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Representations of women researchers in Finnish print media: top researchers, multi-talents and experts

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ABSTRACT
Women's underrepresentation in the scientific community is currently on the agenda of science policy, both in Europe and internationally. The significance of media as a provider of female role models, on the one hand, and in reproducing stereotypical images of scientists, on the other hand, is often mentioned in this context. However, there is relative lack of research on how women researchers are depicted in the media, especially outside US and UK contexts. Finland provides an interesting context to study media representations of women in research, as a relatively gender equal and research intensive setting seen from a global perspective.
The media representations of women researchers in Finland were explored by analyzing person interviews in Finnish printed media: newspapers, women's magazines and magazines aimed for general public. The data consists of 107 interviews of women researchers from all fields of research, published in 1997-2014. Overwhelming majority of the interviews was written by female journalists. The analysis focuses on both social and linguistic aspects of the interviews from a gender perspective. Women researchers were found to be represented by a variation of frames, the most common of which were the Expert and the Top Researcher. Their family context was frequently mentioned, and the interviews frequently commented their appearance (e.g. hair, physique, way of moving).
The fact that the interviewees' family context was often highlighted in the interviews may serve to convey a message that it is possible and common to combine a career in research and family. One main result of the study was the diversity of representations of female researchers, compared to US and UK studies. The diversity of the media images of female researchers suggests that the media may provide important role models for young women, encouraging women to choose research as a profession.
Keywords: Research career, media, Finland, public representations, academia.

Representaciones de mujeres investigadoras En la prensa escrita finlandesa: investigadoras de élite, multi-talentos y expertas

RESUMEN
La subrepresentación de las mujeres en la comunidad científica está actualmente en la agenda de la política científica tanto en Europa como a nivel internacional. Por una parte, se menciona a menudo el significado de los medios como proveedor de modelos femeninos, y por otra parte, de reproducción de imágenes estereoscópicas de científicos, por otro. Sin embargo, hay una relativa falta de investigación sobre cómo se representan las mujeres investigadores en los medios de comunicación, especialmente fuera de los Estados Unidos y el Reino Unido contextos. Finlandia ofrece un contexto interesante para estudiar las representaciones de los medios de comunicación de las mujeres en la investigación, como un enfoque de igualdad de género y de intensidad de investigación visto desde una perspectiva global.
Las representaciones mediáticas de las mujeres investigadoras en Finlandia se exploraron analizando entrevistas personales en medios impresos finlandeses: periódicos, revistas femeninas y revistas destinadas al público en general. Los datos se refieren a 107 entrevistas de mujeres investigadores de todos los campos de investigación, publicadas entre 1997-2014. La abrumadora mayoría de las entrevistas fue escrita por mujeres periodistas. El análisis se centra en los aspectos sociales y lingüísticos de las entrevistas desde una perspectiva de género. Se encontró que las mujeres investigadoras estaban representadas en una variedad de marcos de referencia, siendo los más comunes el de Experta e Investigadora de Élite. Su contexto familiar fue mencionado con frecuencia, y las entrevistas frecuentemente comentaban su apariencia (pelo, físico, forma de moverse).
El hecho de que el contexto familiar de las entrevistadas se destaque a menudo en las entrevistas puede servir para transmitir un mensaje de que es posible y común combinar una carrera en la investigación y en la familia. Uno de los principales resultados del estudio fue la diversidad de representaciones de las investigadoras, en comparación con los estudios realizados en los Estados Unidos y el Reino Unido. La diversidad de las imágenes de los medios de comunicación de las investigadoras sugiere que los medios de comunicación pueden proporcionar importantes modelos a seguir para las mujeres jóvenes, alentando a las mujeres a elegir la investigación como una profesión.
Palabras clave: Carrera investigadora, medios de comunicación, Finlandia, representaciones públicas, Universidad.

INTRODUCTION

The underrepresentation of women in academia and in the scientific community, and the promotion of women in research careers have become central science policy concerns since the mid-1990s, both nationally and internationally (see, e.g., EC 2012, EC 2013; NAS 2007). The impact of the media in introducing positive role models for young women considering a career in research, on the one hand, and supporting and reproducing outdated stereotypical representations of women in science, on the other, is frequently stressed in science policy discussions (see, e.g., ETAN 2000, 60-64). In Finland, from at least the early 1980s, the influence of the media has been a matter of concern in debates on women in science; for example in 1982 a major Ministry of

Education committee report on women's research careers stated how "articles of and interviews with female researchers in different media, press, radio, and TV may have influence in creating positive role models" (MinEdu 1982).

Stereotypes of scientists and researchers seem to be learnt at a young age, and these early stereotypes show gendered patterns albeit with relatively little cultural variation. These stereotypes have been revealed in studies in which children have been asked to draw "a scientist". In an extensive cross-cultural 21 country study that mapped 13-year old girls' and boys' interests, experiences and perceptions related to science, most the children, especially in industrialized countries, drew a man, when they were asked to draw a scientist, and only few – all of them girls – drew a woman. Children's drawings often depicted a stereotypical laboratory environment, and the scientist as a bald, bearded man in a white coat surrounded by test tubes. (Sjøberg 2000, 11-12, 47). In another study, exploring stereotypes of scientists among children, only girls drew women in a draw-a-scientist test (Chambers 1983). Most young people or children have no first-hand knowledge of scientists and researchers and their work. Thus, the role of media in producing, maintaining or challenging the stereotypes of scientists is of great interest. How the media depicts women pursuing science and scientific research is of especial concern because of the male bias in stereotypes referred to above.

1. RESEARCH QUESTIONS AND CONTEXT

In this article, we focus specifically on media representations of women researchers, in a relatively gender equal and research intensive context: the Finnish society. Which kinds of women researchers are depicted in the media, and how are they represented? Are these representations gendered, and in what ways? We explore the representations of female researchers in media and focus on the print media: newspapers and magazines. TV, radio and newspapers play an important role in science information for the Finnish general public; 75 % of Finns rated newspapers as an important science information source in 2013 according to a national Science Barometer survey (Tieteen tiedotus 2013a, 2013b). The media representations of women researchers are explored by analysing person interviews with researchers in Finnish newspapers and magazines. The analysis focuses on both the social and the linguistic aspects of the interviews from a gender perspective.

Finland provides an interesting context to study the position of women in research and science, as well as the way women researchers are depicted in media. First, gender equality in the society is relatively advanced: Finland has among the smallest societal gender gaps globally (World Economic Forum 2013). Secondly, by international comparison, Finland is a highly research-intensive country, with, in an EU comparison, highest share of researchers of the overall labour force, and a high share of researchers of the overall female labour force (EC 2013). The female population in Finland is well-educated; the proportion of working age (25-64) women who have obtained tertiary education was 46.2%, which was highest in the EU in 2012 (Eurostat metadata 2013). Highly educated women are thus hardly exceptional in the Finnish society. However,

women's advancement in higher education has also been problematized as the "feminization" of academia, and "women taking over the universities" (see e.g. Husu 2007).

In Finland, women have reached top positions in universities more frequently than is the case in most other EU-countries: 25 % of Finnish full professors and 25 % of Finnish university Rectors were women in 2012, when the EU-average was 20 % for full professors and 10% of university Rectors (EU 2013). The "top of the top" positions: the University Chancellor (highest administrative hierarchy position) and Academician (highest scientific honour reserved only for 12 living scholars at the same time) had their first ever female appointments in 2000 (Turku University Chancellor Leena Kartio) and 2003 (Professor Pirjo Mäkelä as first female Academician). In 2013, three out of twelve Academicians are women. (see Academy of Finland 2013).

Women researchers' overall media visibility in the Finnish context can be estimated by the Science Barometer survey (Tieteen tiedotus 2013a, 2013b), mapping what Finns thought and knew about science and scientists. The survey has been conducted since 2001 in regular intervals with a representative sample of the national population aged 18-70. In the Science Barometer survey, respondents are asked to name a noteworthy current researcher (without giving any pre-fixed alternatives). For nearly a ten-year period 2001-2010, a female scholar, Professor and Academician Leena Palotie, a medical geneticist, held a clear top position in this name-a-noteworthy-current-researcher list. Her special position as a well-known researcher and influential public figure was also evidenced by the fact that she, and five other Finnish women, was portrayed in a personal stamp, published on the International Women's Day 2010 (see Finnish Institute for Molecular Medicine 2010). Palotie sadly died prematurely in 2010. In the 2013 Science Barometer, no women researchers reached the very top on the list of noteworthy current researchers; among the thirteen most often mentioned only three were women, and among the 36 researchers who were mentioned by more than one respondent, only four were women (Tieteen tiedotus 2013a).

2. GENDER AND MEDIA REPRESENTATIONS OF RESEARCHERS

In Finland, the representation of women researchers or women scientists in the media has hardly been studied (but see Husu & Tainio 2004), and also elsewhere these kinds of studies have been rare (see Eskola 1991; Shachar 2000; Chimba & Kitzinger 2010; Attenborough 2011; Tenglerová 2013). Marcel LaFollette analysed US magazines from 1910 to 1955 with the conclusion that if women scientists were visible in the media, they were described as unusual. They were depicted as "either subordinate assistants or 'superscientists'" (LaFollette 1990, cited in Shachar 2000, 348). Of course there were very few independent female scientists in the period LaFollette studied. Another US study by Orly Shachar on interviews with scientists in the *New York Times* column 'Science Times' in 1996-1997 explored the rhetoric used in these interviews. Women were interviewed in this column remarkably more rarely than male scientists, and Shachar observed that women scientists were described with a

personal, individualistic approach stressing less their public role as a researcher. Women were depicted in their social and cultural roles as women and individuals, who also were scientists, whereas male scientists were depicted in their professional public role. The family life of women and men of science was taken up in a very different way. In interviews with male scientists, the lack of disturbances caused by the family was presented in a positive light, as an opportunity to fully immerse themselves in their work, or their family was mentioned as a biographical footnote. Problems in reconciling work and family were not mentioned at all in the interviews with male scientists. Female scientists where expected to be excellent not only as representatives of their professions but also as wives and mothers (Shachar 2000).

A recent major study on media representations of women scientists in the UK context was commissioned by the UK Resource Centre for Women and conducted by Jenny Kitzinger and her research group at the Cardiff School of Journalism, Media and Cultural Studies (Boyce & Kitzinger 2008; Haran et al. 2008, Kitzinger et al. 2008a and . 2008b; Chimba & Kitzinger 2010). The study focused on women researchers in the SET (science, engineering and technology) fields and their representation and portrayal in the media, looking at women scientists' own views and experiences of the media; the representation of women scientists in films and television; representations of women scientists in 12 national UK newspapers over a half year period; and what science communication professionals could do to promote a more positive representation of women in the media. The scientists depicted in the newspapers were mainly men (84%, N=51). Women and men working in SET were portrayed in asymmetrical ways, especially through emphasising women's appearance and focusing on women's exceptional status. Half of the profiles of women were referring to their clothes or appearance, whereas only 21% of men's profiles. When appearance or clothes were mentioned, it was done differently for men and women, for women accentuating their femininity, whereas for men stressing the stereotypical scientist look with beard, glasses or "nerdy" style (Chimba & Kitzinger 2010).

The UK study also notes a trend of using (some) female scientists to "sex up" the discipline, by analysing in depth the media portrayal of two most well-known women scientists in the UK, Professors Kathy Sykes and Susan Greenfield (Chimba & Kitzinger 2010). A great emphasis is found to be placed on their appearance in the media, and the media discourse is sometimes explicitly focusing on these prominent women scientists' sexual attractiveness to men, in terms of "putting sex into science" (ibid., 613-614). When interviewed on their concerns of media representation, female scientists themselves took up several issues: they were concerned to be depicted as female scientists rather than simply scientists, the inappropriate attention on their personal lives, and the disproportionate focus on their femininity and sexuality (Ibid, 616). Attenborough (2011) analyses even more deeply the phenomenon of sexualizing scientists in the print media. He compared ways in which journalists emphasized a female scientist, Laura Grant, and a male scientist, Brian Cox, in the UK context, and found specific linguistic features and textual strategies used to present the scientists as sexualized. However, he also showed how the features used were different when describing the female compared to the male scientist. Laura Grant "was cast in the role of active temptress or passively tempting object", and "never anything but defined by

her body", while Brian Fox was never depicted as "the active seducer, and always [as] the innocent victim of wanton female desire" (ibid., 674). Attenborough stressed that even if male scientists can get sexualized in today's media, the process and outcome of the sexualisation is hardly the same for female and male scientists.

A more recent study in Czech Republic by Tenglerová (2013) examined representations of women and men researchers in popular Czech newspapers. Also in the Czech media, women are presented significantly less often than men; mentions of them were found to be concentrated in the back pages of newspaper content. Men were found to be presented in positions of authority significantly more often than women. The interviews rarely portrayed figures of women or men researchers but rather their work and expert comments, but in case of portraits, references to age, looks and motherhood contribute in important ways to the construction of women as exceptions in science. In the case of men, articles about researchers were often found to refer to their intellectual fatherhood in the sense of authorship and discovery; in the case of women, they thematisize only their maternal duties. The issue of children appears rarely in relation to men and if it does children are presented as an inspirational source for research and discovery. This disproportion, Tenglerová argues, leads to the fact that through fatherhood men are symbolically drawn into science and their children enter science in their pursuit, while motherhood takes women away and disengages them from science. In this way not-belonging to science and women's problematic status in science are reproduced because, due to their children, they are never able to fully devote themselves to science. Conversely, the separation of men researchers from the concerns of family life is also reproduced.

3. METHODS AND DATA

To explore the media representations of women researchers, we analysed person interviews with and profiles of women researchers in Finnish large circulation newspapers and magazines (see Siivonen 1999, Husu & Tainio 2004). We did not limit our analysis to SET researchers as the recent UK study (Chimba & Kitzinger 2010), but included in our data all interviews with women researchers, whatever their research field. We have analysed the articles both by their themes and by linguistic means applied in them. This has involved a dialogue between a sociologist and social studies of science scholar (author A) and a linguist (author B), with a shared interest and focus in feminist research and gender analysis.

In this article, we define person interviews as newspaper or journal articles that focus on the work, career or life of one specific scientist. This means that we did not explore all of those journal and newspaper texts where researchers were (often shortly) cited or interviewed, or include in our data texts including short comments by several different researchers. In addition, one additional criterion we used was that the interview text was accompanied with at least one photo of the interviewee.

Our data set consists of 107 interviews published between January 1997 and January 2014. Forty-five percent of the interviews are from newspapers, 38 percent from women's magazines, and 18 percent from other magazines (see Table 1). This

collection includes texts from different sections of newspapers and magazines, so the scope and type of the interviews varies – there are, for example, some extensive human interest interviews, plenty of anniversary and appointment interviews, and expert interviews of various kinds. The reasons why scientists and researchers are interviewed in the media are manifold. Thus also our data is fairly heterogeneous.

The sex or gender of the interviewer was not our main concern. In general, attempts within linguistic analysis to find clear differences in men's and women's ways of building a text and style of writing have fallen short; although there might be minor stylistic differences, men and women share the similar means of using language and building the text and they use these practices accordingly in respect to the genre and the aim of the text (Mills 1995, Pajares & Valiante 2001; Francis, Robson & Read 2001; Eckert & McConnell-Ginet 2003). However, there is some evidence on that female and male writers prefer different topics in their texts, for example, in educational contexts (e.g. Kauppinen et al. 2011). Thus it is interesting that in our data, 83 percent of the interviewers were female (see Table 1). Also in the twelve UK newspapers analysed by Kitzinger et al. (2008a), female journalists wrote more often about female scientists than male journalists. For example, in the articles by female journalists, 24 percent of the quotes came from female scientists but in articles by male journalists only 14 percent (Kitzinger et al. 2008a, 9-10). The vast amount of female journalists' texts in our data was to be expected in the interviews in women's magazines with mainly female staff, but the same was also the case in newspapers and magazines.

Table 1. Interviews by type of print media and by sex of the interviewer

Type of the print media	***N***	***male interviewer***	***female interviewer***
newspaper	48	11	37
women's magazine	40	-	40
other journals	19	8	12
N	107	19*	89*[1]

Although we are focusing here on person interviews with women researchers only and not aiming to compare representations of male and female researchers, we searched to assess in some way how frequent women researchers' interviews are in the Finnish print media compared to those with male researchers. Kitzinger et al. (2008a) report that in the UK newspapers there are five male scientists profiled for one female scientist. Accordingly, we followed systematically interviews with both male and female researchers during two months periods in 2003-2004 (November 2002 and February 2003) and in 2013-2014 (December 2013 and January 2014) in Finland's largest daily newspaper, *Helsingin Sanomat.* During those four months, all in all 52 interviews with researchers were published, of which less than a third (14 interviews)

[1] One of the articles was co-written by a male and female journalist.

were with a female researcher. Similar results, of women being represented in a third of the person interviews, have been obtained in a study on person interviews in Finnish and Swedish newspapers (Siivonen 1999) and in another study on magazine interviews with Finnish authors (Kivimäki 2002). Even if the data reported in the Table 2 is too small to draw overall conclusions, it illustrates a persistence of the pattern of a majority of male researchers as interviewees.

The female interviewees in our data of 107 texts range from young scholars in the early phases of their careers, and researchers in middle ranks, to professors and emerita professors. Their ages were usually reported and vary from 26 to 76. The interviewees come from a wide disciplinary spread: 38 percent are from humanities, 20 percent from natural sciences, 13 percent from medicine, 13 percent from social sciences, 7 percent from economic sciences, and only a few from theology, technology and law.

Table 2. Interviews with female and male researchers in the newspaper Helsingin Sanomat, November 2002, February 2003, December 2013, January 2014.

	Male interviewee	***Female interviewee***	***Total***
11-2002 and 2-2003	18	9	27
12-2013 and 1-2014	20	5	25
Total	38	14	52

We now present our findings in a more detailed way. First, we discuss shortly the overall frames used in the interviews. The concept of frame is used here to refer to the main way in which the researcher-interviewee is presented by the journalist as a particular type of researcher. Second, we analyse how the issues related to the family are taken up and discussed in the interviews. Furthermore, we highlight the ways in which the interviewers depicted the researchers as representatives of their gender, that is, women. In order to do so, we have analysed the characterizations of the appearance or personality of the interviewees by exploring, for example, adjectives and verbs used by the journalists. We also present some results on the science policy discourses in the interviews, related to women's position in science.

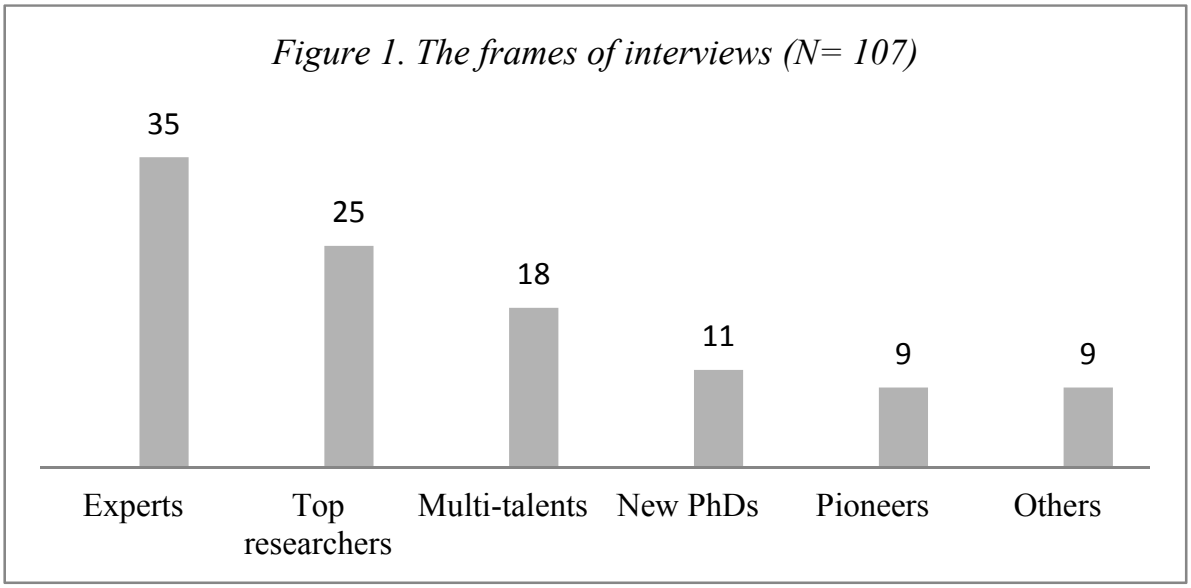
4. FRAMES OF THE INTERVIEWS

What kind of scientists had been selected to be interviewed? What kind of frames of "being a researcher" were discerned in the interviews? Previous research conducted in other cultural settings such as US (LaFollette 1990, Shachar 2000) suggested that the frames of the interviews with women researchers would include at least the frame of *Top Researcher* and probably the Assistant. Building on long-term research on gender in academia, in which some print media interviews with women scientists were collected and used as background material (Husu 2001), we also expected to find in this Finnish material the frames of the *First Woman/Pioneer* and the *New PhD*.

We identified in our material the expected types of Top Researcher, First Woman/Pioneer and New PhD, but in addition, two other major frames were discerned in the content analysis of the interviews. These we labelled as *Multi-talents* and as *Experts*, whereas the Assistant frame, found in the earlier US study, was not represented at all in our data. Thus five main types of frames of interviews were identified: *Experts, Top Researchers, Multi-talents, New PhDs, and Pioneers* (see Figure 1). The types of frames identified are labelled with initial capital letters, to indicate that these are the frames constructed in the interviews, not our own assignment. For example, the same scientist could be framed in different ways in different interviews, and for example, our type Top Researcher is one constructed as such in the interview, not our evaluation of a researcher as such.

Interviews of two types together comprise over half of the data: on the one hand, interviews with Experts, which focused more on the substance of the research of the interviewee than on her as a person; and interviews with Top Researchers ("Huippututkija"), on the other. The third largest group was the Multi-talents: they were researchers, who were clearly identified as researchers but interviewed mainly for other reasons than their research, such as publishing a well-received novel, or taking up an important position outside the scientific community after leaving an active research career. Pioneers and New PhDs were clearly discernible but less frequent interview types [2] In most cases the typification was reaffirmed throughout the text of the published interview.

Figure 1. The frames of interviews (N= 107)



[2] Seven interviews could not be placed in this classification. This was a heterogeneous group, consisting of two interviews with couples, one on feminist challenges to mainstream economics, two on specific conflicts in academia, and two on environmental philosophical issues.

5. THE WOMAN SCIENTIST AND HER FAMILY

Motherhood is often depicted to be in conflict with a career in research in public debates, but recent EU statistics estimates that both male and female researchers tend to have children more often than the men and women in the working population generally, and this is also the case for Finland (EC 2013, 101-102). The Finnish researchers' union membership survey 2010 indicated no differences in the family patterns of male and female researchers: three out of four women and men were married or lived in a registered relationship, and every other female and male researcher had children staying at home (Puhakka and Rautopuro 2010). Earlier Finnish data indicates that it is quite common for successful women scientists to combine work and family. (Suomen Akatemia 2000, Nikander 1999, 12-13), and Finnish women scientists are claimed often not to hide the fact that they are also mothers (Husu 2001, 271-272).

In our data, the women researchers were usually introduced as mothers: half of the female researchers, that is 57 women of the 107 interviewees, were said to be mothers (see Table 3). However, in the context of the interviews, what was even more usual was to introduce the woman researcher in reference to her husband or heterosexual partner or explicitly mention the lack of partner or "family" (in 60 texts). Just over one third of the interviews were written with no reference to the heterosexual relationship of the woman researcher. It was also noteworthy that in our data when relationships were mentioned, only heterosexual relationships were referred to.

Table 3. References of women researchers' couple relationships, children, birth family or other family

Relationships	***Husband /partner***	***Children***	***Family background***	***Other relatives (e.g. grand-parent, aunts, cousins)***
Heterosexual relationship	54	43	23	16
"Family"	5	4	-	-
"Not married"	6	2	3	1
No comments on partner or family	42	8	7	5
N	107	57	33	22

As Table 3 shows, in addition to the references to husband/partner or children, it was also common to mention other relatives. In 33 interviews the journalist mentions the mother, the father, or the sisters or brothers of the woman researcher. Furthermore, it was not uncommon to take up other relatives, for example, grandparents or cousins (in 22 interviews). Women researchers frequently appear to be presented as embedded in their family context.

In which ways were the marital status and family presented in the print media, including not being married and not having a "family" (meaning husband/partner and children)? In some interviews the family was even mentioned in the title of the interview. In addition, there were some interviews that had many – usually coloured – photographs of the woman researcher with her husband or surrounded by her family, as in the following examples.

1. (The best known Finnish scientist in 2001-2010, Professor and Medical Geneticist Leena Palotie; *Seura,* 40/2001; the title both in the cover of the magazine and in the interview; large photograph of the scientist with her husband)

LEENA PALOTIE, RESEARCHER OF GENETICS

EVEN TOP LEVEL SCIENCE INVESTS IN THE FAMILY[3]

2. (Doctor in Plastic Surgery at the Helsinki University Central Hospital, Sirpa Asko-Seljavaara, *Kotiliesi* 9/2001); the title:

NEW ROLE FOR TOP SURGEON

Under the above title a large photograph of the scientist, holding a baby in her arms has the following quotation as a caption: "In our family grandmother is called 'ätte' and grandfather is 'putte'."

It was also quite common to introduce the interviewee by referring to her family relationships in the very beginning of the text (see examples 5 and 15 below). However, in most of the interviews that made reference to the family, this was not presented as the main point of the interview.

Still, a closer look at the linguistic means used by the journalists reveals an interesting phenomenon. Most of the references to the husband/partner/children/family of the researcher were formed in a specific way: more or less straightforward quotations of words of the interviewee. In terms of narratology (see e.g. Rimmon-Kenan 1983), the references to the family were presented as direct discourse (DD), that is, as a quotation, or, they were presented as free indirect discourse (FID), that is, not as quotations but as a report where the interviewee's voice can be heard through the voice of the journalist. This is to be seen in the following examples:

3. (Professor of Archeology, Eva Margareta Steinby, *Helsingin Sanomat* 20.8.2000)

It is of course also fortunate, when travelling, to have along her partner Pekka Suhonen, who is an essayist and writer, and (FID) "an endearingly messy man, who lacks the gene for being well organized". (DD)

4. (Marine biologist Essi Koskinen, *Kotiliesi* 17, 2013).

"Today, marine biologist Essi Koskinen says farewell to her husband in Oulu for a week. Less than half of the fifteen years the couple has spent together they have

[3] We would like to thank Jeff Hearn who has kindly revised our translations of quotes into English. In this sentence, the scientist speaks of herself as "science".

both been at home, rest of the time apart. That does not matter since the weekends together then feel even better". (FID)

5. (Professor of Women's Studies and Anthropology, Ulla Vuorela, *Helsingin Sanomat* 2.3.1999)

"I am not married, but being an aunt, in the African sense, links me to a large family through my sisters' children."(DD) /Vuorela is a great-aunt of six children under five, and[4] the family is important. (FID)

6. (Doctor of Philosophy in Onomastics, Minna Saarelma-Paukkala, Suomen Kuvalehti 9/2013)

"Missionary work is familiar to Saarelma-Paukkala also since her parents were missionaries and because of that she was born in Tanzania. The family lived a couple of years also in London. When it was time for Minna to become a schoolgirl they moved home, into Finland and Tampere where her father acts as a vicar".

For example, extract 4 is the first paragraph in an eight-page article with several colourful photos about the biologist's life during a fieldwork period. Positioning the comment about her husband right in the beginning of the article frames the researcher as a woman and a wife. Extract 5 shows how the journalist has positioned the female professor in a family context and in the framework of motherhood even if she does not have children. The present tense of the narration marks this extract as free indirect discourse where the interviewee's voice is present. Extract 6 is an example of the practice to refer to the researcher's own father and mother; the reference is legitimated in its context with a fact that her doctoral thesis was about Finnish first names in an African area where Finns have been very active as missionaries. However, for her present profession (head of Helsinki University Calendar Office) these facts have no relevance.

As displayed in the examples 3, 4 and 5, it seems that it is significant that in the context of interviews with Finnish women researchers the references to the marital status of the interviewee are presented as the interviewee's own words. The use on direct discourse and free indirect discourse confirms that the journalist is not marked as responsible for the references to the husband – or "non-husband". On the contrary, as in these examples, the references are often marked as an issue that the woman researcher herself voluntarily takes up. Then the reader's interpretation should or could be: the family is self-evidently important to the women researchers.

6. APPEARANCE AND EMOTIONS

In his article on the profiles of two scientists, a male and a female, in the UK media, Attenborough (2011) argues that the sex of the interviewee is highlighted

[4] This section is part of the journalist's 'own discourse' as reporter (the 'narrator's discourse').

especially by the characterizations of their appearance or personality that, in his case, also become sexualized. Similar sexualisation of women scientists was also evidenced by the UK study by Kitzinger and her research group (Chimba & Kitzinger 2010). In the Finnish data, the only traces of sexualisation we could find in some of the photos of the researchers but there were practically no marks of sexualisation on the textual level. However, comments on the appearance, hairstyle or clothing which were common in the recent UK data were frequent especially in the older texts in our data. Obviously these characteristics have very little to do with the expertise or work of the researcher. Only a handful of the texts (17 texts) in our data had no references to the appearance, the clothing, or the way of moving of the interviewee. Unexpectedly, the characterizations of this kind were even more common in newspapers than in magazines[5].

The most common way to characterize a woman researcher is to present her as an extremely energetic and hard-working researcher, and this was especially common in the frames of Top Researchers and Multi-talents, as exemplified as follows:

7. (Doctor of Economics, Julianna Borsos-Torstila, Helsingin Sanomat 20.3.1999)

"The energetic doctor reads, plays tennis twice a week, and recharges her batteries with six hours' sleep".

8. (Professor of Economics, Eva Liljeblom, *Anna* 3/2001)

"Eva Liljeblom has been described as a superfast workaholic".

9. (Master of Social sciences, Head of the Nordic Institute of Africa, Iina Soiri, *Suomen Kuvalehti* 15/2013)

"[Her colleague] Peltola has learned that Iina never gets flummoxed and she never dawdles with her work. The work is always finished when it should be. [--] And in any of the seven languages she masters".

These kinds of characterizations are not necessarily gender-specific but serve the journalists' interests to present researchers more as heroines of hard work and maybe less as highly talented persons. However, women researchers were also often characterized in highly gender-specific ways[6]. We found several characterizations about the clothing, the hairstyle and/or the physique of the female scientist, as in the following extracts:

10. (University Chancellor (highest administrative university position), Professor Leena Kartio, *Helsingin Sanomat*, 20.5.2000)

"The Chancellor starting her work next August is small and delicate. She is dressed in a well-tailored grey trouser suit".

11. (Professor, Medical Geneticist, Leena Palotie, *Anna* 1/1998)

"Professor Leena Palotie straightens her electric blue skirt and conjures an

[5] Of course, in the magazines the photographs were larger and more detailed.

[6] Note that in Finnish language there is no grammatical gender, and, more importantly, only one person pronoun for the 3rd person singular.

enthusiastic smile to her face".

12. (Professor in Education, Hannele Niemi, *Helsingin Sanomat* 17.1.1998).

"The dark locked Niemi would easily pass for a delicate Spanish lady".

13. (Professor in Forest Genetics, Katri Kärkkäinen, Ylioppilaslehti 18.1.2002)

"– –", laughs the fragile, blonde woman.

14. (Professor in Obstetrics and Gynaecology, Outi Hovatta, *Kodin Kuvalehti* 6/2001)

"The tiny woman scientist even succeeded in running the New York Marathon".

There was also an abundance of verbs characterizing the way women researchers act or talk during interviews. Among these verbs and expressions were, for example, the following:

15. (Professor in Environmental Economics, Anni Huhtala, *Helsingin Sanoma*t 12.5.2002)

"Huhtala – laughs chirpily; – tinkles jollily".

16. (Professor in Folklore Studies, Satu Apo, *Aamulehti* 7.10.2001)

"The professor, smiling almost shyly, speaks hard words with a quiet voice".

17. (Doctor of Political science, Teija Tiilikainen, *Helsingin Sanomat* 8.4.2001)

"Teija Tiilikainen – answers and blushes endearingly".

18. (Professor of Physics, Hanna Vehkamäki, *Kotiliesi* 10/2013)

"The physicist's talk is measured and hands are knitting".

As the examples above show, many of these characterizations present the woman researcher as speaking not only in a lively but an emotional way. We found that nearly two-thirds of the 107 interviews included verbs or other descriptions of actions that presented the researcher as acting emotionally, and in many cases, in a stereotypically feminine way – or acting otherwise in a feminine way (see Ochs 1992, van Bezooijen 1996).[7] The use of such kinds of characterizations makes it possible for the reader to

[7] We did not set out to compare the media representations of female and male researchers, as the studies conducted in the UK and Czech contexts have done. However, a small recent sample collected from the main newspaper *Helsingin Sanomat* (all interviews with male researchers in December 2013 and January 2014) indicated that also in the Finnish context the male gender of the researcher was often underlined in various ways. There was also some indication of use of emotional verbs when describing their ways of speaking ("tries to control his laughter"), deserving further research. A medical professor and vaccination specialist was headlined as "Vaccination Man"; another was characterized as a "gentleman". A good example of these tendencies is a portrait with a retired law professor which was loaded with references to masculine gender and emotions: "the tall man is purring contentedly", "Kemppinen says and

look at the 'emotional interviewee' from the journalist's point of view. Although the texts that popularize research and science for the wider audience are today usually formulated in a non-authoritative style, the linguistic features that feminize Finnish women researchers make it possible for the reader to identify more with the voice of the 'objective' journalist than with the voice of the researcher herself.

Among the most interesting examples in our data is extract 19. Almost all the features mentioned above are present in the beginning of the interview of Heta Gylling, a Professor in Philosophy and Ethics of Science at the University of Helsinki. The organization of the text shows that the characterizations of the professor's clothing and jewellery, together with the existence of her ex-husband, are presented as the most important background information about the interviewee.

19. (Professor in Applied Philosophy, Heta Aleksandra Gylling, *Helsingin Sanomat* 22.3.2002)

PHILOSOPHER PUZZLED BY THE IDEA OF EFFICIENCY

> "Professor Heta Aleksandra Gylling wears jeans, a dark blue jacket and plenty of golden jewellery. On one of her necklaces dangles an image of Africa.
>
> Gylling's previous surname is Häyry, she is the other half of the Häyry philosopher-couple who used to pop up into publicity like a pair [of carriage horses] some years back, wearing similar sweaters, whenever and around whatever issue.
>
> The Häyrys divorced four years ago.
>
> Gylling has been appointed from the beginning of this month to the Chair of Applied Philosophy at the University of Helsinki, as the Professor in the Ethics of Science, for a five years' term".

7. EXCEPTIONAL FRAME: "ODD BIRD IN THE WORLD OF MEN"

In our most recent material, one interview with a very successful female researcher strikes out as exceptionally framed and exceptionally interesting, with its explicit and outspoken focus on the gender dynamics in research careers, and insecurities and obstacles of women researchers but also ways to reflect on, and various, even controversial, ways to tackle them. It is an interview with Physics professor Hanna Vehkamäki in a women's magazine *Kotiliesi* (10/2013), titled "Odd bird in the world of men".

The article plays, to start with, with the contradictions of stereotypes of women and stereotypes of scientists with its cover photograph, where the Physics professor is shown knitting on the deck of a ferryboat, and a photograph text underneath tells how

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keeps laughing behind his grey beard mischieviously", "man of age", "family father". (*Helsingin Sanomat Kuukausiliite* 1/2014).

"knitting and war history belong to her many hobbies". Later in the article we learn that "Hanna likes to knit the Mobius-knit, which is based on a mathematical pattern, so-called Mobius band, which German mathematicians developed at the end of 17th Century". The knitting theme is going throughout the article: "In international circles she is known as the knitting professor", we learn later, and one subheading reads "When the professor knits". One direct quote from the interviewee suggests between the lines how knitting in a male-dominated arena can diminish the threat men may experience from a competent woman: "Men do not think knitting is threatening. Maybe this is that kind of mother axis".

The gendered career obstacles described in the interview include gender bias in early expectations; the interviewee tells about the need to challenge the bias and show that she could perform as well as "the boys". Even if Vehkamäki did well in school, she understood that people thought that was so because she studied so hard, whereas boys who did well were seen as talented: "Now and then I wished I would turn to a man". As a good female student in a male-dominated discipline of theoretical physics she was different, an eyesore, independently of how she dressed or whether she wore her hair long or short. The interviewer describes: "Years in male-dominated physics groups have formed Hanna Vehkamäki to some extent into "one of the guys". She can "talk dirty" if needed". The interviewer describes how the researcher learned to drink beer so she could join after-work work discussions at the pub, and went to the sauna[8] with a group of male colleagues to get into the research networks necessary for career advancement: "She has also gone to sauna with her male colleagues. They used to discuss there who joins which research project and who will go along as an author to which article." This is confirmed by a quote in direct discourse: "If I had not gone to sauna, my career would not have gone anywhere".

Husband (professor in the same field), children and family are also commented in this portrait, partly in terms of support in career in a male-dominated field, again much in direct discourse: "My pregnancy and motherhood have meant that my male colleagues find it easier to relate to me. Maybe motherhood creates a certain Madonna effect", Vehkamäki is quoted to say, and "Many women scientists find the best support at home". This top researcher also encourages girls and women into physics: "That girls would not cope in physics is nonsense. According to [OECD] PISA studies girls have the same abilities as boys".

8. DISCUSSION

Despite the examples discussed above, we conclude that all in all, the interviews

[8]In the Finnish context, sauna has been traditionally a place for work-related informal discussions in business, politics and also in academia. Outside the family context Finns usually do not go sauna in mixed-gender groups. In work contexts, this has often meant men-only informal spaces for negotiations and interaction, from which their female colleagues have been excluded.

in Finnish newspapers and magazines generally depicted women researchers not as exceptions but in a multi-faceted and varied way. Most of the interviews suggested that a woman who has chosen a research career does not necessarily need to be an exceptional individual, devoted solely to her research work. Furthermore, the overall image of women researchers was not overtly feminized, nor was it sexualized. The frames of the interviews of women scientists could be labelled as Top Researchers, Multi-talents, Pioneers, New PhDs, or Experts. The interviewees were of different age and academic rank, with varying approaches to being a women and a researcher. The abundance of the Expert frame interviews, in which the focus was more on the expertise of the researcher rather than her as a person, suggests that women researchers appear to be accepted in the role of a public expert in the Finnish society. However, although the interviews were varied, for example, in terms of age, status, and career phase, women with immigrant or ethnic minority backgrounds were not represented at all. One reason for this is the overall small amount of researchers in Finnish universities with an international or immigrant background, compared with similar research intensive countries (see, e.g., MinEdu, 2009). On the one hand, we can conclude that the interviews presented fairly varied role models for young women considering or planning a career in research, but, on the other, the division of disciplines of the interviewees followed traditional gender patterns. The largest group of the interviewees came from the humanities, a field traditionally favoured by women.

The interviews frequently pictured women's research careers in terms of the family. This could convey a message that it is possible to combine research work and family life, and that the family should not only be seen as slowing down women's research career but can also function as a supportive resource. Similar results on how the family, partner and children are perceived by women themselves as important sources of social support in academic careers were obtained by Husu (2001, 2005) in her qualitative study on sexism, social support and survival strategies of academic women. Even taking into account that combining research career and family life is common for Finnish women (Husu, 2001, 2005), it was noteworthy how strongly the media interviews embedded these researchers in the private/domestic sphere, relating them to their partner, family and kin. They were presented not only as scientists and researchers but also as spouses and mothers or grandmothers, and placed strongly into a heterosexual matrix. Here our results resemble those obtained by Shachar (2000) in the US context.

Even if appearance and physique of the women researchers interviewed were often commented in the person interviews in a gendered way, these characterizations were not carrying such sexualized overtones as identified in media representations of women scientists in the UK according to the recent UK studies (Attenborough, 2011, Chimba & Kitzinger).

The interviews with Top Researchers and many Multi-talents were sometimes nearly breath-taking to read. In only a few of these, the Top Researcher discourse was consciously broken by the interviewees by ambivalence and paradox related to women's scientific careers. An example was the interview with Professor Päivi Voima who had received her doctorate in marketing at 25, the youngest ever in Finland:

"Young, intelligent, successful and on top of that, also beautiful. Packed together one gets a product which Päivi Voima finds sickening. That is why she does not want an interview written on her to be a success story, because 'there are edges under the surface as well'" (*Suomen Kuvalehti* 20/2002). She tells how her aim is to get rid of her "achiever characteristics" and considers the compulsion to be best as a weakness in her character and proof of bad self-esteem.

Another such interview was that with the leading fertility scholar, Medical Professor Professor Outi Hovatta,who is said also to "reveal" to the interviewer that she has to "juggle in order to cope at work". When the journalist wonders how on earth this professor and mother of four also finds time for active exercise, in addition to her demanding work, the professor replies laughing: "I don't. I have a feeling that in this phase I should clone myself" (*Kodin Kuvalehti* 6/2001).

Indeed, interviews with female researchers would potentially offer both researchers and journalists a public arena to discuss and reflect upon the conditions of women in science and gender dynamics in the scientific community. However, in the light of our data, this was exceptional and did not happen very often. Some interviews in our earlier material within the frame of Top Researcher led the reader to understand that talking about one's gender or about being a woman researcher appeared irritating and unwelcome to the interviewee. One noteworthy exception is the Physics professor Hanna Vehkamäki's recent interview in a women's magazine *Kotiliesi* in which gender dynamics and obstacles in a science career are discussed and described in a fresh and straightforward way.

Earlier research suggests that, in general, individual woman researchers rarely choose to talk about their own discrimination experiences in academia in public, partly because of fear of losing face as academics or appearing as a loser in the competitive scientific community (see Husu, 2001, 2005). Hanna Vehkamäki might have an unusually good platform to do so since her academic excellence can hardly be doubted as she is a grant recipient of the prestigious ERC, and has a permanent chair in the very male-dominated Physics Department in the most highly ranking university of the country.

Interviewing female researchers appears mainly to be a genre of female journalists in both newspapers and magazines. Our analysis shows many linguistic means with which the interviews explicitly or implicitly underlined the female gender of the interviewed researchers. In a scientific career it is brain, reason and thinking which have traditionally been considered more important resources rather than looks, dress or emotions. However, in the interviews with female researchers descriptions of appearance were often mentioned, and, rather surprisingly, especially so in the newspaper interviews. Female gender could also be accentuated by the choice of adjectives describing the interviewee, such as "chirpy" or "fragile". Furthermore, emotionally loaded verbs and adverbial modifiers were used in addition to the neutral ones, such as telling how the researcher "blushes endearingly" or "tinkles jollily" . With these kinds of linguistic devices the interviews paint a picture stressing that although the interviewee is a researcher, she is, after all, a woman with ascribed feminine characteristics. It is thus not only the substantive emphasis on the private

sphere but also several linguistic devices which contribute to gendering the representations of women researchers.

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