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Promoting Women in the Media: The Role of SET Organisations and their Science Media Communicators

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About the UK Resource Centre for Women in SET

Established in 2004 and funded by DIUS, to support the Government's ten-year strategy for Science and Innovation, the UKRC works to improve the participation and position of women in SET across industry, academia and public services in the UK. The UKRC provides advice and consultancy on gender equality to employers in industry and academia, professional institutes, education and Research Councils. The UKRC also helps women entering into and progressing within SET careers, through advice and support at all career stages, training, mentoring and networking opportunities.

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Executive summary

This research was commissioned by the UK Resource Centre for Women in Science, Engineering and Technology (UKRC). It examined the views/experiences of science media communication specialists who have a key gate-keeping role in the representation of SET. Our findings show the following:

- Science media communicators select scientists to speak to the media according to their availability and possession of the appropriate expertise. They usually regarded the *gender* of scientists as irrelevant unless certain subjects were under discussion such as gender, sexuality, or promoting careers in SET to young people.
- Most press officers do not, at present, see themselves as having a remit to promote women in SET. Their own focus tended to be on the general representation of their area of SET.
- They blame the relative invisibility of female scientists in the media on gender segregation within SET and women's failure to come forward to engage with the media.
- Science media communicators do *not* see journalists as responsible for the higher media profile given to men in SET. However our interviews highlighted the fact that the media may encourage their own form of gender segregation through preferring female scientists for particular types of story (e.g. obesity, cosmetics or children) or certain types of programme (e.g. breakfast TV).
- Our research also highlighted the extent to which science communication is an attractive field for women scientists as an alternative to 'bench work' (partly because it can be a relatively flexible profession). The science communication field thus includes a high proportion of women who are well aware of the challenges facing women in SET. However, at present, it does not seem as if their awareness of, and motivation to address, gender issues are being fully harnessed in their professional roles.
- In order to utilise the motivation of individuals within this profession to address gender segregation/inequality we provide a list of recommendations including that science media communicators receive adequate resources and support from their organisations around this issue and that SET organisations take on promoting women in the media as part of a wider strategy of promoting women in SET.
- We also critically assess the perceived problem of women's 'lack of confidence' in doing media work. We suggest diverse ways to address this issue including increasing women's public speaking opportunities, challenging an 'alpha male' culture within SET, running gender-aware media training days and encouraging institutional support for women in SET from their employers.

Chapter 1: Introduction

This research is part of a series of reports examining issues around the representation of women scientists within the media (see Reports 1, 2, and 3 listed at the end of this report). The studies were all 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. Addressing gender segregation in SET is part of the UK government's ambition to create a highly-skilled diverse workforce supporting business productivity and innovation by maximising the potential of skilled women scientists, engineers, mathematicians, technologists and technician support staff, directly contributing to the delivery of the Ten Year Science and Innovation Framework 2004 -14 (DTI, 2003).

Gender segregation in SET: There are major issues around the training, recruitment, retention, pay 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 at university (Rees, 2001; Roberts, 2002; Murphy and Whitelegg, 2006). For example, women make up only 24% of computer science students, 22% of physics students and 14% of engineering and technology students at undergraduate level (Women and Work Commission, 2006).
- Even after training women are also less likely than men to develop a career in SET, particularly in the most traditionally male-dominated sectors. For example, women comprise around 13% of ICT and 5% of engineering professionals in the UK (UK Resource Centre for Women in SET, 2005 figures; European Commission, 2006, 60).
- Even if women pursue a career in SET they are less likely than men to be promoted to senior positions right across the sector (Women & Work, 2006). For example, women compose fewer than 6% of the most senior grade staff in SET in institutions of Higher Education across Europe (European Commission, 2006).

(See also <http://www.ukrc4setwomen.org/html/research-and-statistics/statistics/>)

The dearth of women scientists at all levels means that girls have few role models with whom to identify, and few female mentors to encourage them.

The role of the media

The mass media may have a crucial role in either reinforcing, or challenging such inequalities. Television, radio, newspapers and film have long been recognised as key players in society: helping to define people's sense of taken-for-granted

normality (see Eldridge et al., 1997). The media can help frame the image of a profession and are also often identified as an important source of 'role models'. Role model theory suggests that representations of women in SET may be important both in showing young people that women can be good at science, engineering and technology and that careers in SET might be desirable options for women. Research shows that 'previous experience with (or information about) a successful woman in a traditional male occupation decreases gender bias in evaluation and selection decisions made by both student and professional judges' (Phillips and Imhoff, 1997: 41; see also Glick et al., 1988; Heilman et al., 1988). The media also 'exert a demonstrable impact on children's occupational knowledge and role identification' (Wroblewski and Huston, 1987: 35; see also Phillips and Imhoff, 1997).

The problem is that although science may be the focus of great expectations (e.g. expected to deliver medical and technological solutions) (Haran et al., 2008); the figure of the scientist can also be the focus of great distrust and anxiety (Frayling, 2005; Haynes, 1994). Not only are scientists often presented in a negative light (e.g. the 'evil' or 'mad' scientist) the media have specifically ignored or misrepresented *female* scientists. (Note: 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 the way in which women scientists have been marginalised or framed through stereotypes about femininity (Shachar, 2000; Haran et al., 2007: 89-91; Nelkin, 1995). Studies of advertising show that the figure of the woman is sometimes used to underline that an item of technology is 'easy to use' or that a scientific claim is 'simple to understand' and that women are less likely than men to be framed as active 'experts' (Barbercheck, 2001; Ware and Stuck, 1985; Marshall and Bannon, 1988; White and Kinnick, 2000; Raphael et al., 2006: 776-77). Even profiles of famous scientists in newspapers and magazines can subtly undermine the status of women in SET. A study in the US by LaFollette (1988), for example, showed that such profiles presented scientific research as requiring certain 'masculine' attributes and women working in the field were portrayed as extraordinary. Historically, an emphasis has also been placed on women scientists' maternal and wifely role (LaFollette, 1988; Nelkin, 1995:19).

Recent evidence in relation to the representation of women scientists in film and TV drama presents a more mixed picture. On the one hand Flicker (2003) charts the role of the female scientist in 20 feature films as: 'old maid', 'male woman', 'naïve expert', 'evil plotter', 'daughter or assistant' and 'lonely heroine'. Other research suggests, however, that film is a space in which more positive images can emerge – with several scholars drawing attention to the female scientist-hero and some overviews highlighting the powerful representation of women as professionals holding key positions (e.g. Steinke, 2005). However, even when women are represented in these positions their interaction with male colleagues may still be portrayed in ways which reinforced traditional assumptions about women in SET (Steinke, 2005; Haran et al., 2008). Perhaps the most positive

assessments of media representation have recently emerged in relation to TV drama such as *'Silent Witness'*, which features a female forensic pathologist. In fact, the high profile of forensic science in the media (including series such as *Silent Witness*) seems to have contributed to an increase in students pursuing this field of study. Eight percent of forensic science undergraduates, and 15% of Masters students state that the media influenced them to pursue forensic science (SEMTA, 2004:16).

The design of our research project:

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.

Our first report (based on data from women training or working in SET) highlighted women's experiences of growing up with an absence of female role models to support their pursuit of their chosen career. (See Kitzinger et al., 2008a). Our interviewees made comments such as: 'I actually felt personally discouraged as a woman to train in SET by media representations'. They often felt that to be good at science meant they were not quite 'normal'. As another commented; 'I think it started at school since doing three A-level sciences, I always felt myself as sort of a "not normal female"'. When they had found role-models (such as an eminent woman from history, or a female presenter on *Tomorrow's World*) this had sometimes been very important to them. Many of our research participants felt it was very important that women in SET be given a higher profile in the mass media today and to be less stereotyped.

In our second and third reports we directly examined how female scientists were represented in newspapers (report 2, Kitzinger et al., 2008b)) and in TV/film (report 3, Haran et al., 2008). Although this research highlighted many interesting and positive representations of women in SET, particularly in TV drama series, it also highlighted women's relative marginalisation in the news reporting of SET and the problematic way in which prominent women scientists were sometimes profiled. We examined a six month sample of UK national press reporting (from 2006). We found that the newspaper reports of SET quote five men for every one woman - which of course, *reflects* women's minority status within SET, but also may help to *perpetuate* it. We also found that the *ways* in which journalists describe female and male scientists' appearance are quite different. Descriptions of women's appearance may be 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's appearance can have the *opposite* implication: women who can be positioned as *conforming* to traditional stereotypes such as 'the geek' are sometimes presented as unfeminine. Alternatively, if they are 'glamorous' they are positioned as potentially unscientific. An implicit contradiction is drawn between 'airheads' and 'eggheads'; 'bimbos' and 'boffins'. Comparing our findings to the earlier work cited above suggests that although prominent women in SET may no longer be judged for the quality of their baking or their needle-work (as they were sometimes in the 1920s to 1980s), they may now be judged on the basis of their beauty, fashionableness or sexiness (see Kitzinger et al., 2008a).

One way in which media representations might be improved is through the activity of science media communication specialists and those providing media training skills to scientists. Every professional body (ranging from the Royal Society to the British Computer Society or the Institute of Physics) have individuals in place to help promote the work of that organisation and the profession as a whole. These PR professionals perform a variety of tasks: working with the media to decide which research to promote, running media training sessions, attempting to influence how research is represented in the media and encouraging scientists to talk to journalists. In a day to day context they produce press releases, translate complex terminology and ideas for general audiences, liaise with journalists, train scientists to talk to the media, respond to media requests and promote their organisations as trustworthy sources for scientific information. Some of these organisations also hope to promote their profession as an attractive career to young people (girls and boys).

Professional science communicators and professional bodies are thus crucial players in how women in SET are represented in the media. Although science journalists all have their own cultivated networks, they will often follow the lead provided by the science media communicators, science journals and science bodies in deciding what to cover and who to quote for a story. The bulk of science reporting is heavily based on the information, framing and quotes offered in the press release and/or journalists will often rely on the authors of reports and the spokespeople for the relevant organisations.

Our previous research (Kitzinger et al., 2008b) suggests that journalists are rarely interested in the gender balance of who they quote (unless it is seen as a story 'about' gender). They are more concerned to produce 'good copy' – using experts who are credible, accessible, quotable, and cooperative. While there is some mileage in encouraging journalists to reflect on the gender balance of the experts they consult (and we make recommendations in Reports 1, 2 and 3) it is likely to be *more* effective to look at the 'supply' end of how stories about SET are produced. Media engagement strategies with a gender-equality agenda might thus have a role to play in helping to improve the amount, range and quality of media representation of female scientists. This fourth report draws on interviews with science communication professionals to explore their views on

what their role might be, and makes suggestions for how they might address gender inequalities in media representations of SET most effectively. Finally, we acknowledge the challenges they might face in attempting to achieve these changes.

Our research method:

Nine science media communication specialists and one aspiring science communicator were interviewed. They represent a variety of SET fields including engineering, physics, computers and more broad science communication organisations. Job titles varied – including, for example, ‘Press Officer’, ‘Manager of Public Relations’ or ‘Head of Media External Relation’. Each interviewee was selected as they were the primary contact for the media.

Throughout this report we use the phrase ‘press officer’ or ‘science media communication specialist’ to avoid identifying interviewees via their specific job titles. In order to preserve the confidentiality preferred by some interviewees we do not indicate which organisation the speaker represents; we have also removed explicit references to the area of SET they are involved with or the gender of the interviewee.

Half of the interviews were conducted over the phone and half done face-to-face. Each interviewee was asked the following questions:

- What does your organisation do to promote women in SET?
- What does your organisation do regarding the media representation of women?
- Do you think there are problems with the way women in SET are represent in the media? What are they?
- What are the obstacles to change?
- Do you acknowledge gender inequalities in your media training?
- What could be done to improve media representation of women in SET?

We were also able to draw on data from focus groups and interviews with female scientists conducted for another strand of this research (the method for this part is reported in Report 1 so is not repeated here). We return to this data in section 2.3 to reflect on one specific issue raised by science communicators, namely women’s ‘lack of confidence’ and failure to ‘put themselves forward’.

The structure of this report is as follows: chapter 2 presents the findings based on our interviews with science communication professionals and chapter 3 concludes with our recommendations.

Chapter 2: Findings

This chapter draws on our interviews with science media communication specialists to address three main questions:

- Do press officers see themselves as having a remit to promote women in SET?
- How do press officers select sources for the media?
- Who or what did our interviewees see as ‘to blame’ for the marginalisation of female scientists in the media and where do they think the solutions might lie?

We also address three interesting parallel issues that arose during the interviews:

- The asymmetrical ways in which the media sometimes actively foreground female scientists.
- The predominance of women in science communication professions and the implications of this.
- The relationship women in SET have with their professional bodies.

2.1. Do press officers see themselves as having a remit to promote women in SET?

Prior to being interviewed most of the science media communicators had not previously considered the role they might have in challenging gender inequality through their work with the media. One organisation had spent time promoting one of their female vice-presidents when she was first elected more than 5 years ago but had done little since then which emphasised her achievements in the context of gender. Instead of discussing specific activities their organisations had pursued to promote women scientists *in the media*, interviewees tended to focus on non-media initiatives (e.g. school visits, career training days). When asked directly if they did anything to promote women via their media work, they made comments such as: ‘It’s not a problem, not something you think about very much’ (Interviewee SC1), ‘[it] is not something we have discussed specifically’ (Interviewee SC5) or ‘it is not particularly one of our strategic objectives’ (Interviewee SC6). As one interviewee commented:

“I don’t think it’s been an objective to go out and find people representing different demographics in terms of race or gender, it’s not a focus, but an interesting point”. (Interviewee SC4)

“I don’t think it’s been an objective to go out and find people representing different demographics in terms of race or gender, it’s not a focus, but an interesting point”

Most science media communicators did not view the representation of women as a particular problem. Their own focus was on the general representation of their area of SET:

“What we do is promote excellence, whatever your background/ gender / ethnicity [...] If it’s just a bog-standard science story then the objective is to promote excellence in UK science”. (Interviewee SC6)

Although our interviewees were often concerned with the general issue of how scientists were represented - this tended to be viewed in gender-neutral terms. Thus, for example, in response to questions about how to ensure more women might be quoted as experts in the media, respondents tended to emphasise the challenges in persuading *any* scientist to engage with the media.

“Scientists will not leap to a microphone to make a statement on a knee-jerk reaction without being absolutely certain that what they say is meticulously correct. [...] So that is one limiting factor and the other, of course, has been that many scientists felt that it has been very easy for their contributions to be misrepresented by journalists who will edit what they say”. (Interviewee SC7)

It was also often a struggle to get scientists to compromise with media values or to overcome their wariness of certain outlets. Some press officers reported, for example, they had difficulty finding anyone to talk to tabloid journalists as this was viewed as ‘dumbing down’ their science. (Interviewee SC3). Science media communicators also emphasised the importance of the ‘local institutional culture’ which might inhibit scientists from cooperating with the media:

“We do what we can as a learned society. But we’re restricted by what the local institutional culture is, because if someone is working in their department and the department isn’t really media savvy or media friendly then it’s difficult to get them to come out of the woodwork and participate”. (Interviewee SC9)

This interviewee added they would find it helpful if: ‘Heads of Departments (would) change this culture and then people feel able they won’t be ridiculed [...] then learned societies can offer some facilities to get engaged.’ (Interviewee SC9)

2.2. How do press officers select scientists to speak to the media?

There were two issues of utmost importance for press officers in selecting sources to engage with the media. Was the scientist willing and able to speak to the media within the required timeframe? Did she or he have the appropriate expertise? In this context the gender of the scientist was seen as low priority or irrelevant. ‘When the BBC phone you at 12:30 with something for the 1:00’, explained one, ‘I’m afraid gender is fairly low down my list of priorities’ (Interviewee SC3). ‘We need to have people who are able to respond to the media’, commented another, ‘whether male or female is irrelevant’ (Interviewee

SC1). The pressure of deadlines should not be underestimated: 'you'd love to be able to balance your portfolio of who talks to the media but often it's driven by who you can get hold of in their lab in half an hour' (Interviewee SC9). It can be difficult to find scientists willing to make time to talk to the media, especially at short notice, so when press officers do find someone; they often stick with these people.

"You have to be willing to engage in the media's timeframe, which is, you must get back to them in half an hour and you must be willing to go into the studio and take time out of your day for this. It does mean quite often going to the same people because they're easier and available and we know they'll do it." (Interviewee SC2)

"When the BBC phone you at 12:30 with something for the 1:00, I'm afraid gender is fairly low down my list of priorities"

When asked to reflect if they might wish to ensure female scientists were represented, press officers were hesitant to be seen as overtly managing any messages. However, some were personally interested in promoting women, most often because they had personal experience of the problems facing women in SET. As one commented:

"I'm very conscious of the image [my SET profession] has as a male -dominated subject. So if I'm asked for a news item to put forward a spokesperson, all things being equal, if I get a choice in the matter, I'll put forward the woman". (Interviewee SC3)

"I'm very conscious of the image [SET] has as a male dominated subject... if I get a choice in the matter, I'll put forward the woman"

Most of our interviewees, however, resisted the idea that gender might be a consideration in selecting sources. 'We choose the best expert for the job—whether it is a women or a man' commented one (Interviewee SC5), 'I don't really mind if I put a man or a woman on BBC Breakfast', commented another, 'if they're the best expert who knows the most about their story, that's the person that we want' (Interviewee SC2). 'What's more important is a credible voice rather than tokenism - it's very easy to spot' commented a third (Interviewee SC1)

Systematically gender-auditing their work was not something most of our interviewees had considered:

"I'm not going to look back and think 'gosh out of the last 5 [scientists] I had, I fielded a bloke every time, next time I must field a woman". (Interviewee SC3)

“We’ve never actually looked on that basis, it’s not something we note [...] In terms of female [SET professionals we provide to the media] you can probably count them on one hand unfortunately”. (Interviewee SC2)

“What’s more important is a credible voice rather than tokenism - it’s very easy to spot”

For most of our interviewees, gender only became relevant when certain subjects were under discussion. ‘If a journalist came to me and wanted to talk about women’s sexual health’, commented one, ‘my personal preference would be to get a woman scientist to talk about that’. (Interviewee SC9). ‘If doing a human resource based story’, commented another, ‘we will [try to find a woman scientist]. For example, if we were doing something about young people in science, then we would obviously try and be representative.’ (Interviewee SC6)

“If we were doing something about young people in science, then we would obviously try and be representative”

Science media communicators sometimes offered vague statements about awareness of diversity, but little concrete evidence that they did anything to follow through with these statements. They often displayed a personal commitment to equal opportunity but did not discuss any structures to ensure diversity.

“It is self evident that scientists need to be much more prominent in the media [...] and those scientists, of course, should not always be male, grey haired and of a certain age but should include the excellent women scientists we have here in the UK and those from a very broader spread of the community. [...] In all our work, whether press releases or whatever, we are very conscious, we wish to be seen to be seen to be promoting all various diverse contributions to science, whether women or ethnic minority or different parts of the country.” (Interviewee SC7)

“Scientists need to be much more prominent in the media ... and those scientists, of course, should not always be male, grey haired and of a certain age”

The phrasing of this goal in terms of being ‘seen to be seen’ to be promoting women in SET is, perhaps, revealing. Certainly, it is relatively easy to present an organisation as committed to equal opportunities but much more difficult to *succeed* in carrying out work which may challenge established routines of working and traditional hierarchies.

2.3. Who or what is to 'blame' for the relative marginalisation of female scientists in the media?

We asked all our interviewees what they thought impacted on the profile of female scientists in the media. They focussed on two factors (a) gender segregation within SET and (b) women's failure to come forward to talk to the media.

Gender segregation within SET?

Our interviewees often pointed out that there was one over-riding reason why women scientists were less prominent in the media – and that was because they were less prominent in the field. One interviewee commented, for example, that they worked on media stories regularly with around 100 SET professionals but only a 'handful' of these were women. However, in their view, the explanation for this was simple: 'There's certainly less women [in this area] speaking in the media, but it's probably a reflection of there being less women' (Interviewee SC2). Other science media communicator made similar comments:

"It's kind of a vicious circle if you like. [...] The media will reflect the actual situation and not the other way around. So if there's a deficit of women in areas of expertise or in positions of power then they're not going to be on TV." (Interviewee SC4)

"The representation is probably quite naturally biased towards men just because in academia they tend to be a higher proportion of researchers at senior positions [who are men]. But that's just a reflection of the academic environment more than the media's use of either sex". (Interviewee SC4)

***"The representation is probably quite naturally biased towards men ...
But that's just a reflection of the academic environment."***

Most press officers believed the most effective way of getting more women in SET *in the media* was to get more women in SET, and encourage them to develop their research and profile.

"I think it's more a problem of getting women into science and having a greater proportion of women in science which is then going to be reflected in the media". (Interviewee SC2)

"From our perspective, because we want to promote world class science, our problem is how do you help them build their careers, to get proportionate journal papers. Stories that we work on that get best coverage are in the best journals". (Interviewee SC6)

This is, of course, an important point – and a necessary strand in any attempt to address gender inequalities within SET. However, if press officers focus

exclusively on the low profile of women in SET in the media as a structural problem happening *somewhere else*, then this absolves them of any responsibility for contributing to transforming the representation. Describing the situation as ‘quite naturally biased towards men’ does not suggest any agency for change. Describing it as a ‘vicious circle’ recognises the complex chain of contributing and mutually reinforcing factors, but needs to be accompanied by reflection on how to ‘break the cycle’. It is noticeable that the interviewees often did not address how *they* might help to challenge the problem, and tended to describe what they did rather than reflect on how this might be different. One interviewee, for example, commented:

“We have a database of scientists and we get contacted by the media [...] [and] we put them in touch with experts in the field. And if that database reflects the gender divide, which it will, of researchers, then that’s who the media are going speak to. [...] So if there’s a deficit of women in areas of expertise or in positions of power then they’re not going to be on TV.” (Interviewee SC4, our emphasis)

“If that database reflects the gender divide, which it will, of researchers, then that’s who the media are going speak to”

“If there’s a deficit of women in areas of expertise or in positions of power then they’re not going to be on TV”

The (perceived) lack of confidence of women in SET?

Women’s own lack of confidence in ‘coming forward’ was also highlighted as a problem by science media communicators. Two of our interviewees commented on their experience of seeking scientists to engage with the media – and their observation that men seemed more likely to put themselves forward.

“I think they [women] have just as many opportunities in the media as a male would in those circumstances, it’s just encouraging them to come forward. [...] I don’t think we can improve it ourselves [...] I think the more women who put themselves forward as spokespeople in science and engineering to the media the more they are likely to encourage other young women to go into that”. (Interviewee SC2)

“It’s a matter of people having the confidence to put themselves forward. I occasionally trawl our membership and say ‘can I have volunteers’ and it is the guys who come forward”. (Interviewee SC9)

“I occasionally trawl our membership and say “can I have volunteers” and it is the guys who come forward”

Although all the science communication organisations we approached for this research offered media training, none offered any specifically aimed at women. Nor, as far as we could gather, did media training include specific discussion of gender-related issues. There were two reasons given for this by the press officer we interviewed: women did not request it and/or the science media communication specialists did not think there were gender issues to address.

“Yes, we offer media training but nothing in particular for women [...] There is no demand from female scientists. We’d consider it, but we don’t think they face any particular or different issues. We’d be more likely to tailor our training, for example, to those starting out in research, or in using the right language when speaking to the media”. (Interviewee SC1)

Given that science media communicators often emphasised women’s relative lack of willingness to speak to the media we decided to explore this issue in more depth, both to try to understand the problem and to explore potential solutions. In order to do this we returned to our questionnaires/interviews/focus groups discussions with 86 women working in SET. We re-analysed this data to explore what these women saw as the specific challenges holding women back from engaging with the media.

On the one hand it was clear that many of the women scientists we interviewed agreed with the press officers we spoke to. There was, they said, a tendency for women, in general, to be less confident about public speaking than men. (See report 1, Kitzinger et al., 2008a). The scientists we interviewed included several with extensive experience of teaching and mentoring younger colleagues or students. One gave her diagnosis of the problem as follows:

“Women are traditionally poor at putting themselves forward, [...] and competing with other people who are often men with larger egos and louder voices”. (Interviewee 12)

Others remarked that they themselves lacked confidence in their media performance and sometimes explicitly linked this to being a woman. One, for example, stated:

“I was [...] not happy with how I performed [for the media]. That is partly because I am very self-critical, partly because I was probably young and untrained at the time or perhaps because I am a woman, [...], and in some ways I am actually very confident, but I lack confidence if you see what I mean.” (Interviewee 11)

In this context one scientist suggested women-only media training sessions might be useful. ‘I would love to sit down with some journalist [...] and actually say “what would you like from us, how do you work, and how can we communicate with you better?”’ She added:

“And possibly to have women-only groups doing that because I think women are very shy at coming forward [...] and I think a bit more interaction with the media in meetings like that would really help us do better”. (Interviewee 12)

These scientists pointed to the need for specific support and training to encourage women to ‘get themselves heard’.

“Women struggle a little bit and they need to have [...] someone to say ‘you are doing really good work’, to support them selling their own ideas, getting themselves heard really.” (Interviewee 12)

“Women struggle a little bit and they need to have confidence to sell themselves”

The problem women have ‘getting themselves heard’ is often unreflectively discussed as a ‘woman’s problem’. Yet in order to ‘be heard’, someone needs to listen. Thus, this is a problem where both men and women are part of the solution. It became clear that many of the scientists we interviewed felt that the issue needs to be addressed through reflecting what happens at meetings, ranging from student seminars to board rooms, from panel discussions to key note events at conferences. When press officers reflected on our original findings they also endorsed this perspective. It is important not to simply talk of women’s supposed ‘lack of confidence’ without placing this in context. Our research highlights that other ways of looking at this problem could include: reflecting on why and how men sometimes assertively ‘take the limelight’; confronting sexist representations; transforming a bullying culture and addressing practical obstacles to women’s participation in media events. Each of these is discussed below.

Re-contextualising the ‘problem of women’s lack of confidence’

- **Men putting themselves forward more assertively.** Rather than blaming women’s lack of confidence some of the scientists we interviewed believed that women may be *denied* opportunities for public speaking. Women, even when they wish to put themselves into ‘the lime-light’, may experience male colleagues more eager to take the lime-light themselves. Some women had had to fight hard to gain their media experience. As one science media communicator explained, it is not just that men put themselves forward more frequently, but that structures replicate current practices.

“One of the major problems for women’s career progression in SET is that they are excluded by the ‘old boy’s network’ and from opportunities to speak at conferences, etcetera. I expect this could lead to a perception (conscious or otherwise) by individual women scientists, and by the community as a whole, that woman scientists are not worthy spokespeople”. (Interviewee SC10)

“One of the major problems for women's career progression in SET is that they are excluded by the ‘old boy’s network’”

- **Confronting sexist representations and media frames.** Our research suggests that some women may hold back from pursuing a media profile because of concern about how they will be framed or misrepresented. Some are ambivalent about being ‘set up’ as newsworthy because they are female. Others feel the opportunities offered them are framed through an inappropriately ‘soft’ (e.g. women’s magazine) style-lens that could undermine their professionalism. Others do not want to be subject to media stereotyping. Women face challenges around issues such as what to wear, or how to convey, what one interviewee called: ‘enthusiasm buzz without floozie-ism’ (Interviewee 11). Given how sexism operates it may be hard for a woman to try to be inspirational without being labelled ‘flirtatious’. (See discussion of how Professor Kathy Sykes has been represented in Report 2, Kitzinger et al., 2008b, section 5.2). Pressure on women to worry about how they look or what to wear can get in the way of confidently dealing with the media, especially TV. One woman we interviewed, who had extensive experience on television, spoke of having her ability to present her ideas and enthusiasm for SET undermined by explicit comments on her clothing from media producers.
- **Bullying Cultures.** An ‘alpha male’ or ‘bullying’ culture within SET was also identified by some of our interviewees as a problem. This culture can make some women feel constrained in public speaking in general (although it inspires others to become ‘as assertive as the men’). We are not suggesting that women cannot cope with the ‘rough-and-tumble’ of ‘boys’ games, but that a culture more sensitive to diverse ways of debating might allow different people (and this will include some men) to find their voice. An ‘alpha male’ culture was identified by some interviewees as disempowering within some SET sectors. As one woman commented, it could be hard to become confident speaking out in SET circles because of the intensely macho and competitive culture. In her experience, male colleagues would ‘sort of decide who is the alpha male in the group, and the way they do that [...] is by being as belittling as possible to the person who is giving the talk’ [FG3]. Such ‘belittling’ responses were also seen as a feature of some media engagements. For example, several interviewees had a sense that journalists could be aggressive questioners and seek to discredit or undermine their interviewees, rather than give them a chance to explain (see Kitzinger et al., 2008a).
- **Practical issues.** Travel away from home, being on-call, and evening work which may accompany public speaking or media events, can also pose challenges for anyone with domestic ties. Caring responsibilities (e.g. for children or elderly parents) tend to be disproportionately borne by women. Such responsibilities can impact on ability to travel to international conferences or be flexible in meeting the demands of the media. As one (child-free) scientist

we interviewed pointed out, appearing on *Question Time* meant leaving home at 4pm and adding 6 hours to her working day.

All the factors above may thus also have a contributory role to play in holding back women's participation on media platforms.

The Media?

Interestingly, the press officers we interviewed did *not* regard journalists as responsible for the higher media profile given to men in SET. 'I think the media are happy to speak to any expert in the field regardless', commented one press officer (Interviewee SC4). In fact, as another added: 'I think the media's quite open to having *more* and *more* women speaking about science and engineering' (Interviewee SC2). They added:

"If young women scientists, potential scientists look at the newspapers or TV and do not see women represented - that's not the fault of the media. They're only working with what they've got". (Interviewee SC2)

"If young women scientists ... look at the newspapers or TV and do not see women represented - that's not the fault of the media. They're only working with what they've got"

However, our interviewees did observe patterns in *when* the media considered gender to be relevant. In their experience different types of TV outlets, for example, would sometimes come up with gender-specific requests (either implicit or explicit) – and this could lead to an insidious form of gender segregation in the roles assigned to male and female scientists on screen. We unpack these observations below.

2.4. Asymmetries in media requests for male and female scientists

Several of the media communication professionals interviewed gave examples of media requests which were shaped in gender specific ways. Although routine media reporting about SET tends to cite more men than women this was seen by press officers as simply happening by default (as there are more men in SET, more men will therefore be in the media). As one commented: 'On the whole, news journalists [...] (will) take someone who knows their stuff and can explain it, regardless of gender' (Interviewee SC10).

However, different dynamics come into play in the production of television programmes. For example, some of the science communication specialists we interviewed note that, when putting together a serious TV documentary, producers might particularly pursue a senior expert to display what one interviewee called 'gravitas or welly' (Interviewee SC4). This might mean that a male scientist was more likely to feature in this sort of media output. As one interviewee explained: 'If you're dealing with a real heavy-weight current affairs

programme, they want someone with 30 years experience', that means that 'you tend to get the white middle-class male' (Interviewee SC9).

“If you’re dealing with a real heavy weight current affairs programme, they want someone with 30 years experience, you tend to get the white middle class male”

In other cases, our interviewees had experienced the media actively seeking to foreground *female* scientists. For example, one had helped to publicise new research on obesity. The main author of the study was an older male scientist. However, during a visit by *The Sun* newspaper, the journalist requested that the junior, female, scientist be the spokesperson and the one to be photographed. More generally press officers reported that particular television producers sometimes actively sought women scientists to participate in programmes. The explicit preference for a female scientist was sometimes linked to the belief that women - or at least certain *types* of women - will have more audience appeal, are 'better communicators' or are more 'appropriate' for certain types of subjects. These preferences are also linked to ideas about a particular outlet's target audience.

In one science communicator's experience, 'a younger trendier programme' might be more interested in featuring a young Asian female scientist in order 'to appeal to a younger, more diverse audience' (Interviewee SC9). Another described how a production company specifically asked for help to find a female scientist in order to appeal to the demographics of their audience:

“The producer [...] was desperately looking for a scientist who would represent the demographic of a Channel 4 programme that was being broadcast at a certain time in the evening - ‘Our audiences is predominantly women of a certain age, so if you could get a female scientist...’ What he meant was a female scientist who was photogenic, could come across well on TV”. (Interviewee SC4)

A third science media communication specialist said they were often contacted by the BBC with requests for a 'young, attractive woman' for certain types of programmes: 'The BBC quite often ring up and say 'I would like a young, attractive woman on *Breakfast*' [...] Sometimes people deliberately ask us can you find a woman for the story, we never get asked "can you find a man?" (Interviewee SC2)

“The BBC quite often ring up and say “I would like a young, attractive woman” [...] Sometimes people deliberately ask us “can you find a woman for the story”, we never get asked “can you find a man?”

It became clear from our research that a complex relationship exists between genre and outlet and gender. Our other three reports show that different media genres represent women in SET differently. For example, proportionately more women scientists feature in the *Daily Mail* than in the *Guardian* and female scientists have a higher profile in TV *drama* than in TV *news* programming.

Similarly, whilst it might be fairly straight-forward to get women in SET on *BBC Breakfast*, it still remains difficult to secure coverage for women in SET in broadsheet newspapers or in the evening television news. Clearly, the media are not simply *reflecting* the actual gender segregation within SET (the explanation often given for the reason why male and female scientists are represented in the media) instead the media are actively creating gender segregation.

The danger here is that the media will showcase male scientists as scientists with gravitas, and women scientists will be used when the story is seen as 'feminine' or when the aim is to make science more 'friendly' or 'accessible'. The portrayal of women scientists as primarily young and attractive is problematic. By emphasising female scientists' appearance, these portrayals emphasise the divide between 'real' scientists (who are male and middle-aged) and science 'eye-candy' (young and enthusiastic women). The answer to this is not simple. The asymmetries in how women and men may be presented can pose a real dilemma for those seeking, on the one hand, to promote women as 'normal' and 'prestigious' scientists, and, on the other, to enable women scientists to help to change the face of traditional science (for discussion of this see Report 2, Kitzinger et al., 2008b).

One of our interviewees reflected on the dilemmas this threw up. Their organisation was seeking daytime TV coverage of science through promoting 'science as something done by scientists and scientists are people with personalities'. Getting coverage on daytime TV reached a whole new audience in what they hoped would be potentially innovative ways.

"... to get onto daytime TV most of the time we would be marketing women scientists. Not so much as scientists but as mothers, as people who started their own business, as people who have survived a personal crisis, as people who are guiding their children through difficult lifestyles, who happen to be scientists." (Interviewee SC3)

As this science communicator explained, however, promoting women in SET in this way was not acceptable to everyone.

"They [women scientists] feel that being on a makeover programme, 'how I balance my life and work' type of article in a women's magazine, is somehow demeaning and is somehow belittling them". (Interviewee SC3)

Whilst there is nothing wrong with representing a personal side of science, there is clearly a problem if *female* scientists are the ones consistently represented offering personal details and posing as the ‘human face’ of science when *male* scientists are representing ‘objective’ science and the face of authority and expertise.

We would suggest that alongside simply demanding *more* representations of women in SET, there needs to be more representations of women in SET in *different* media genres and across a range of media outlets, not just in a ghetto which *reinforces* as much as it *challenges* gender stereotyping. At the same time, in seeking to promote the ‘accessible’ and ‘human face’ of science, it is important that men, as well as women, take on these roles.

2.5. Science communication: reflections on the dilemmas of a ‘feminised’ profession

Another striking feature to emerge from our interviews was the fact that most of the science communication professionals we approached were women. In fact, science communication has in some ways evolved as a ‘woman’s profession’. Our interviewees saw the feminisation of this field as partly due to the different skills that were valued in this area of employment:

“I think women are better at identifying soft skills than blokes and have looked around and thought [...] ‘yeah, I’m always called in to do department open days, I can communicate, let’s go somewhere where those skills are valued”. (Interviewee SC3)

Science communication was also attractive to women because it can be a relatively *flexible* profession. Our interviewees contrasted this with ‘bench’ science – where career breaks or a reasonable work-life balance might be more difficult.

“In my experience in the science communication field, it is women like me who have left the bench and gone into communication [...] because of flexibility and the hours and the benefits. For example, I have a small child. It wasn’t feasible to continue to work in the lab, working odd hours, and with no clear career progression”. (Interviewee SC4)

“Is there a place for me to continue my research if I’m going to take that break [to have children]? Science communication then becomes more attractive because it means there is something you can do, even if it’s just a stop gap. You can write or be involved, you keep abreast of the movements in your field”. (Interviewee SC8)

“It wasn’t feasible to continue to work in the lab working odd hours, and with no clear career progression”

The science communication field thus includes a high proportion of women and these women are very aware of the challenges facing women in SET. However, at present, it does not seem as if their awareness of, and motivation to, address gender issues are being fully harnessed in their professional roles.

It would seem to us that the predominance of women in science communication may be another double-edged sword. On the one hand it places women in a gate-keeping role and offers new opportunities among a range of careers for SET graduates. On the other hand, science communication might be seen as another 'leaky pipe' taking women away from 'front line' science. It might also be seen as a lower prestige area of SET employment and one which might stereotype women as 'explainers', or 'defenders' of science, rather than 'real' scientists. (Indeed a perception that women were taking on this role was commented upon by scientists we interviewed – see report 1, Kitzinger et al., 2008a, section 4.2 and report 2, Kitzinger et al., 2008b, section 5.1).

2.6. Responsibilities of SET organisations

While the above discussion has focussed on the role of the professional science media communicator, their role should not be considered in isolation. As one interviewee commented: 'To a certain extent the science media communicator can only represent and use the organisation's attitudes to gender balance' adding, 'I wonder whether the recommendations should focus more on the organisation that the little ol' press officer?' (Interviewee SC2). This point was echoed by another press officer who commented:

"The solution is not to simply state that it is the responsibility of science communicators to improve how SET women are represented in the media. I'd worry that, at least initially, they would be fighting against a virtually impossible situation and it would ultimately be perceived as too difficult, outside of the remit of the job" (Interviewee SC10)

"I wonder whether the recommendations should focus more on the organisation that the little ol' press officer?"

Science media communicators need to be in a position to change, and to create change, and this will depend on their position within their organisations. As one observed: 'Some press officers have the luxury of being respected, relatively autonomous and have a direct line to the organisations management or better still are part of the management committee ...[however] these people are in general in the minority' (Interviewee SC10).

Clearly, the relationship that science media communicators have with their organisations, and the context in which they work, are crucial. Press officers cannot act in isolation or operate effectively without a supportive structure. In our

recommendation, therefore, we offer suggestions to SET organisations who wish to support their science media communicators in promoting gender-equality and challenging gender-segregation in SET.

Chapter 3: Conclusion and recommendations

Science media communicators can have an important role in promoting more, and more *positive*, representations of women in SET as they are key gate-keepers in the process. However, our research highlighted the fact that, at present, press officers often do not feel they have a specific remit to promote women in SET in their media work. Their main concerns when selecting people to appear in the media is whether they can find a willing scientist with the appropriate expertise in the area who is able to meet the media's deadline. Although the science media communicators we interviewed were often motivated to change the representation of women in SET they felt restricted by their institutional context and workloads, or the reluctance of female scientists to volunteer for media work. In order for press officers to be able to challenge gender-inequality in the representations of SET we propose the following recommendations. We have divided our recommendations into 2 sections. Section 3.1. addresses how women in SET can be supported to increase their willingness to talk to the media. 3.2. focuses on implications for science media communicators and SET organisations.

3.1. Supporting women in SET engaging with the media

As many press officers pointed out, unless women in SET are prepared to talk to the media then it is hard to change their profile in the media. Strategies to support women in SET to be part of the pool of experts to whom press officers/the media refer, could include the following.

- **Build women's media skills.** Support for women scientists at every level of public speaking may help women incrementally to develop skills (and confidence) in speaking to the media. Encourage women to 'take the floor' in a range of ways from debating in meetings to public speaking are all important strategies to get more women in SET in the media. In this respect, media mentoring might be useful. For example there are clearly some experienced scientists who deal very well with a high media profile and could usefully advise and mentor other women. Although some women love working with the media from the outset, for others the confidence to engage with the media came in a series of small steps. It is also important to explore diverse routes into and recognise *transferable skills* around media work. Conventional 'public speaking' may not be the only route into the media - a passion for communicating, including working with school children, can kick start a media career.
- **See different types of media as offering different opportunities to involve women in SET in media work.** The type of media may make a difference to women's participation in the media, for example, some scientists may feel more comfortable doing radio work (at least at first). Women are twice as likely to appear on a *radio* news programme as on

television (Report 2 Kitzinger et al., 2008b – footnote 2). This may be linked to the fact that it is easier for women to get to local radio studios or to do interviews over the telephone rather than to go into television studios (and still meet domestic commitments). It may also be linked to the fact that as radio is a non-visual media women do not have to worry about sexist scrutiny of their appearance.

- **Media skills training could explicitly reflect on gender issues.** Although training should not be regarded as a panacea, reflection on gender issues might be useful in traditional media skills training. This could include discussing the findings of research about how men and women are represented in the media, reflecting on male and female scientists' own experiences and inviting men to reflect on how they engage in debate in the workplace/conferences. This last element could include discussion of the extent to which trainees contribute to, or undermine a 'listening' and 'constructive' culture, how men and women present themselves as scientists and SET as a career, and how team members are represented in public announcements and in press releases.
- **Workshops/training specifically designed to help women develop confidence in public speaking might be useful.** Training in how to deal with aggressive media questioning would also be welcomed by some women (and some men). We recommend pilot training sessions or further consultation with women in SET to determine whether or not media training aimed specifically at women would be an attractive option.
- **Employers could provide institutional support for employees to pursue media engagement.** If press officers are to promote more women as expert sources then they need support from the organisations that employ scientists. If those bodies (e.g. University departments) had objectives to support female scientists talking to the media this could increase the pool of female experts on which press officers could draw. Employers (and, in fact, research funders) might also consider practical issues such as time off, travel costs and childcare costs/arrangements for employees doing media work, thus acknowledging the additional commitments media work entails.
- **Ensure women get opportunities for high profile public speaking.** Speaking at high profile public events (as invited panel member or key note lectures) achieve two things. Firstly they place a scientist at the centre of attention, for example, giving women experience of public-address. Secondly key note speaking often acts as a pre-cursor to media experience, highlighting to the scientific community and journalists the key scientists who are the prominent researchers in an area, and not just part of the 'old boys network'. Organisations need to challenge this old boy's

network and ensure that women in SET are included in *all* events which might attract media attention.

- **Create broader change.** As the above identification of issues makes clear it is also not just a question of changing women – our data suggest the need to question the ‘old boy’s network’ and the ‘alpha male’ culture of debate and competition within SET sectors, and within some styles of journalism. It also highlights the need for journalists and TV producers to reflect on sexist assumptions and practices, and to ensure practical obstacles for women are removed.

3.2. The role of science media communication specialists and SET organisations

SET organisations and the science media communication specialists that they employ clearly have a role in supporting some of the changes or initiatives outlined above. They also have additional specific roles.

- SET organisations can think about how the work of their press office fits within an overall strategy to challenge gender-inequality in SET. Producing an integrated organisational commitment to gender-equality work could include:
 - ensuring that challenging gender-segregation in SET is a clear part of the science media communicator’s remit;
 - committing extra resources or supporting project-initiatives to target this issue;
 - ensuring that science media communicators have an opportunity to provide their organisation with feedback on their own experience and expertise in relation to media content and ways to improve representation;
 - integration of the media communication role with a broader management and strategy task-force in relation to gender-equality may be an important way forward.
- If SET organisations provided such as context then science media communicators could then liaise with each other to explore the challenges of pursuing a gender-equality agenda in their work. This could include:
 - exploring the need for specific resources and institutional contexts to support such work;
 - pursuing specific initiatives e.g. creating a better gender-balance on contact lists used to source scientists for the media;
 - sharing examples of good practice;
 - sharing experience of the pros and cons of specific initiatives;
 - exploring dilemmas around the risks of, for example, tokenism;
 - reflecting on media-training courses and how these address gender-related issues;

- discussing strategies for challenge asymmetrical media interest in particular types of female scientists for particular types of outlets.
- SET organisations seeking to challenge the 'representation' of women in the mass media, can also usefully reflect on the representations that they themselves produce. This could include reviewing their own literature, for example, leaflets, websites, exhibitions (e.g. in collaboration with science museums). It could also include reviewing displays within their own buildings. One question to be asked, for example, are visitors to the headquarters and those attending committee meetings confronted with an impressive array of paintings of eminent *men* - or is this complemented by images of eminent women too, and by more contemporary and diverse image of the profession? (Some organisations have addressed this issue. The Institute of Physics named a number of rooms after women physicists, and each room has information about the physicist and most also hang a photograph. See <http://www.ukrc4setwomen.org/html/employers/workplace-culture/%3e> for further information.
- SET organisations need to reflect on how they challenge gender segregation in their work *across the board*. This could include ensuring women are fully integrated and represented in their professional organisations (this may mean that, in turn, women might be more willing to engage with the media when encouraged to do so by that organisation). It could also include ensuring women are invited onto panels and to present keynote speeches (thus building women's profile within the profession and increasing public speaking experience and source 'capacity' which might ensure more women come forward in response to media appeals).

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 2 (Kitzinger et al., 2008) compares how male and female scientists are presented in press.

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).

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

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