

Vetenskapsrådet

## A GENDER-NEUTRAL PROCESS <br> - GENDER EQUALITY OBSERVATIONS IN THE SWEDISH RESEARCH COUNCIL'S REVIEW PANELS 2016



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## VETENSKAPSRÅDET

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# A GENDER-NEUTRAL PROCESS <br> - GENDER EQUALITY OBSERVATIONS IN <br> THE SWEDISH RESEARCH COUNCIL'S <br> REVIEW PANELS 2016 

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## PREFACE

One of the Swedish Research Council's principal tasks is to fund basic research of the highest quality. Gender equality is a quality issue for the entire research system and the Research Council has a duty to promote gender equality within its own area of operations. Over the course of several years, the Research Council has built up its knowledge of how efforts to increase gender equality in conjunction with research funding can be conducted. One tool that the Research Council is using is gender equality observations.

These have been conducted every two years since 2012. The aim of these observations is to review, from a gender equality perspective, the meetings at which experts discuss applications for research grants that the Research Council has received. These meetings are a central aspect of the Research Council's research grant allocation process. The observations are part of wider gender equality efforts within the Research Council that also encompass the development of other parts of the evaluation process in order to achieve the Research Council's gender equality objectives.

Previous gender equality observations have resulted in recommendations that, together with an internal development process, have led to improvements to the Research Council's procedures. In autumn 2016, the Research Council conducted gender equality observations for the sixth time in eight review panel meetings. This was done in order to investigate whether there was further room for improvement in terms of procedures, instructions and other aspects that promote a gender-neutral evaluation of grant applications.

Gender equality in the allocation of research grants is an important objective that requires persistence and continuity. This report provides a good foundation on which to base the Research Council's future discussions and makes a contribution to the work to further develop the quality of the Research Council's processes.

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## SUMMARY

During autumn 2016, the Swedish Research Council carried out gender equality observations in eight review panels ${ }^{1}$ in order to investigate whether there is potential for improvement in terms of procedures, instructions and other aspects that promote gender neutrality in the evaluation of grant applications.

This is the sixth time the Research Council has carried out gender equality observations aimed at investigating how the processes work from a gender equality perspective. The Research Council has implemented several of the recommendations made in conjunction with previous gender equality observations. This, together with other development work within the Research Council, has resulted in an improvement to the Research Council's procedures.

In conjunction with the review of applications for project grants, the Research Council provides information to all participants in the Research Council's review process on the importance of gender neutrality in the evaluation of applications. The information is communicated both orally and in writing to the chair and members of the review panels that carry out the review of research grant applications. The report has found that the quality of the oral information is dependent on the officers being knowledgeable and well prepared.

The report asks the question whether the criteria used in the evaluation of applications contribute to the reproduction of structural patterns. One important aspect relates to the evaluation of researcher merits. The proportion of women among new PhD graduates and various employee categories at higher education institutions has gradually increased over the last few decades, and is now close to 50 per cent on average in all subjects. The one exception is the top rung of the career ladder, the professor category, where only 24 per cent of holders are women ${ }^{2}$. Viewed against this background, it is reasonable to assume that among the researchers applying for grants from the Swedish Research Council, men often have more formal merits. Some review panels place great emphasis on researcher competence in particular, which in the application is represented by the researcher's merits. The report asks the question of what effect this has on the allocation of research grants from a gender equality perspective.

The report proposes four ways of taking this further:

1. Analyse how the Swedish Research Council's instructions for the evaluation of applicant competence, in particular, impacts on the goal of gender-neutral allocation of research grants.
2. Investigate the relationship between the allocation of grants by gender and the composition of the review group, taking special account of the nationality of panel members.
3. Consider increasing the activities to encourage more persons of the under-represented gender to apply for research grants.
4. Arrange preparatory meetings for the officers, chair and scientific council representatives for each review panel with the aim of clarifying the allocation of responsibilities.
[^0]
## SAMMANFATTNING

Vetenskapsrådet har under hösten 2016 genomfört jämställdhetsobservationer i åtta så kallade beredningsgrupper ${ }^{3}$ för att undersöka om det finns en förbättringspotential vad gäller rutiner, instruktioner och andra aspekter som främjar en jämställd bedömning av ansökningar om bidrag.

Det är sjätte gången myndigheten genomför jämställdhetsobservationer med syftet att undersöka hur processerna fungerar, sett ur ett jämställdhetsperspektiv. Vetenskapsrådet har följt flera av de rekommendationer som lämnats i samband med tidigare jämställdhetsobservationer. Detta har tillsammans med annat utvecklingsarbete inom myndigheten resulterat $i$ en förbättring av myndighetens rutiner.

I samband med beredningen av ansökningar om projektbidrag lämnar Vetenskapsrådet information om vikten av jämställdhet i bedömningar av ansökningar till alla som deltar i myndighetens bedömningsprocesser. Informationen kommuniceras både skriftligt och muntligt till ordförande och ledamöter i de beredningsgrupper som utför granskningen av ansökningar om forskningsbidrag. Rapporten konstaterar att kvalitén på den muntliga informationen är beroende av att tjänstemännen är kunniga och väl förberedda.

Rapporten ställer frågan om de kriterier som används vid bedömningen av ansökningar bidrar till att reproducera strukturella mönster. En viktig aspekt rör bedömningen av forskarnas meriter. Andelen kvinnor bland nydisputerade och inom olika anställningskategorier i högskolan har successivt ökat de senaste decennierna och närmar sig nu 50 procent i genomsnitt för alla ämnen. Undantaget är det högsta steget i karriärtrappan, professorerna, där endast 24 procent är kvinnor. ${ }^{4}$ Mot den bakgrunden är det rimligt att anta att bland de forskare som söker bidrag hos Vetenskapsrådet har män oftare fler meriter. I vissa beredningsgrupper läggs stor vikt vid just forskarens kompetens, vilket i ansökan representeras av forskarens meriter. Rapporten ställer frågan vilken effekt detta får för fördelningen av forskningsbidrag ur ett jämställdhetsperspektiv.

Rapporten föreslår fyra sätt att gå vidare:

1. Analysera hur Vetenskapsrådets instruktioner för bedömningen av framför allt den sökandes kompetens, inverkar på målet om en jämställd fördelning av forskningsbidrag
2. Undersök relationen mellan fördelningen av bidrag på kön och bedömargruppernas sammansättning med särskild hänsyn till ledamöternas nationalitet
3. Överväg att öka aktiviteten för att få fler av underrepresenterat kön att söka forskningsbidrag
4. Arrangera för varje beredningsgrupp förberedande möten för tjänstemän, ordförande och ämnesrådsrepresentanter i syfte att tydliggöra ansvarsfördelningen
[^1]
## INTRODUCTION

## Gender equality observations: background

In autumn 2016, the Swedish Research Council conducted gender equality observations for the sixth time. This year, this took place in eight review panels, with the aim being to investigate whether there was further room for improvement in terms of procedures, instructions and other aspects that promote a gender-neutral evaluation of grant applications. By way of introduction, we would like to provide some background and context to this task.

The allocation of research funding is an important matter that links into Sweden's overall gender equality policy objectives, one of which is an even distribution of power and influence. Another is financial gender equality: women and men are to have the same opportunities and prerequisites with respect to education and paid work. These two goals are relevant to the Research Council, as the financing of research involves both decision-making and allocation of financial resources. Researchers awarded grants by the Research Council are given the financial prerequisites to pursue their ideas and, in some cases, this also means that the researcher is able to secure their own employment and make progress in their research career. It can also be accompanied by a certain boost to the researcher's reputation and, by extension, their influence in the field because of the high symbolic value associated with the award of research grants from a central government funding body.

The Research Council is working with gender equality in several ways and has been doing so for many years. According to its instructions, the Research Council shall promote gender equality within its area of operations and report on the extent to which consideration is given to gender-specific circumstances within its subject areas. ${ }^{5}$ The Research Council publishes annual statistics concerning the number of applicants and approved grants distributed by gender, and also publishes regular reports in which various types of quantitative analyses illustrate the distribution of research grants. The Research Council participates in international groupings focusing on issues concerning gender equality and, since 2014, has been part of the Swedish Government's effort to gender-equalise mainstream public authorities. Gender equality efforts, among them gender equality observations, have been incorporated into this effort. The Council's gender equality strategy, which is updated regularly, underlines that research benefits from the participation of both women and men and the expertise and experience they contribute. It is of great importance that the funds the Research Council awards to researchers are allocated in a gender-neutral manner. In this context, this means that the proportion of women and men who receive research grants shall correspond to the proportion of women and men who have applied. This target has been achieved many times, but there have also been times when the approval rate has differed between women and men. This underlines why it is essential for the Research Council to continue working on matters pertaining to how it can achieve a gender-equal distribution of research grants.

The Research Council has previously undertaken two studies that specifically targeted the subject area medicine and health, as this area has had more difficulty achieving the target of a gender-equal distribution of research grants. The first is a quantitative study in which the causes of a lower rate of approval for women within the field of medicine are discussed. The data used in this study encompass about 8,000 applications; the question of the extent to which women and men have their applications approved in relation to how qualified they are (measured on the basis of their academic publications) is based on 1,350 applications. One hypothesis generated by this report is that one component is given greater significance within medicine (now medicine and health) than in other subject areas, namely the rating for merits. The applicant's merits are largely measured by their numbers of publications. ${ }^{6}$ Incidentally, it can be noted that a bibliometric analysis, which was conducted one year previously, confirmed that, within medicine and health, the number of publications, together with the

[^2]journals' citation index is the variable that correlates best with rating and outcome. ${ }^{7}$ Returning to the study referred to, the authors point out that, on average, women have fewer publications than men, which is partly, but not entirely, explained by the fact that men are, on average, at a later stage of their career. ${ }^{8}$ The report's authors argue that criteria which may appear to be neutral, such as the merits rating, do not simply reflect structural patterns, they also potentially reinforce them. The authors challenge the Research Council to conduct an ongoing debate about how the evaluation criteria affect different groups of applicants. ${ }^{9}$ In the present report, we will be returning to the question that has been posed, namely: Do the set criteria and indicators contribute to reproducing structural patterns, with specific reference to the issue of merits? What this is alluding to is the Research Council having to deal with a gender inequality that exists within academia, where the majority of professors are men. How the issue of merits is dealt with in the Council's evaluation processes is one question that is of relevance to a gender equal allocation of research grants.

One further study specifically focused on the subject area of medicine was conducted in order to investigate whether there are differences between how women's and men's independence is assessed by the reviewers. ${ }^{10}$ This studied the written statements ${ }^{11}$ that were submitted as part of applications for starting grants to young researchers within medicine and health in 2011. According to the instructions for the subject area medicine and health, which the reviewers are to read prior to assessing applications, independence is one aspect of the applicant's merits. The study concludes that within the group of applicants who the reviewers did not want to recommend for approval, the issue of the applicant's independence was discussed more frequently when the statement concerned women's applications. ${ }^{12}$ The Research Council's gender equality observations confirm the observations that the issue of independence is more often problematised when reviewers are evaluating women's applications. ${ }^{13}$

## Gender equality efforts in the drafting and implementation of previous recommendations

The Research Council continuously develops the format for the evaluation processes. An internal programme to develop the Research Council's expert assessment, among other actions, is taking place in 2017. ${ }^{14}$ The intention of gender equality observations is to support the Research Council's work in this area. Previous reports, as is the case for the present one, contain recommendations for the Research Council, several of which have contributed to improving the Council's processes. Below are some examples of how the Research Council is working with gender equality in the review processes; the footnotes contain references that describe if and when there has been a recommendation concerning this procedure, so as to provide some examples of how recommendations from the gender equality observations have been implemented.

The Swedish Research Council provides information to all those who participate in its evaluation processes about how important gender equality is to the evaluation. This information is communicated both in writing and orally. The written information is proved in an instruction booklet. Each subject area has specific instructions for reviewers, all of which contain the Research Council's gender equality strategy as an appendix, with several

[^3]of them also containing further information about gender equality. For example, the instructions for reviewers within medicine and health states that "as a reviewer, you shall take into account a gender equality perspective in all aspects of your assessment and the group shall consider this specifically when drawing up the ranking list for research project grants, nomination of starting grants and grants for half-time positions in a clinical research environment" ${ }^{15}$ Furthermore, gender equality is addressed under several headings; for example, it is stated that gender equality aspects shall be commented on in the report the reviewers submit to the Research Council, that the applications that remain following the sifting process should reflect the original gender balance of the original pool of applications, and that when the results of the evaluations are presented to the board, if the outcome is not gender-neutral, a detailed plan shall be drawn up that shows how they intend to correct the differences. ${ }^{16}$

The oral information about the Research Council's gender equality objectives is provided to the review panels by officers from the Research Council in conjunction with various forms of preparatory meeting. For example, officers always include an item about the importance of gender neutrality in the evaluation during review panel meetings. ${ }^{17}$ In addition, many officers show a film about "unconscious bias" that has been produced by the Royal Society. ${ }^{18}$

The roles of officers (administrators and research officers), chairs and the review panels' members (reviewers) have in many cases been made clearer. ${ }^{19}$ More detailed introductions, case-based workshops and/or training in gender equality have been organised for various panels. ${ }^{20}$ The importance of the training taking place at an early stage, before the researchers begin reading and assessing applications, can be noted here. The Research Council has chosen to emphasise the chair's responsibility for how meetings are conducted. ${ }^{21}$ Members who participate in the Research Council's review panel meetings are placed around a table during the majority of meetings, with the aim of creating a good conversational climate. In the recommendations from the report from 2015, it is suggested that these placements be made strategically. In this context, "strategically" means that consideration is given not just to gender, but also to other aspects such as the reviewers' experience, their geographical origin and any cultural/linguistic distance. ${ }^{22}$ One critical aspect that has been noted in previous reports is that individual reviewers share information with each other that is not to be included in the evaluation ("informal information"). This matter is now being addressed as a point of information in which the Research Council indicates what type of information must not be conveyed during or in conjunction with the meetings. This is to prevent inaccurate information or unconfirmed information about the applicant or research team having an impact on the evaluation. ${ }^{23}$ The ratings are "calibrated" in advance of each meeting in a process that involves the research officer presenting a graph of how the reviewers have used the rating scale ahead of the review panel meeting, with the intention of reminding them that the rating scale is not a tool that is used in exactly the same way by all reviewers; a recommendation that was issued in the report from 2013. ${ }^{24}$

[^4]Taking everything into account, the processes have been formalised, which, according to previous gender equality observations, can contribute to transparency and to equal and gender-neutral evaluations. ${ }^{25}$ Transparency means that evaluations are based on clear indicators that give them equivalence, not on judgements in which the indicators are divergent or even unknown, with different metrics being used for women and men, or in which informal information is used as an aspect of the application. ${ }^{26}$

## On gender equality and equality

The focus of this report is gender equality. The intention is to investigate whether men and women have the same prerequisites and opportunities to obtain research grants. However, the question is not disengaged from the broader concept of equality. Gender is not the only factor that can influence an evaluation process; other relationships involving superiority and subordination between different groups in a community can have an impact on the evaluation. For example, these can be the other legal grounds for discrimination, i.e. ethnicity, transgender identity or expression, religion or other belief, disability, sexual orientation and age. ${ }^{27}$ But this can also pertain to other factors such as academic rank, membership of a particular research discipline or school of thought, university affiliation, geographical origin or language. All these factors interact with one another and it is rarely possible to examine one category without taking others into account. The project group has been aware of this and has attempted to take into account how categories other than gender can also lead to evaluation bias and/or the creation of hierarchies.

Regardless of their gender, all members carry with them preconceptions about gender and other relationships involving superiority and subordination between different groups. Men and women who apply for research grants and who do not belong to the academic norm (or the conventional view of who a researcher is) could be disadvantaged if such notions are expressed in, and have an impact on the process. This means that all those who participate in the evaluation of applications have a responsibility to contribute to ensuring the process works well by adopting a reflective and critical approach to the task.

## Gender equality in the academic sphere

The norms, preconceptions and prejudices that exist in society are reflected and reproduced in all social contexts. They occur in all types of meetings and can be expressed either explicitly or in more subtle forms. Some norms and preconceptions can be more or less specific to the academic culture and/or the Swedish context. ${ }^{28}$ The academic culture may, for example, be coloured by historically male-coded forms of knowledge, use of language and hierarchies of subjects. At the same time, shedding light on possible gender inequalities in the academic sphere might challenge academia's self-image of objectivity and meritocracy. The presence of such a tension in academic contexts has been previously described by others. ${ }^{29}$

[^5]${ }^{26}$ An analysis that also emphasises transparent evaluation processes is Gender and Excellence in the Making, European Commission, DirectorateGeneral for Research, EUR 21222, Luxembourg, 2004, pages 29-32. Five recommendations are issued in this report. A general recommendation is to finance research into how different disciplines differ from one another, epistemologically, nationally and internationally. Another concerns giving more attention to interdisciplinary research that implicates a gender perspective. A third is to demand gender equality in networks that are financed by the public sector. A fourth is to conduct training programmes concerning gender equality directed at relevant actors, which is to be designed by experts in the area and, furthermore, to develop a written text about how gender bias can affect evaluation processes. A fifth recommendation is to create transparent evaluation processes in order to minimise gender bias.
${ }^{27}$ Swedish Discrimination Act 2008:567. Read more on the Equality Ombudsman (DO) website: www.do.se
${ }^{28}$ Dold könsdiskriminering på akademiska arenor - osynligt, synligt, subtilt, Swedish National Agency for Higher Education's Report Series, 2005:41 R
29 "The notion that Sweden is gender equal, together with confidence in academia's meritocratic system, means that women and men do not notice that their conditions in academia are power structured" - Kokbok för en jämställd akademi, Anna Gatti, SULF's text series XXXIX, p. 13.


#### Abstract

"Research on academia's culture and norms primarily moves on the macro level and analyses the dominant/superior academic culture and norms from a critical gender perspective. The tension between academia's hierarchical and male-dominated culture and the notion of academia as a gender-neutral sphere - or a culture without culture - where objectivity and meritocracy prevail, has been studied both nationally and internationally. In Sweden, Jordansson and Thörnqvist, in their empirical study of the introduction of the Tham Professorships, have been among those to describe how academia resists political attempts to increase gender equality in their own organisation. By comparing this reform of "alternating women" in politics, Thörnqvist sheds light on one of the foundations of academia's self-perception - meritocracy is seen as an objective system that does not favour or disfavour people on account of their group affiliation, but rewards actual knowledge, skills and intelligence. Besides this, the results of science - knowledge, explanation, understanding - are also independent of the researcher, and there is thus no need for the representativeness of academic staff. Attempts to problematise this assumption meet with resistance, regardless of whether this comes from academia itself, from the supposedly uncomprehending academic bureaucracy or from politics., ${ }^{30}$


The same tension can exist when demands for gender equality are placed on evaluation processes that are based on peer review and where there is a notion that objectivity and impartiality already exist.

The Swedish Research Council's gender equality strategy states that the "primary objective of the Swedish Research Council is to allocate funding to research of the highest scientific quality and that best promotes renewal. Achieving this objective requires impartial evaluation of grant applications. Impartial evaluation implies gender neutrality; that the Swedish Research Council supports the best researchers, regardless of gender. ${ }^{, 31}$ Here, there may be a conflict between what those involved perceive to be impartial and gender neutral and how norms and preconceptions are actually produced and reproduced in the evaluation process. Consequently, we argue that a critical approach and a gender equality perspective should permeate the entire evaluation process, which in turn requires knowledge.

## Method

The following section will describe succinctly the background and procedure used in the methodological effort made in the present analysis. The choice of method should be looked at in the context of the statistical followups and quantitative analyses the Research Council conducts. Gender equality observations and statistically focused follow-ups and analyses provide a broad picture of the state of gender equality and research financing, together constituting a central tool to use when implementing the Research Council's gender equality strategy. The observational studies look in more detail at a specific aspect, namely the review panels' meetings, which are a central part of the process that are decisive in terms of which projects receive support.

In brief, the evaluation process starts with the researcher sending in an application for a research grant to the Research Council. To evaluate the quality of these applications, the Research Council engages the services of researchers who are prominent within their respective fields. The researchers who are to review the applications are appointed primarily by the Research Council's scientific councils and committees. ${ }^{32}$ The researchers are divided up into review panels, each focusing on a different subject area. When the review panels meet, the researchers have read through the applications that they have been asked to evaluate in accordance with the Research Council's instructions. Several review panels hold an initial meeting, at which the panel agrees on which applications are of the lowest quality and will thus not be discussed further. These are sifted out following a brief discussion and the applicant is given a summarised rating and a standardised opinion. Other

[^6]applications are dealt with during a meeting at which the entire group comes to an agreement on an opinion that includes a numerical rating and text for each application. At the end of the meeting, the applications are ranked into the order in which the group would like to recommend them for grants from the Research Council. The meeting is led by a chair or a vice chair, both of whom are researchers. The other researchers are reviewers. Two officers from the Research Council participate, one research administrator, who has administrative responsibility, and one research officer, who often holds a PhD in the subject area in question. In several subject areas, a representative of the scientific council/committee in question also participates.

## Observation as a method

In this study, we have used participatory observation as a method by which to gather information about how the Research Council's review panel meetings function. This is a method that allows the observer to capture phenomena, language, conversational culture and the group's social interaction by participating in a group's activities. The method can capture discrepancies between what we believe or say we are doing and what we actually say and do. There are challenges involved in the use of this method; memory is selective, as is our perception, and there is always a risk of interpreting something subjectively or incorrectly. Seeing patterns in what we are accustomed to and familiar with is another difficulty.

The observation phase is followed by an analytical phase in which recurring themes in the data collected are identified, but an initial analysis is already taking place during the observation process as the observer makes notes that are reflective as well as being descriptive. The final phase involves a text being created in which identified and recurring themes together form a coherent narrative.

In the qualitative approach we use when we make gender equality observations, one of the basic premises is that all actors' actions are dependent on how they understand and ascribe meaning to the instructions and the situation they encounter in their assignment. For example, the reviewers must interpret the instructions they are provided with by the Research Council. Individuals' interpretations and use of the criteria, as well as the dynamic within the review panel, are therefore central to the outcome.

We are not claiming that the observations we make in a selection of the review panels can be generalised and applied to all panels. Nor do we aim to provide evidence of causal relationships. The aim is to produce data to use in discussions and learning that lead to improvements in the quality of the process.

## Procedure

The gender equality observers have been working on the basis of a set of instructions. One of these instructions is that the observer presents and explains to the panel they are tasked with observing what the aim of the observations is, namely to develop the internal processes in order to achieve the objective of a gender-equal distribution of the Research Council's research grants. While the observations are being made, the observers have not intervened in the discussions or provided comments about the reviewers' work so as to minimise the observer effect. However, the gender equality observers need to be in the room and, normally, to sit at the same table as the chair, reviewers, officers and, where applicable, representatives of the scientific council in order to monitor the conversations. Naturally their presence is evident to those who are participating in the meeting and who know they are under observation. The alternative - not informing the participants that the observations are taking place - is deemed to be ethically unjustifiable. The gender equality observers have noted their observations with the help of a list or a template based on studies from previous years. On the whole, this has involved capturing which indicators have been used to evaluate the research applications and how the processes have worked.

In 2016, four observers participated, three of whom are officers from the Research Council and one from a Swedish higher education institution. The latter was based on the fact that the gender equality observations
conducted by the Research Council initially, in 2008, 2009 and 2011 were performed by officers from this institution. ${ }^{33}$ Since then, the Research Council has taken over leadership of the gender equality observations, but has chosen to keep one observer from the original group of observers. The Research Council believes it is important to keep one external participant in the observation studies, as the Council is using the gender equality observations to audit its own operations. A reference group was also tied to this assignment; all members of this are employed by the Research Council. The group met regularly and had the opportunity to provide their points of view about the process and about one or more draft versions of the report.

## Selection

In the spring and autumn of 2016, four gender equality observers monitored the evaluation work of eight of the Research Council's 56 review panels, which are tasked with assessing applications for research grants. Half of the eight panels observed were within the subject area of medicine and health, one panel was within natural and engineering sciences, one within humanities and social sciences, one within educational sciences and one within development research. The justification for having more than one group covering medicine and health is that this subject area has found it more difficult than others to achieve the objective of a gender-equal distribution of research grants. The selection of the other review panels was made with the intention of obtaining a spread across various subject areas.

The observers studied the same data and materials as the members of the review panels. The materials that formed the basis of the analysis consist of these data, and of notes and measurements made by the observers during the review panels' meetings. The observers participated in all meetings that the selected review panels have held.

## Privacy and ethics

At the beginning of the review panel meetings, the panel members were informed about which type of information would be collected, what this would be used for, and they were also promised anonymity. Anonymity is important in order for the reviewers not to feel inhibited. The intention is to audit the Research Council's processes, not individual members.

Details concerning the review panels and members have been omitted from this report in order to maintain anonymity. With one exception, the quotations were reproduced in Swedish in the original version of this text so as not to provide hints as to which panel the statement has been taken from, and gender is not revealed if it does not have a significance to the context, being hidden through the use of gender-neutral pronouns.

## The method for measuring time spent speaking

The observers used the mobile phone application "Time To Talk" to measure time spent speaking during the meetings. The number of participants at each meeting distributed by gender is entered into the application, which then registers the time spent speaking for each group, also expressed as a percentage of time spent speaking for each gender. The applications functioned variably during the meetings but were good tools with which to gain an impression of the distribution of time between women and men.

[^7]
## Gender equality observations in other and similar contexts

The Research Council's gender equality observations have been disseminated both within and outside Sweden. The Council has received invitations to conferences, both domestically and internationally, at which the authors have been asked to speak about the results, but also, upon request, to meet several research councils and representatives of higher education institutions in order to talk about not just the results, but also the methods we use. We can conclude that there are now other funding bodies that either use or recommend observation studies. A study published by the Swedish Agency for Economic and Regional Growth, a film the ERC has posted on its website ${ }^{34}$ and a research report that shows there are now others who are using or recommending the use of gender equality observers, or are reusing the results generated by the Research Council's gender equality observations, are presented below.

In 2015, the Agency for Economic and Regional Growth published a report that bears similarities to the Research Council's gender equality observations. The object of the study is business financing among publicsector funding bodies, and the method includes using observations of funding bodies' evaluation and decisionmaking methods. Much like the Research Council's studies, the results show that unconscious preconceptions about the capabilities of women and men can influence evaluation processes. Some examples are that the evaluators have more or less unconscious preconceived ideas that women who run companies are cautious, don't dare to make investments that are too large, only need small amounts of funding and operate in the wrong industries that are not fundable and lack growth potential. Men are presumed to dare to invest, need large amounts of funding and operate in the "right" industries that are fundable and have growth potential. In actual fact, there are no differences in the size, growth, performance level, financial risk or ability to pay. ${ }^{35}$

The ERC hosts a film about gender equality and evaluations on its website. The film illustrates a recruitment process, but what appears in the film is also applicable to other processes involving the evaluation of academic qualifications. The Research Council's reports from 2013 and 2015 are two of the several texts cited as sources. In the film, a chair leads a meeting in which three people discuss the applicants' qualifications. Evaluation of women's (lack of) independence, how women's collaborations can be assessed as signs of weakness, how informal information can have a negative impact for women and the problem of references are among the aspects covered. In the film, the chair is conscious of the pitfalls that can hamper an objective evaluation and applies this knowledge to the evaluation process in an exemplary way. In this respect, the film provides instruction about how a chair can deal with situations that can potentially arise in processes such as this and, in this way, is a support for those who are going to participate in the evaluation of applications to the ERC.

In a project financed by the European Commission's seventh framework programme, a group of researchers have studied recruitment processes within academia from a gender perspective and have proposed that the higher education institutions conduct gender equality observations. The report from 2015 is formulated as a handbook. The recommendations the authors make include several that are also applicable to a research council, for example the importance of evaluations being based on specific criteria, and these criteria being used in an equivalent manner for all applicants. One recommendation is to create an open discussion climate in which the expertise of all participants in the meeting contributes to a good process. Furthermore, it is recommended that the evaluation groups contain both women and men. The report differentiates between two types of bias: one that is related to the process, and one that is related to the criteria. The latter pertains to the fact that the higher education institution uses metrics that can create barriers for women, for example the use of the international mobility metric. The report recommends the use of gender equality observations in evaluation

[^8]processes and proposes gender equality training for all those who participate in recruitment processes. ${ }^{36}$ In an interview with one of the researchers behind this report, Minna Salminen-Karlsson, it emerges that in a review of seventeen advertised posts she has conducted, she found various examples of how women had been disadvantaged in the processes. For example, this had been done through irrelevant personal information having been conveyed, without there being an equivalent in the opinions about men who had applied for the same post. The opinions concerning women's qualifications were also marred by simple calculation errors, academic publications were called reports, and there were lists of qualifications that women were lacking, which were not found in the opinions concerning men. ${ }^{37}$

[^9]
## OBSERVATIONS

## Roles and group dynamics, general description

The eight panels observed in 2016 generally function well. The panels were made up of both women and men, and the distribution between the genders was even; neither gender constituted less than 40 per cent of members, which is consistent with the Research Council's gender equality strategy. ${ }^{38}$ Men were somewhat more frequently the chair (five), while more women than men had the role of vice chair (five). The meetings were characterised by open and constructive discussion, in which the combined expertise of the panels was utilised, which is a basic prerequisite for a good evaluation process. The positions often varied in terms of who argued in favour of a higher grading, or who argued for a lower one. The positions in the panels were thus often fluid and not set in stone, either by gender or academic position. On a few occasions, the panels actively turned to the person with the most knowledge and experience within an area, and then also took more account of that person's judgement and expertise. The international reviewers more frequently raised matters of principle and questions about rules than others. In general, the members were attentive and inclined to comply with the Research Council's instructions.

Each of the chairs led the meeting in an adequate manner, was structured and ensured that the panel was given a good work situation, conducting the meeting in a systematic and time-saving manner, which is of great importance for content, quality and process. This also contributed to a good tempo and even energy levels during the meeting. Creating energy and focus throughout such long meetings is a challenge in itself. One chair welcomed the reviewers on behalf of the Research Council. The chair made it clear that, as chair, she/he represented the Research Council. The same chair was careful to comply with the rules and guidelines and often used expressions such as "we at the Research Council".

In three of the panels observed, the chairs had double roles: they were to act as both chair and reviewer, i.e. both lead the meeting (dominate it in a positive sense by making decisions concerning matters such as how a discussion is to be summarised), and be one of several reviewers of a number of applications. This was perceived by the gender equality observers as sometimes difficult to manage. We noted that the chairs took up a relatively large amount of space in the discussions about individual applications, which was probably owing to their authority as chair, even if their role at that point was specifically that of a reviewer.

In several subject areas, a representative from the Research Council's scientific council or committee took part in the meetings. ${ }^{39}$ The attitude of these representatives varied between individuals, from simply listening and taking notes, to actively participating in the discussions. In between the two extremes were those who actively informed and reminded the members about terms and conditions and working practices. The scientific council representatives are skilled and well informed, but one took it upon her/himself to adopt a slightly larger role during the meetings that was reasonably intended. There were also one or two occasions on which the scientific council representative asserted rules and principles that were not consistent with those conveyed in the instructions for reviewers. In one group, the evaluation and feedback discussions at the end of the meeting were dominated by the scientific council representative, which meant that the members and the Research Council's staff were silent while the representative put forward her/his own comments and arguments.

[^10]The Research Council's officers generally provided introductory information to the review panels in order to clarify the process. Gender-related issues were highlighted in a satisfactory manner. It was also good that the Council's staff emphasised issues concerning equal time to speak, respect between members and interaction within the group as important factors for creating good processes. The research officer or administrator's role is to be knowledgeable about the Research Council's regulations and guidelines, in order to enable them to react to questions and situations that relate to this field. Or, as expressed in the instructions for reviewers for medicine and health, to maintain, together with the chair, the scientific council's and Research Council's policy in the review process. ${ }^{40}$ Nevertheless, the gender equality observers noted that the officers sometimes refrained from expressing themselves or reacting to relevant questions or events. In other cases, the research officer or administrator was well informed and responded knowledgeably to many questions. One research officer intervened forcedly when she/he deemed it was necessary.

The gender equality observers interpret the differences as due in part to the fact that the level of knowledge and ability to support the evaluation process differed between the various officers, and in part to it not being selfevident who was to act, respond to questions or make comments: the research officer, the administrator, the chair of the meeting or the representative from the scientific council. This lack of clarity may have meant that an officer was less willing to take the floor out of concern about encroaching on the chair's area of responsibility. One observer also perceived a certain level of fatigue at the end of the meeting that may have contributed to reduced activity.

## Placement in the room

All but one of the meetings used table placements. Normally, men and women were placed on alternate chairs. When the review panel consisted of seven Swedish and one Norwegian reviewer, the latter was placed close to the chair, which is consistent with the recommendations issued in reports from previous gender equality observations. In one case, the chair was placed such that it made it more difficult for her/him to interact with the panel.

During one meeting, there were no nameplates, and no plan for where the reviewers were to be placed had been drawn up in advance. One member asked the question why the group had not been placed at the table and why there were no nameplates. The chair's response was that it was a conscious attempt not to use table placement. The women and men sat down, with one exception, on separate sides of the table. On more than one occasion, members had difficulty remembering each other's names. By day two, two people had changed places (for unknown reasons). This led to a better mix between women and men in the table placement.

## Members' status

The members' status can differ, although many of them share the title professor. They come from different higher education institutions, which may have different statuses, they represent fields of research that may have different statuses and, as a result of their personal qualities, may be more or less dominant during the meeting. If the members' status or personal qualities have an impact on the process, for example through some dominating the meeting, while others find it difficult to express their opinion, this can mean that the expertise of the entire panel is not utilised and that the quality of the evaluations is poorer.

In three of the eight groups we observed, we were able to see that there were reviewers who, for various reasons, were perceived to have a higher status than the others. In one of these, there was one person who had previously held the role of chair. They positioned themselves in a manner that was different to that of the other members and got their opinions across more frequently than others, who appeared more experienced and knowledgeable. This indicates that it may be difficult to use people as reviewers in the evaluation process if they have previously held the role of chair. In two of the panels, there was someone to whom the others often

[^11]referred, with comments such as: "I agree with $x$ ", "as $x$ just said". The people in question, both men, kept a relatively low profile during the meeting, but still had an impact thanks to the other members placing great emphasis on their views. In one panel, this person was consistently more critical and often evaluated the applications lower than did the other reviewers. In many cases, reviewers who do so are willing to adjust their ratings upwards without a great deal of discussion, but that was not what happened in this case.

On one occasion, there was someone who expressly perceived their own expertise as lower than that of their other reviewers. This was a member who apologised because it was her/his first year. This person emphasised that they would do their best to live up to expectations and hurriedly introduced themselves so as not to take up time. The same person did not participate in the more general discussions; however, she/he was the reviewer who made the longest presentation about the applications she/he had read.

## Time spent speaking

All in all, the time spent speaking distributed by gender varied between the review panels. In some groups, the proportion of time spent speaking was larger for women than for men, while in others the opposite was true. There were both low-key and domineering members among both women and men. The observers were not able to see that gender had an impact on the time spent speaking in the panels observed.

During two meetings, the gender equality observers noted that men's time spent speaking increased during the open discussions, for example the introductory and concluding parts of the meeting, as well as in conjunction with the ranking. Women's measured time was instead greater during the part of the meeting during which the reviewers spoke in turn about an application. In one other group, this relationship was exactly the opposite. Accordingly, one conclusion may be that the structured allocation of the floor is important to keeping the time spent speaking equal between members who find it easier to take the floor when it is free, and members who prefer to express themselves during the more structured part of the meeting.

## Evaluation of applications and applicants

Each application for a research grant is evaluated on the basis of four criteria: novelty and originality, scientific quality, the applicant's merits, and feasibility. With the exception of the feasibility criterion, a seven-grade rating scale is used. Feasibility has a three-grade scale. The evaluation of these criteria forms the basis of an overall rating for each application, which is also on a seven-grade scale. These criteria and rating scales are shared by all scientific councils. Instructions concerning the weighting of the various criteria should be given in relation to one another and about how the panels are to weight the ratings when they provide an overall rating differ between the various subject areas. A common feature is that the majority emphasise that the overall rating is not an average value or a sum of the constituent evaluations.

The instructions for reviewers within the subject area humanities and social sciences stress that the aim of the criteria is to remind the reviewer to make a comprehensive evaluation, but it is also made clear that the relative weighting of the criteria may differ from application to application. ${ }^{41}$ The instructions for reviewers within the subject area medicine and health state that in relevant cases, the process of arriving at an overall rating may involve weighting up one or more criteria, but normally the focus is to be on the evaluation of the projects scientific quality. One exception is grants for half-time positions in a clinical research environment, where the applicant's merits criterion is to be given more weight in the overall rating. ${ }^{42}$ In the area natural and engineering sciences, it is recommended that the scientific quality and the applicant's merits are to be given the greatest weighting, but that the reviewers are also to take into account novelty and originality, without this being given the same weighting as scientific quality or merits in the overall rating. ${ }^{43}$ The subject area educational sciences

[^12]states that the criterion the project's scientific quality is decisive to the overall rating. Aside from this, the criterion novelty and originality is to be weighted highly. ${ }^{44}$ The subject area development research states that the project's scientific quality is the criterion that is weighted more highly. ${ }^{45}$

The gender equality observers noted that the reviewers in the panels that were observed are deeply engaged and have a strong desire to attempt to create a fair system during meetings. We provide an account below of how they dealt with the task they have to undertake, that of collectively finding solutions to the problem of how to weigh up the ratings from the various criteria in order to arrive at an overall rating.

## Publications as an instrument for assessing merits

It has emerged from previous gender equality observations that discussions concerning merits and qualifications take up more time during meetings concerning applications within medicine and health than in meetings concerning applications within other areas. As stated in the introduction, the Research Council has come to similar conclusions in, for example, a quantitative analysis that concluded that the rating for merits was given greater importance for applicants within medicine (now medicine and health). ${ }^{46} \mathrm{~A}$ bibliometric analysis confirmed the report authors' results. ${ }^{47}$ In the light of this, a possible recommendation is that the Research Council analyses how evaluations of researchers' merits affects the allocation of research grants between women and men, in particular within the subject area medicine and health, which has more difficulty than other areas in achieving the objective of an gender-equal distribution of research grants. ${ }^{48}$
"Merits are not to guide the evaluation." This statement was repeated several times by the representative for the scientific council for medicine and health who participated in the two-day meeting: "You are to use novelty and originality and scientific quality as a basis, that is where the emphasis shall lie". In spite of this instruction, the researcher's merits were still referred to in the form of the content and length of the publication list, often by two of the panel's reviewers. The applicant is preferably to be the "first author" or "senior author" in order to be considered independent or sufficiently merited. The journals that are cited also have a high "journal impact factor". Other reviewers on the panel in question placed less weight on the researchers' publications, and emphasised the application's scientific quality or novelty and originality, in accordance with the instructions from the scientific council's representative.

At the end of the meeting, when the members were invited to rate and put forward any critical points of view about how the evaluation process has functioned, two members each addressed the issue that the publication list is often cited and stated their opinion that this is, for many reasons, a risky way of evaluating applications. One reviewer gave the example that the group might miss research "that may achieve Nobel Prize level" if the members place the emphasis on those who have the most merits. They also noted that large research teams publish many articles, while smaller teams publish fewer. The metric "the extent of the publication list" is therefore not fair. The reviewer in question argued that the researcher shall have the right merits, not the most merits.

Other representatives of the scientific council for medicine and health did not put forward the same principle as referred to above to the groups that they were observing. In these groups, the evaluation of the researcher's merits was given more weight and the criterion was normally synonymous with an evaluation of the balance between the number of publications and the impact factor of the journals the researchers had published in. Another common method used to assess and measure merits was for the reviewers to look specifically at who

[^13]was the "senior author" of the articles cited by the researcher. As there is probably an association between being senior author and professor, this may lead to men being favoured by the system, as the majority of professors, particularly older professors, are men. Merits were also given a central role in the panel that dealt with applications for natural sciences and humanities, in accordance with the instructions for this area.

One vice chair of a review panel within medicine and health stated that when the panel felt they lacked sufficient expertise to assess the scientific quality of the application, they usually allowed the merits to be decisive, which was, in reality, tantamount to the group measuring publications on the basis of the impact factor of the journals and the extent of the publication list.

Among bibliometrists, there is criticism that funding bodies and other users use journals' impact factor in order to measure research quality. Even though a journal with a high impact factor publishes articles with a high average citation level, it is uncertain whether an individual article published in the same journal will be or is highly cited. The citation frequency for individual articles in a journal has a wide spread with a skewed distribution. A few articles are widely cited, while most are cited infrequently or not at all. ${ }^{49}$

## Citation data

In one review panel, a member referred to the citation data for certain applicants' publications and also to researchers' "h-index". ${ }^{50}$ This person had calculated the researchers' $h$-index for the applications they were to present at the review panel meeting. On one occasion, the same reviewer asked the question whether the extent of the publication list was an accurate metric for assessing research quality, a measure that others in the panel were using. This took place in conjunction with a longer discussion of one applicant's publications, in which the number of articles had been central. In response to the conclusion that the applicant had relatively few publications, the member was able to argue that they had a large number of citations. It was beneficial to the applicant in this case that the number of citations could be contrasted with a publication list containing few items, but it can be questioned whether it is reasonable for the panel to have had access to citation data for some applications but not for others. This means that the evaluations were based on divergent data. We also do not know how individual reviewers in the review panels calculate the number of citations. Information about the methods the reviewer used was not provided in the case in question, nor was this question asked. In this way, an element emerged in the evaluation process that was not transparent.

Bibliometrics are effective metrics that can be used on large subjects, such as groups of researchers, higher education institutions and countries, but many bibliometrists are critical to researchers using them as part of their role as reviewers, as this often means that the calculations are performed in a simplified way and are thus not reliable. ${ }^{51}$ The Research Council's own guidelines state that the Council is restrictive in terms of using bibliometric comparisons between individuals, and the h -index or similar indicators should therefore not be used. ${ }^{52}$ In this respect, any information provided to officers and reviewers should be made clearer about how bibliometrics are to be used, or not used, when reviewing applications. In addition, differing principles are applied in different subject areas.

[^14]Within natural and engineering sciences, researchers are told to append data concerning citations to their application and are given instructions about how this is to be done. ${ }^{53}$ This may be beneficial for women; there are studies indicating that women generally publish fewer articles than men, but that this difference between the sexes decreases or even disappears if you calculate the number of citations or downloads of the articles. ${ }^{54}$

## Varying evaluation criteria

## Preconceptions about gender

Below follows some examples of how preconceptions about gender can be brought along into the evaluation processes, for example in relation to leadership and independence.

It was uncommon, but on a few occasions reviewers discussed female applicants on the basis of their presumed capacity as leader of a research project. "Will she cope with it?" "Can she manage a group?" "Has she led a group before?" The observers did not hear questions of this type being asked about men.

It is essential that the evaluation process is transparent, as this reduces gender bias. In this context, "transparent" means that the evaluations are based on clear indicators that create equivalence in the evaluation process. If leadership qualities are to be evaluated, as in the example above, the Research Council needs to state how this is to be done and define the terms, otherwise there is a risk that indicators that are unknown to the Research Council are used in its own processes. There is also a risk of different metrics being used for applicants of different genders. The latter is especially applicable to qualities that are loaded with preconceptions about what is typically masculine or typically feminine. Among these are terms such as "to lead", "leadership" and "strong research leader".

On one occasion, it was pointed out that one applicant (a woman) had been supervised by another applicant (a man). The observer did not hear any member pointing out that a male applicant had been supervised by any other applicant, whether male or female. This may of course be because there was no such relationship, but is may also be because we tend to note this type of relationship when the person being supervised is a woman. A certain type of information simply confirms our preconceptions about gender.

In one of the groups, a female applicant was criticised for having too many collaborations. A man who also had a conspicuously large number of collaborations was perceived as attractive because many people wanted to collaborate with him.

## Well-known researchers

Previous gender equality observations have complained that there is a tendency to mention well-known researchers in conjunction with applications being reviewed, and that this can influence the evaluation in a manner that is not objective. ${ }^{55}$ Similar tendencies have also been observed in this round of observations; the mention of well-known researchers happened on several occasions in the review panels observed. The wellknown researchers were normally men. Being associated with a famous researcher seemed usually to be perceived as being a positive factor for the applicant.

When well-known researchers applied for funding themselves, this could create unease. This unease concerned how these researchers would react if the panel did not recommend approval of their application. It appeared that

[^15]researchers who had not received research grants in previous years had criticised the review panel's evaluations. The chair of the panel in question seemed to be concerned and still affected by this, which meant that she/he commented on several occasions about the applicants potential reactions; "these are definitely people who will call me", "I think that they will be outraged if they don't get a grant", "there will be consequences if we give someone a higher ranking". The researchers recruited internationally were critical of the chair's desire to increase the rating due to her/his fear of detrimental consequences for the chair and the panel otherwise.

This highlighted a combination of status, fear and tradition within the research field and, combined with the issue of integrity and potential lobbying, is something that should be brought up as a matter for discussion. It has been established in previous reports that when the Research Council staffs the review panels with a large number of Swedes, there is an increased risk of their professional networks playing a role. ${ }^{56}$ These networks are not gender neutral, as there are inequalities within many fields of research, both horizontally (different disciplines that are covered by the same review panel have different statuses) and vertically (the gender balance becomes more skewed higher up the academic hierarchy).

In one group, a member commented, in conjunction with an application being processed, that it was sometimes unclear why well-known researchers were listed as principal applicants. Could it be the case that these people sometimes "lend" their name and good reputation to younger or less qualified colleagues in order to increase the application's prestige and value?

## Independence

In previous gender equality reports, we have noted that the question of whether the researcher is independent more frequently becomes a subject of discussion if the applicant is a woman. According to previous observation data, women are also deemed not to be independent more frequently than men. In the eight groups we studied in 2016, there was a similar tendency in some cases, but this was not as clear as it had been in data from previous observations. On those occasions when reviewers discussed independence, this pertained, with a couple of exceptions, to "starting grants", a form of grant that is intended for young researchers. In the groups we observed, women were deemed not to be independent more frequently than men. The question of independence was also more frequently addressed when it was a woman who was listed as the applicant for a starting grant. The differences were certainly striking on those occasions when the question of independence was discussed, but, as suggested above, it was less frequently discussed in general.

Independence is an indicator that the reviewers within areas such as medicine and health can use when assessing applications. Among the guiding questions the reviewers are offered in the instructions for reviewers, which are intended to function as an aid to the evaluation, the question of independence appears under both the heading "The project's scientific quality" and the heading "The applicant's merits". Independence is defined as the researcher having formulated a scientific query that differs from that which they have been working on in the past, or they are to have an independent line of research, or, if they are young, have the potential to develop this. In the case of starting grants, a form of support intended for young researchers, this means that the applicant has shown she/he is able to work independently. ${ }^{57}$

During the Research Council's meetings, the reviewers from medicine and health often measured independence on the basis of the list of publications. One important indicator, judging by the discussions, is the applicant's placement among the authors for each article. Independence could be linked to the researcher being either the

[^16]first author or senior author. If the applicant did not have one of these placements, this could have a detrimental impact on the evaluation of the researcher's merits, including their independence. It is therefore important for the individual researcher to get the right placement in the list of authors. Who within the research team that shall be listed as the first author when the results are published by a research team can sometimes be a matter for negotiation, or even result in conflict. The researcher who is listed as first author is regarded as the person who has made the greatest contribution to the results being presented, and the senior author is normally the person who has been the research leader. The majority of research leaders should be professors, and there is therefore a risk of the Research Council recreating gender patterns within academia when evaluations take place in accordance with the above.

## Informal information

Previous gender equality observations have noted occasions on which members bring up informal information about the applicant, i.e. information that does not relate to the application. The instructions state that reviewers shall not convey informal information about the applicants. In medicine and health, the officers also addressed the issue at the joint morning meeting arranged the same day as the review panels have their meetings. Informal information was exemplified by using the example of publications: If the review panel knew of an article by the applicant that had been published following the application's submission to the Research Council, the panel should disregard this. The reviewers in the groups observed were keen to comply with this instruction, but it may have been appropriate to provide further examples, so that officers and reviewers were better able to understand what the message about informal information encompassed.
"I am perhaps biased, I see him from time to time, he struggles on"/"Good guy, he deserves a good ranking". These are examples of informal information that was put forward in one of the review panels, repeatedly. The person providing this information wanted to highlight the applicant, and demonstrate her/his suitability using evidence not included in the application. Information about the applicant's personality or other background information should, for obvious reasons, not be considered when assessing the application and this perhaps did not happen in this case either, but there is still a risk of this happening, which is why informal information of this type must not be conveyed during the meetings.

On one occasion, a member of this panel reacted to how some of the panel discussed a female applicant who was praised for having "struggled on". The member had not read the application and asked whether they were supposed to be judging the person or the application. It was good that there was this reaction to something which appeared to be an evaluation on grounds that were not objective. One question that can perhaps be asked is why there was an objection raised in this specific case, where a woman was thought to have been favoured by the judgement about her character, while there was no reaction when a reviewer on the same panel expressed positive views about male applicants on several occasions, as in the paragraph above ("I am perhaps biased, I see him from time to time, he struggles on"/"Good guy, he deserves a good ranking").

The informal information about applicants is often apparently innocent: "we met and had lunch and they said
...". However, this can create asymmetry in the review panel, in several ways. One is that not all members have the same relationship to the applicant; members who work outside of Sweden in particular lack this sort of relationship with applicants. Another is the applicant being no longer seen as one of many, and instead given the role of a person for whom one of the members of the review panel is vouching. Having met a person professionally on a few occasions is not normally a conflict of interest, but as indicated above, one of the members themselves had cause to consider her-/himself whether there was a possible bias vis-à-vis the applicant when this opinion was stated. However, this did not prevent the person in question from doing so.

In one of the panels, the chair her-/himself was the person who provided informal information. On these occasions, the panel's energy was low and it could be interpreted as there having been a need to lighten the mood and thus create more energy by providing informal information. In one of the panels, the administrator intervened and emphasised the importance of not providing informal information. In other panels, no one reacted when the informal information was conveyed, and this was sometimes used as a basis on which to evaluate the application.

One gender equality observer noted from a meeting that informal information was conveyed, which the international members, in particular, had difficulty evaluating. This could have made them uncertain. However, they were thought to be sure of their opinions and, on several occasions, called into question evaluations and parts of the informal information that was brought up.

Previous gender equality observations have indicated that when informal information is included in discussions, this can result in speculation about the applicants. This seemed to be the case on a few occasions during this year's observations, primarily in relation to uncertainty in the evaluation of junior researchers and the term "potential". The instructions for reviewers for several subject areas state that in cases where the researcher is young, the reviewers shall assess whether the individual has potential. ${ }^{58}$ It was rare for this aspect to be raised during the discussions. It would be beneficial if the Research Council were to formulate the guidelines for this criterion more clearly.

## Awareness of gender issues

The impression from the observations is that many reviewers appeared to be informed about and aware of the Research Council's objective of a gender-equal distribution of research grants. Several subject areas press home this matter in their written instructions for reviewers and also in the oral information provided. However, we noted that no reviewer referred directly to the Research Council's reports, for example the gender equality observations, and rarely to the instructions for reviewers. Nevertheless, the term "unconscious bias" was mentioned on a couple of occasions, referring to the film from the Royal Society, which many of the reviewers had watched. One member addressed Christine Wennerås and Agnes Wold's groundbreaking article about gender equality in research. ${ }^{59}$ One possibility would perhaps be for the Research Council's officers to also refer to the Council's own reports, including the gender equality observations, during the information meetings in order to raise awareness of the Council's objectives and means to an even greater extent.

When individual reviewers addressed issues concerning gender equality, they were usually women. One example is when the unequal gender distribution among the highest ranked applications was clear to one panel. One member asked the gender equality observer to specifically note that only one application of the fifteen ranked had a woman as the principal applicant. Of the applications being reviewed by this panel, 47 per cent came from women, which is why the paucity of women on the ranking list could not be explained by a lack of female applicants. A short discussion about gender equality followed after the member pointed out the imbalance, but the result was not altered. In another panel, a female member raised the point that even though all were in agreement that the applications from women had been of a lower quality and that this explained the lack of gender balance in the results, this could perhaps be due to "unconscious bias".

In one panel, women fared worse than the previous year. The members appeared distressed about the result and discussed possible causes. One proposal made was to double the amount of deductible time, as it takes time before a researcher can get up and running again following parental leave.

In two of the panels, there was an awareness that few women had applied for grants in the panel in question. One member communicated to the gender equality observer that the research council should work on this issue.

[^17]
## Gender distribution at the time of sifting and ranking

In previous gender equality observations, the importance of gender equality has been emphasised at all stages of the evaluation process, which is also supported by the Research Council's written instructions. ${ }^{60}$ However, the gender equality observers heard on several occasions representatives of scientific councils and chairs of review panels express, in an answer to a direct question from members of the review panels, that gender equality aspects were something that should be dealt with "later on" in the process. On one occasion, the question concerned the gender distribution following the first sifting process that some panels conduct in advance of the review panel meeting (the process is described above). Before the decision is made concerning the applications that are sifted out, one member wanted to see what the outcome was like in terms of gender. The scientific council's representative argued that this was not relevant, that the group should look at gender distribution in the very final phase of the process when the applications are ranked. However, the instructions state that the applications that remain following the sifting process should reflect the gender balance of the applications as a whole. ${ }^{61}$ So as to know what the outcome was for each gender, the members reasonably needed to be able to study a calculation before the closing meeting.

In addition to the fact that instructions supported the member's desire, it can be discussed whether it is a wise strategy to refrain from looking at the gender balance in conjunction with the sifting process. In the worst case, this may mean that the panel lack or has too few applications from the under-represented gender to discuss at the review panel meeting. Including more applications in the meeting may increase the chances of the Research Council achieving a gender-equal distribution of research grants. One question that was raised by a member of another panel was whether the reviewers need to justify their decision when the gender distribution is strikingly uneven. The representative of the scientific council argued that this was not necessary, because few women had applied, and they had also been given low ratings. However, scientific councils and secretary generals are helped by the fact that the review panels justify their recommendations when the distribution of research grants is not gender equal.

In one of the groups we studied, the members had used decimals during the process, but at the end of the meeting, the decimals were to be removed and the group must agree on a figure. One woman with a rating of 6.5 was given a higher rating, the group's only 7 . The two men who were closest had been given ratings of 5.5 , and these were raised to 6 . The others applicants in the group of fifteen that were to be ranked, and who had a rating of 5.5 , were women. All women had their ratings adjusted downwards.

In spite of the fact that the adjustments to the ratings in this group had a tendency to disadvantage women, the gender distribution was even, i.e. the proportion of women prioritised on the ranking list was the same as the proportion of women who had applied. This fact may have contributed to no one wanting to raise the issue of why women more frequently had their ratings adjusted downwards. However, one member raised the issue of why the upper part of the list was so completely dominated by men. The scientific council's representative responded that this was due to men having higher ratings in the criterion novelty and originality. In this panel, the scientific council's representative emphasised that this criterion was to weigh heavily, together with the criterion "the project's scientific quality". The chair asked the question whether the group wanted to draw up a new ranking list that was based solely on the criterion "the project's scientific quality". The panel said no. The chair then concluded the discussion. In parallel with the discussion referred to taking place, several people began talking amongst themselves. There was no more in-depth discussion about why women, with one exception, had been placed in the lower part of the ranking list.

In several panels, the members were concerned about the fact that so few women were amongst the highest ranked. In one panel, they began counting all contributors (normally the Research Council only counts principal applicants) in the hope that the result was point in a different direction. In other panels, the officers didn't just count the gender distribution among those recommended for approval before the meeting was concluded, which

[^18]all review panels are to do in accordance with the Research Council's gender equality strategy. ${ }^{62}$ The so-called boundary condition was not used in any of the groups that were observed. What is meant by boundary condition in this context is that, if the review panel deems two applications to be of equal quality, the group is to prioritise the applicant that belongs to the under-represented gender. ${ }^{63}$

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## RECOMMENDATIONS

## Analyse how evaluations of researchers' merits influence the distribution of grants

The Research Council shall provide support for basic research of the highest scientific quality in all subject areas. We have noted that there are both differences in the instructions and variations between the review panels in terms of how members are instructed to interpret, and do interpret, the term scientific quality. When we observed the review panels within the subject area medicine and health, we noted that many members place greater emphasis on the applicant's merits than review panels within other subject areas. The publication list is primarily the tool that members use in order to measure merits. ${ }^{64}$ It is reasonable to assume that those applicants with the greatest merits are men, because there are relatively few women who are professors. The fact that the members of the review panels who belong to medicine and health largely emphasise the merits criterion may be one reason why it is more difficult to achieve the objective of a gender-equal distribution of research grants within medicine and health than within other subject areas.

The Research Council should adopt a position on how the researcher's merits are to be evaluated, and also investigate whether the indicators that many members use to evaluate merits have an impact on the gender equality of the research grants' distribution. Are men, as a consequence of them more frequently being professors, also more likely to be "senior authors" or research leaders for large teams that produce a large number of articles? If so, how is this to be dealt with relative to the gender equality objectives? Furthermore, is leadership capability to be evaluated and, if so, which indicators shall be used? An unconscious bias can be present here vis-à-vis women, when there is a focus on terms such as "to lead", "leadership" and "strong research leader". Finally, what is the best way to conduct the evaluation of someone's future development/potential, and what are the best indicators to base this on? The analysis should include a gender perspective on how the procedure impacts on the objective of distributing the research funding in a gender-equal manner.

The Research Council should adopt a clearer position on what weighting the researcher's merits are to be given in the evaluation of their application. When the emphasis in the evaluation is on the researcher's merits, there is a risk that the gender inequality that prevails within academia is transferred into the Research Council's evaluation processes.

The researcher's merits are often evaluated on the basis of their publication list. There should therefore be a clarification and systematisation of how the analyses of this should be conducted in order to make it more transparent and quality assured. The Research Council should formulate recommendations in this area.

What are the consequences for gender equality when the review panels use the number of publications and the journal impact factor in the evaluation of researchers' performance? Is it better to evaluate publications in other ways and if so, what methods shall the Research Council use? ${ }^{65}$

Is it appropriate for the review panels to conduct citation analyses or calculate $h$-indices on behalf of the applicants? Should the Research Council instead conduct citation analyses that the review panels have access to? Should the other subject areas use citation data in the same way as natural and engineering sciences?

[^20]
## Investigate the relationship between distribution of grants by gender and the panels' composition

The Research Council has strict rules concerning conflict of interest. There is a high level of knowledge about these among both officers and reviewers, not least because the authority, via the officers, always informs members about these, makes careful notes about who has reported conflicts of interest about which applicants, and ensures that no one pronounces an opinion about applicants when they are disqualified from doing so due to a conflict of interest. In formal terms, any bias is managed carefully and correctly.

In spite of this, it has emerged during the observations that there is a perception among some reviewers that it is not entirely easy for researchers to isolate themselves from the academic networks they belong to as part of their normal professional roles. ${ }^{66}$ This may mean that the researchers, in their roles as reviewers of applications on behalf of the Research Council, feel they have difficulty refraining from showing greater consideration to certain people, perhaps in particular those who are prominent and who are part of the network that has been educated within their own field. Researchers' academic networks are not gender neutral, as there is a prevailing inequality within many fields of research, both horizontally (different disciplines that are covered by the same review panel have different statuses) and vertically (the gender balance becomes more skewed higher up in the academic hierarchy). Showing consideration to colleagues in their own networks may therefore run counter to the Research Council's objective of gender-equal approvals, but is also a potential threat to the objective of financing research of the highest quality.

The Research Council can choose to investigate the relationship between review panels' distribution of grants by gender and their composition in order to determine whether there is anything which points to there being groups with a higher proportion of international researchers distributing grants in a more gender-equal manner.

## Increased effort to get more of the under-represented gender to apply for research grants

In conjunction with the observation, one member asked whether the Research Council is able to make more effort to encourage the under-represented gender to apply for grants. In some review panels, the gender distribution among applicants is skewed, and this particular member belonged to such a panel.

The Research Council may consider taking action in order to get more applicants from the under-represented gender (usually women) in areas with a skewed gender distribution. The first stage should be to find out in which review panels this is a problem. Once this has been documented, the Council can then choose to investigate which instruments may be appropriate - from targeted information initiatives to targeted research grants. For example, both SSF and Vinnova have used special grants targeted at the under-represented gender. 67

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## Arrange preparatory meetings

It is important that the officers, chair and scientific council representatives collaborate well. The Research Council can contribute to this by introducing preparatory meetings, at which officers, chair and, where appropriate, the scientific council/committee representative meet ahead of the review panel meeting. At these meetings, questions about boundaries and roles can be negotiated, so that everyone can communicate their view of "who does what", and in that way take collective responsibility for ensuring that nothing "falls between chairs" during review panel meetings. In this context, it can be specifically noted that it is important for the review panels to comply with the guidelines that the Research Council has drawn up and which aim to contribute to the objective of a gender-equal distribution of research grants. The Research Council may choose to draw up proposals concerning what may need to be discussed.

In autumn 2016, the Swedish Research Council conducted gender equality observations in eight review panels in order to investigate whether there was further room for improvement in terms of procedures, instructions and other aspects that promote gender-neutral assessment of grant applications.

This is the sixth time the Research Council has conducted gender equality observations.
The report shows the need to:

- Analyse how the Research Council's instructions for evaluating the applicant's competence in particular has an impact on the objective of gender equal distribution of research grants.
- Investigate the relationship between the distribution of grants by gender and the review panels' composition, with specific reference to the members' nationality.
- Consider making more effort to get more of the under-represented gender to apply for research grants.



[^0]:    ${ }^{1}$ The Swedish Research Council's designation of evaluation panels or teams is "review panel". It is a group consisting of prominent researchers who evaluate applications received for research grants.
    ${ }^{2}$ Direction to the Future Swedish Research System - Goals and Recommendations, Swedish Research Council 2016, page 41.

[^1]:    ${ }^{3}$ Vetenskapsrådets benämning av paneler eller bedömningsgrupper är "beredningsgrupper". Det är en grupp bestående av framstående forskare vilka bedömer inkomna ansökningar om forskningsbidrag.
    ${ }^{4}$ Forskningens framtid. Vägval för framtidens forskningssystem, mål och rekommendationer, Vetenskapsrådet 2015 sid 58.

[^2]:    ${ }^{5}$ Ordinance (2009:975) with instructions for the Swedish Research Council, SFS 2009:975
    ${ }^{6}$ Kvinnor och mäns framgång med projektansökningar inom medicin, Swedish Research Council report series 2009:4.

[^3]:    ${ }^{7}$ Other variables that have been investigated are the applicant's title, the number of years since gaining their doctorate and the articles' citations. Pilotstudie av effekter av Vetenskapsrådets jävshantering, Swedish Research Council, 2010, reference number 354-2010-1038.
    ${ }^{8}$ There are several studies that indicate women generally publish less than men. In one study that is pertinent here, an audit of applicants to the Research Council, medicine and health, in 2006 and 2007. On average, men had 30 publications and women 16. The difference may be partly, but not entirely, explained by the fact that male applicants are at a later stage of their careers. Kvinnor och mäns framgång med projektansökningar inom medicin, Swedish Research Council report series 2009:4, page 45.
    ${ }^{9}$ Kvinnor och mäns framgång med projektansökningar inom medicin, Swedish Research Council report series 2009:4.
    ${ }^{10}$ Jämställdheten i Vetenskapsrådets forskningsstöd 2011-2012, Swedish Research Council, 2014, Appendix 1, pages 47-48.
    ${ }^{11}$ The term statement denotes the document that the researcher obtains as a response to their application. A statement contains both numerical ratings and text.
    12 Jämställdheten i Vetenskapsrådets forskningsstöd 2011-2012, Swedish Research Council, 2014, Appendix 1, pages 47-48.
    ${ }^{13}$ En jämställd process - en kvalitativ undersökning av bedömningen av forskningsbidragsansökningar, Swedish Research Council, 2015, page 17, Jämställdhetsobservationer i ett urval av Vetenskapsrådets beredningsgrupper 2012, Swedish Research Council, 2013, pages 12, 17.
    ${ }^{14}$ Uppdrag om riktlinjer för Vetenskapsrådets sakkunnigbedömning. Swedish Research Council, ref. no. 1.2.4-2016-7045.

[^4]:    ${ }^{15}$ Beredningshandbok, medicin och hälsa 2016, Swedish Research Council, 2016, page 5.
    ${ }^{16}$ Beredningshandbok, medicin och hälsa 2016, Swedish Research Council, 2016.
    17 "Knowledge about gender and assessment should increase among all those who contribute to the review process", recommendation in Jämställdhetsobservationer i fyra beredningsgrupper 2011, Swedish Research Council, 2012, page 6, Jämställdhetsobservationer i ett urval av Vetenskapsrådets beredningsgrupper 2012, Swedish Research Council, 2013, page 14. This recommendation was repeated with a slightly different wording in 2015: "The Swedish Research Council should revise the instructions and the information provided to reviewers when recruiting from a gender equality perspective". En jämställd process? - en kvalitativ undersökning av bedömningen av forskningsbidragsansökningar, Swedish Research Council, 2015, page 23.
    ${ }^{18}$ https://royalsociety.org/topics-policy/publications/2015/unconscious-bias/ accessed 05/01/2017
    ${ }^{19}$ Recommendation in Jämställdhetsobservationer i ett urval av Vetenskapsrådets beredningsgrupper 2012, Swedish Research Council 2013, pages 14-15. Also refer to En jämställd process? - en kvalitativ undersökning av bedömningen av forskningsbidragsansökningar, Swedish Research Council, 2015 , pages $20,22$.
    ${ }^{20}$ Recommendation in Jämställdhetsobservationer i ett urval av Vetenskapsrådets beredningsgrupper 2012, Swedish Research Council 2013, page 14. Also refer to En jämställd process? - en kvalitativ undersökning av bedömningen av forskningsbidragsansökningar, Swedish Research Council, 2015 , page 23.
    ${ }^{21}$ Recommendation in En jämställd process? - en kvalitativ undersökning av bedömningen av forskningsbidragsansökningar, Swedish Research Council, 2015, page 22.
    ${ }^{22}$ Recommendation in En jämställd process? - en kvalitativ undersökning av bedömningen av forskningsbidragsansökningar, Swedish Research Council, 2015, page 21.
    ${ }^{23}$ Recommendation in Jämställdhetsobservationer i fyra beredningsgrupper 2011, Swedish Research Council, 2012, page 6, Recommendation in Jämställdhetsobservationer i ett urval av Vetenskapsrådets beredningsgrupper 2012, Swedish Research Council, 2013, page 15. Also refer to En jämställd process? - en kvalitativ undersökning av bedömningen av forskningsbidragsansökningar, Swedish Research Council, 2015, page 23.
    ${ }^{24}$ Recommendation in Jämställdhetsobservationer i ett urval av Vetenskapsrådets beredningsgrupper 2012, Swedish Research Council 2013, page 14. Also refer to En jämställd process? - en kvalitativ undersökning av bedömningen av forskningsbidragsansökningar, Swedish Research Council, 2015 , page 24.

[^5]:    ${ }^{25}$ En jämställd process? - en kvalitativ undersökning av bedömningen av forskningsbidragsansökningar, Swedish Research Council, 2015 , page 21.

[^6]:    ${ }^{30}$ Svart på vitt - om jämställdhet i akademin Final Report of the Delegation for Gender Equality in Higher Education, SOU 2011:1, page 98.
    ${ }^{31}$ The Swedish Research Council's Strategy for Gender Equality http://www.vr.se/omvetenskapsradet/styrandedokument/jamstalldhetsstrategi.4.1f599ea412a30327ccf800042.html accessed 02/01/2017
    ${ }^{32}$ Scientific councils and committees http://www.vr.se/images/18.52419d9f1590860297a7a020/1483968217377/VR-Organisation-SVE-170109stor.jpg accessed 20/01/2017 The members of the Research Council's scientific councils and committees are chosen through an electoral process. There is a secretary-general who has a high level of academic expertise attached to each scientific council. The secretary-general is part of the Research Council's senior management group, has academic responsibility for the activities of the scientific council/committee and is employed by the Research Council for a maximum of six years.

[^7]:    ${ }^{33}$ The report Jämställdhetsobservationer i fyra beredningsgrupper 2011 (Swedish Research Council, 2012) contains three years' worth of gender equality observations: 2008, 2009 and 2011. One panel was observed in 2008 and 2009, four panels were observed in 2011, in all cases by officers from Chalmers University of Technology. In 2012, 15 panels were observed by three officers from Chalmers and three from the Research Council, the report was published in 2013. In 2014, eight panels were observed by one officer from Chalmers and three from the Research Council; the report was published in 2015.

[^8]:    ${ }^{34}$ The European Research Council (ERC) is financed by the European Commission and allocates grants to research. The video is called Unconscious Bias in Recruitment Processes and is produced by the Catalan Research Centres Institute. The film is posted on the ERC's website https://erc.europa.eu/thematic-working-groups/working-group-gender-balance accessed 06/04/2017
    35 "Under ytan Hur går snacket och vem får pengarna?" Swedish Agency for Economic and Regional Growth, 2015, pages 1-3.

[^9]:    ${ }^{36}$ Gender Issues in Recruitment, Appointment and Promotion Processes - Recommendations for a Gender Sensitive Application of Excellence Criteria. Expert report ER-Festa-2015-002
    ${ }^{37}$ Kajsa Skarsgård "Undvik genusfällor för att få mer likvärdig rekrytering" in Universitetsläraren, 2016, no. 6, p. 19.

[^10]:    ${ }^{38}$ The Swedish Research Council's Strategy for Gender Equality
    http://www.vr.se/omvetenskapsradet/styrandedokument/jamstalldhetsstrategi.4.1f599ea412a30327ccf800042.html accessed 02/01/2017
    ${ }^{39}$ Scientific councils and committees http://www.vr.se/images/18.52419d9f1590860297a7a020/1483968217377/VR-Organisation-SVE-170109stor.jpg accessed 20/01/2017 The members of the Research Council's scientific councils and committees are chosen through an electoral process. There is a secretary-general who has a high level of academic expertise attached to each scientific council. The secretary-general is part of the Research Council's senior management group, has academic responsibility for the activities of the scientific council/committee and is employed by the Research Council for a maximum of six years.

[^11]:    ${ }^{40}$ Beredningshandbok, medicin och hälsa 2016, Swedish Research Council, 2016, page 4.

[^12]:    ${ }^{41}$ Beredningshandbok för humaniora och samhällsvetenskap 2016, Swedish Research Council, 2016, page 7.
    ${ }^{42}$ Beredningshandbok medicin och hälsa 2016, Swedish Research Council, 2016, page 13.
    ${ }^{43}$ Beredningshandbok naturvetenskap och teknikvetenskap 2016, Swedish Research Council, 2016, page 14.

[^13]:    ${ }^{44}$ Beredningshandbok utbildningsvetenskap 2016, Swedish Research Council, 2016, page 10.
    ${ }^{45}$ Beredningshandbok utvecklingsforskning 2016, Swedish Research Council, 2016, page 13.
    ${ }^{46}$ Kvinnor och mäns framgång med projektansökningar inom medicin, Swedish Research Council report series 2009:4.
    ${ }^{47}$ Pilotstudie av effekter av Vetenskapsrådets jävshantering, Swedish Research Council, 2010, reference number 354-2010-1038.
    48 One recommendation generated by the report from 2015 was that the Research Council clarifies what is to be assessed under the criterion the applicant's merits and ensure that reviewers comply with the instructions.

[^14]:    ${ }^{49}$ Gustav Nelhan's "Vetenskaplig kvalitet ska bedömas, inte mätas" in the journal Curie 22/11/2016 http://www.tidningencurie.se/debatt/vetenskaplig-kvalitet-ska-
    bedomas-inte-matas/accessed 05/01/2017. This article contains several references to research that supports Nelhan's line of argument. See also, Sara Nilsson "Så används impactfaktorer i forskarvärlden" in the journal Curie 29/09/2016 http://www.tidningencurie.se/nyheter/2016/09/29/sa-anvands-impaktfaktorer-iforskarvarlden/ accessed 05/01/2017 and Sara Nilsson "Måttet som styr forskarkarriärer" in the journal Curie 28/09/2016. http://www.tidningencurie.se/nyheter/2016/09/28/mattet-som-styr-forskarkarriarer/ accessed 05/01/2017.
    ${ }^{50}$ The h-index is a value calculated on the basis of a researcher's publications. This was not a review panel for natural and engineering sciences; researchers in this area are asked to present citation data in their application.
    ${ }^{51}$ Gustav Nelhan's "Vetenskaplig kvalitet ska bedömas, inte mätas" in the journal Curie 22/11/2016 http://www.tidningencurie.se/debatt/vetenskaplig-kvalitet-ska-bedomas-inte-matas/ accessed 24/11/2016
    ${ }^{52}$ Riktlinjer för användning av bibliometri vid Vetenskapsrådet, Swedish Research Council, 2014, ref. no. 113-2014-7357.

[^15]:    ${ }^{53}$ Beredningshandbok naturvetenskap och teknikvetenskap 2016, Swedish Research Council, 2016, pages 15-16.
    54 The exception is Japan, where women publish the same number of articles as men. Gender in the global research landscape. Analysis of research performance
    through a gender lens across 20 years, 12 geographies, and 27 subject areas, 2016, page 6 .
    https://www.elsevier.com/ data/assets/pdf file/0008/265661/ElsevierGenderReport final for-web.pdf
    ${ }^{55}$ En jämställd process? - en kvalitativ undersökning av bedömningen av forskningsbidragsansökningar, Swedish Research Council, 2015 , page 12.

[^16]:    ${ }^{56}$ En jämställd process? - en kvalitativ undersökning av bedömningen av forskningsbidragsansökningar, Swedish Research Council, 2015 , page 12.
    ${ }^{57}$ Independence is to be assessed in medicine and health, natural and engineering sciences and development research: Beredningshandbok medicin och hälsa 2016,
    Swedish Research Council, 2016, page 11, Beredningshandbok naturvetenskap och teknikvetenskap 2016, Swedish Research Council, 2016, page 16,
    Beredningshandbok utvecklingsforskning 2016, Swedish Research Council, 2016, pages 15-16. In educational sciences and humanities and social sciences, the reviewers do not assess the applicant's independence, as far as can be determined from the instructions for reviewers.

[^17]:    ${ }^{58}$ Beredningshandbok naturvetenskap och teknikvetenskap 2016, Swedish Research Council, 2016, page 15, Beredningshandbok medicin och hälsa 2016, Swedish Research Council, 2016, page 11. Beredningshandbok utvecklingsforskning 2016, Swedish Research Council, 2016, page 16, Beredningshandbok internationell postdoc 2016, Swedish Research Council, 2016, page 10.
    59 Nepotism and sexism in peer-review, Christine Wennerås \& Agnes Wold, Nature 387, 341-343 (22 May 1997); doi:10.1038/387341a0

[^18]:    ${ }^{60}$ See, for example, Beredningshandbok medicin och hälsa 2016, Swedish Research Council, 2016, page 6.
    ${ }^{61}$ Beredningshandbok medicin och hälsa 2016, Swedish Research Council, 2016, page 38.

[^19]:    ${ }^{62}$ The Swedish Research Council's Strategy for Gender Equality
    http://www.vr.se/omvetenskapsradet/styrandedokument/jamstalldhetsstrategi.4.1f599ea412a30327ccf800042.html accessed 02/01/2017
    ${ }^{63}$ Beredningshandbok, medicin och hälsa 2016, Swedish Research Council, 2016, page 5.

[^20]:    ${ }^{64}$ This is supported by previous gender equality observations, the report Kvinnor och mäns framgång med projektansökningar inom medicin, Swedish Research Council report series 2009:4 and by Pilotstudie av effekter av Vetenskapsrådets jävshantering, Swedish Research Council, 2010, reference number 354-2010-1038.
    ${ }^{65}$ It is worth recalling here that the JIF value is problematic for the trend towards open access. With the current evaluation system, researchers must publish in journals that have high JIF values and these are often not open access, but subscription based.

[^21]:    ${ }^{66}$ The literature is relatively extensive in terms of research into collegial evaluation, for example Kollegial bedömning av vetenskaplig kvalitet - en forskningsöversikt, Swedish Research Council, 2010.
    ${ }^{67}$ SSF has conducted "a new initiative to broaden the recruitment base for younger researchers belonging to the under-represented gender who want to achieve the highest positions within Swedish higher education institutions or Swedish industry. Promising researchers who were awarded PhDs in 2007 or later are offered grants in order to build up an independent and innovative research operation in Sweden, within those areas SSF is prioritising" http://stratresearch.se/pressmeddelande/nastan-700-miljoner-till-svensk-forskning-i-storsatsning-av-ssf/ accessed 07/01/2017. Vinnova is another example: "The purpose of the call was to strengthen qualification opportunities through increased mobility opportunities for VINNMER Fellows (primarily female doctoral researchers) within the framework of national collaboration between universities, colleges, research institutes, industry and public partners within Sweden. This focus was chosen to impact the systemic weakness of a low proportion of qualifying women." http://www.vinnova.se/sv/Ansoka-och-rapportera/Utlysningar/Effekta/VINNMER-national-qualification/ accessed 07/01/2017

