientists with the patterns which persist within journalism. Women are still under-represented within the higher echelons of newspapers. They too gravitate, for a host of personal/external reasons, towards the ‘soft’ areas such as health, lifestyle and features generally rather than news.’

Support female scientists in developing their willingness to talk to the media

- Support female scientists in developing their public profile and willingness to talk to the media. (See Report 4, for full discussion of how this might be achieved)
- Work with the leading SET bodies to encourage those involved in science PR to address this issue in their work. This could include encouraging science bodies to put forward more women as experts for high-profile panels and key note speeches and as experts quoted in press releases. (This point is expanded upon in Report 4.)

Work with the leading SET bodies to encourage those involved in science PR to address this issue in their work

6.2 Recommendations for journalists

Journalists are bombarded with suggestions about how they should do their job – and are, often quite rightly, suspicious of attempts to tell them how they should report. Any ‘guidelines’ for journalists have to take into account the conditions under which journalists work, the constraints (e.g. deadlines) and news values and practices of the profession as well as journalists’ skills and experience. However, if journalists want to avoid reinforcing gender stereotypes and inequality we think they could usefully reflect on how they select the scientists they interview and how they represent them.

Source selection:

- Journalists could usefully reflect on the extent to which they rely on male as opposed to female sources for expert comment on science stories. We are not suggesting that journalists at present discriminate against quoting women. The figures suggest that the press are partly simply reflecting the gender segregation within SET itself and the predominance of men in the most influential positions. However, the question is whether it might be possible to take positive action to increase women's profile and to reflect a more interesting range of people working in SET.
- Journalists (and TV producers) could usefully reflect on *when* they actively pursue female scientists for comment (e.g. wanting a woman rather than a man to comment on science and sexuality or science and a children's issue).
- The fact that male journalists seem to privilege male scientists to a greater extent than their female counterparts suggests that journalists themselves have a role to play here. The difference related to the gender of the journalist, in part, however, reflects the way in which both female journalists, and female scientists, are more likely to be working in areas such as health or 'softer' more 'human interest' fields of research/writing.
- The fact that the 'quality' press seem to privilege male scientists to a greater extent than their mid-market or 'tabloid' counterparts suggests that the values of the newspaper, and the type of SET stories they cover, may also be a significant factor. Again this may relate to the predominance of 'hard science' stories in some papers, versus a preference for 'human interest' science in other papers.

Choosing scientists to profile:

- Journalists and newspaper editors could usefully reflect on *who* they chose to profile in the press – how many men, how many women, and the type of SET areas in which these scientists work. In particular, there may be opportunities to develop interesting profiles of women scientists working in a more *diverse* set of areas of SET. There may also be opportunities for profiles of scientist (from diverse backgrounds). Our research with young scientists suggests that profiling those who are not at the 'top of their profession may still interest some readers.

Journalists could usefully reflect on which scientists they choose to ask for expert comment or to profile through in-depth interviews

Reflecting on writing style:

- Journalists could usefully reflect on *how* they profile prominent men and women – and when and why they consider it relevant to mention certain aspects (e.g. personal relationships) and what they choose to write about a scientist's appearance. This could include reflecting on how a comment on a scientist's figure, hairstyle or clothing might differ if the expert in question

were male and considering the language used about male and female scientists and the way these reflect and reinforce stereotype (e.g. 'sexy', 'flirtatious' etc). In this context it is worth noting that as long ago as 1970 Ben Bradlee, editor of the Washington Post, sent a memo to all staff advising that words such as 'grandmother' or 'blonde' should be avoided where corresponding words would not be used if a man were involved. His memo continued: 'Words like "vivacious", "pert", "dimpled" or cute" have long since become clichés, and are droppable on that count alone without hampering our efforts to get good descriptions into the paper ...Stories involving the achievement of women...should be written without a trace of condescension' (quoted in Graham, 1997, 424). More than 35 years later such advice would still be applicable. Although terms such as 'dimpled' have gone out of fashion for adult women – prominent female scientists are still being described in terminology which seems to present them as almost child-like: petite, diminutive and impish.

Journalists could usefully reflect on why they consider it relevant to mention certain aspects of a scientist's life (e.g. personal relationships) and what they choose to write about a male or female scientist's appearance

Finally, although this study was focussed on print journalists, some data relevant to television also emerged.

- In particular we would note the pressure placed on some female scientists fronting programmes to present themselves in particular ways. Producers of TV programmes could consider ways of being open to a more diverse range of female presenters.
- They could also consider the *type* of female scientist sought to contribute to diverse programmes (e.g. If programmes foreground *mature* male scientists, but *young* female scientists, what message does this convey to audiences?)
- Photographers and camera-operators should reflect on the poses they encourage or camera angles they adopt for male and female subjects – and the assumptions this reflects and perpetuates.

If programmes foreground mature male scientists, but young female scientists, what message does this convey to audiences?

Further information:

Three other reports were produced as part of this research:

Report 1 (Kitzinger et al., 2008) examines the views and experiences of 86 women working or training in SET. It explores their own experiences of the media while they were growing up, and their views about the media representation of women in SET today.

Report 3 (Haran et al., 2008) presents an analysis of how female scientists are presented in films and on television (including TV drama, documentaries and docudrama).

Report 4 (Boyce and Kitzinger, 2008) examines what science communications/P.R. professionals might be able to do to promote more positive representation of women in SET. It includes discussion of how to support women talking to the media.

These reports are available online at www.ukrc4setwomen.org or hard copies can be obtained from the UKRC: info@ukrc4setwomen.org

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Endnotes

ⁱ Inspiration can, however, also sometimes be found in unexpected places. Media studies research highlights how sometimes people can take pleasure from, or identify with, unexpected characters. For example, one study showed that some Native American fans of 'Westerns' could identify with the John Wayne character in the film (the Indian-killing cowboy) seeing him as a representation of Native American ideals of being free and in touch with the land (see Eldridge et al., 1997, 150-151). Similarly, another study found that young British Asians enjoyed the (exclusively white) Australian soap opera 'Neighbours' because it offered 'a complex metaphor for their own social worlds (See Shively, 1992 and Gillespie, 1995 discussed in Eldridge et al., 1997: 150-152). Offering strong and positive role models of female scientists might be complemented by broader strategies which show science, engineering and technology as attractive to women in other ways. This is discussed in Report 1, Kitzinger et al., 2008, section 5.3.

ⁱⁱ The 644 quotes appeared in 441 articles. If the same scientist was quoted twice we simply counted this as one incident of 'quoting a scientist'. Throughout this report the figures refer to the number of quotations from expert scientists, not the number of articles.

ⁱⁱⁱ We were interested in whether press reporting provided a different platform than other media. We therefore also examined all the stories about six key areas of SET that appeared on the Radio 4's 'Today' programme (n=38) and a sample of national TV news bulletins (n=21) broadcast during the first six months of 2006. Twenty one of the radio pieces and 15 of the TV news bulletins introduced experts in SET to comment on their news reports. Male scientists were quoted 13 times in television pieces, and females only twice, and men were used as expert scientific commentators 16 times on the radio whilst women were used five times. Thus, television news packages were more than six times as likely to invite male experts as females. However, the ratio of male and female experts on the radio is about 3:1. Given the small numbers involved these figures are indicative of potential trends, rather than significant findings in their own right.

^{iv} The Pearson Chi-Square test should not be used to assert a causal relationship between variables, but instead to ascertain the likelihood that a result has been obtained by chance. The fact that female reporters quote female scientists more often than male reporters in our sample, for example, could be the result of a number of causal factors. It could be that female reporters are likely to report on science stories that are more attractive to women (as commentators and as audiences), which are in turn likely to come from fields where a high proportion of female scientific experts work (e.g. reproductive health, breast cancer research etc).

^v There are also differences between the sources used to comment on articles about computers and those about interconnectivity. The majority of female practitioners quoted in stories about interconnectivity were university scientists, and several were female. However, stories in our “computers” category were more likely to come from male scientists working in the private sector.

^{vi} The ‘broadsheet’/‘quality’ newspapers cite far more scientists than the tabloids – and therefore cite more women scientists. However, proportionately women are given much more of a voice in the tabloids than the “quality” press. For example, 26% of SET stories in the *Daily Mail* quote female scientists, compared with 15% in the *Guardian* and 12% in *The Times*. There was no significant difference between the prominence given to women in the Sunday press over the ‘daily’ press.

^{vii} In addition to collating data on these areas we also coded stories for information regarding career breaks, disability, and ethnic identity. However, we found no significant references to these fields in this data which introduced scientists simply for expert comment.

^{viii} The most allusions to a single group of scientists’ non-professional identity were made about astronauts. In June 2006 there was a high concentration of media coverage of Nasa’s Discovery space mission and the presence on the crew of British Astronaut Piers Sellers. Readers of the *Guardian* and *The Times* as well as *The Daily Mail* and the *Mirror* were not only routinely told about Sellers’ nationality, but also his marital and parenthood status and his age.

^{ix} We also note that five out of the eight profiles of female scientists were written by freelance journalists.

^x Nationality was mentioned in almost one third. (This sometimes reflected a celebration of ‘British Science’ and sometimes the fact that several of those profiled were born outside the UK.) The different type of inflection given to references to a scientist’s nationality can be illustrated by quotes such as: ‘This British scientist had an instrumental, but until recently unacknowledged, role in discovering the structure of our DNA’ (*The Times*, April 1, 2006) and ‘Before he became a baby-maker, the Egyptian-born doctor was a surgeon’ (*Sun*, June 1, 2006). We coded ‘ethnic identity’ as a separate category, but this was only mentioned once in the entire sample.

^{xi} Parenthood seemed equally likely to be mentioned regardless of gender. This may be partly because of the standard types of pro-forma adopted in some newspaper profiles. Many of these pro-formas incorporate mention of marital status and children as standard. The *Daily Mail* for example followed profiles with a ‘FACT FILE’ e.g. ‘British energy chief executive: Bill Coley, 62; Education: Georgia Institute of Technology/ Family: Married to June, 61, with a son and

daughter, 35 and 30' (*Daily Mail*, February 9, 2006). Similar formats were followed in other papers such as the *Telegraph*. Such framing of scientists, of course, has some positive aspects (for those concerned to highlight that scientists have families as well as work lives). However, conventional formats, focusing on 'marital status' for example also have some problematic aspect.

^{xii} We came across several examples where women are described as petite in some way and/or looking younger than their age, but no case where men were described in this way. For example, one scientist, Esther Dyson is described as smiling 'impishly'. The reporter goes on to justify the suitability of the word, 'Imp', as quite an apt word, as 'she is diminutive and looks younger than her 52 years' (*Guardian*, January 31, 2004).

^{xiii} It is also interesting to note to whom male and female scientists are compared. Greenfield is described as 'Smiling, bouncy and accessible, like an Esther Rantzen of science' (*Daily Mail* July 18, Kelly, 2000) and as 'Erosiences' answer to Emma Peel' (Independent, August 12, 2000 'How do I look? Lab-Fab – Susan Greenfield [...] Euroscience's answer to Emma Peel). When she launched her six-part science series on BBC2 one journalist noted: 'You can almost hear the tabloid tags: television's sexy boffin, the Charlie Dimmock of the laboratory' (*The Times*, February 25, Taylor, 2000). By contrast when men working in SET are compared to other people, quite different analogies are drawn. The examples we could find included descriptions such as 'he's been dubbed the Steven Spielberg of video games' (*Observer*, March 19, 2006); he has a 'greying mullet, which looks like something you might find on a status quo roadie' (*Guardian*, January 24, 2006) and The fact that he looks like a junior version of spiritual mentors who train the heroes of martial arts movies probably helps too'. (*The Times*, February 25, 2006)

^{xiv} This can be a complex issue, as such images were not necessarily discouraging to every female scientist (see Report 1).

^{xv} This image of a scientist is also seen as a positive role model for girls in particular. As Professor John Stein comments of Greenfield: 'by being not only good-looking and obviously trendy, she provides an excellent role model, contrary to what some traditionalists think. It's much more effective to get through to young people by showing that you don't have to be a boring, ugly, badly dressed scientist in order to do interesting things in neuroscience. (Stein quoted in *Guardian*, September 24, 2005)

^{xvi} This dynamic is cross-cut by the fact that women in research teams may be more likely to come from clinical backgrounds compared to their male colleagues. They may, therefore, be more familiar with techniques for communicating the science in accessible ways (e.g. explaining the implications of genetic testing to patients). This in turn, may lead to them taking the role of spokesperson for the research in some settings as they are seen as skilled communicators able to present the 'human face' of scientific research. In some ways this can be regarded

as encouraging, as it increases the visibility of women in science. However, there are drawbacks to labelling women as the ‘communicators’ and men as the ‘researchers’. As one leading female scientist commented, she was often given the role of fronting the work, but her peers, seeing her performances in the media, might not necessarily ‘count’ her as a ‘real’ scientist.

^{xvii} Similarly Carol Voderman was reported as having ‘come sixth in Sky TV survey of men’s sexual fantasies’. This sexualisation of female scientists in the public eyes does not seem to apply to high profile male scientists. We also noted the sexualisation of women involved in science policy. Suzi Leather, then Head of Human Fertilisation and Embryology Authority, was introduced as the ‘deliciously named’ Suzi Leather. (*Sunday Times*, January 22, 2006)

^{xviii} Such salacious descriptions seem confined to male journalists. However, it was not exclusively male journalists who focused on women’s appearance – and some of the most clothing-focussed pieces were actually written by female journalists. For example, references to Susan Greenfield’s ‘Gucci belt’ came from a female journalist as did the reports which identified the brand of her lipstick and that her twin-set came from Gap (*The Times*, February 25, 2000) or from Whistles (*Daily Mail*, July 18, 2000). This may be something which can be pursued in further research.

^{xix} The code ‘SQ’ indicates data from a questionnaire, as opposed to interviews or focus groups. We provide ID numbers in this section to distinguish different speakers.

Appendix 1: Coding Sheet

1. **Newspaper:**.....

2. **Date:**.....

3. **Headline:**

4. **Section/Page in which story appears:**.....

5. **Journalist Name:**

Journalist Gender: Male/Female/unspecified

Journalist Specialism: General/science/health/education/ Technology/
media/unknown/ Other specify

6. **Number of words:** Less than 100/100-500/500-1000/1000-1500/over 1500

7. **Area of SET**

8. **Job title of profiled scientist:**.....

9. **Gender of scientist** Male/Female/Not specified

Characteristics of scientist	10. Age	11. Ethnic Identity	12. National origin/ Nationality	13. Parent-hood	14. Disability
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Not mentioned

Alluded to in some way

Mentioned explicitly

15. **Marital/relationship status:** Mar/coupled/Single/Other, alluded to in some way/Unspecified

16. **Appearance of Scientists**

Gen. physical appearance: Yes/No; Clothing mentioned: Yes/No;
Spectacles: Yes/No; Head hair mentioned: Yes/No; Chin hair mentioned:
Yes/No; Other specify:

16. **Any mention of career breaks**

Yes/no