Evaluation of research proposals:
the why and what of the ERC's recent changes

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1. Introduction

The mission of the European Research Council (ERC) is to encourage the highest quality research in Europe through competitive funding and to support investigator-driven frontier research across all fields, based on scientific excellence. Research evaluation is therefore at the heart of its operations. Recently, the Scientific Council[1] of the ERC has introduced changes in the evaluation processes and evaluation forms for the 2024 calls for research proposals[2], as described in the ERC 'Work Programme 2024' and the associated guidance documents[3]. This report describes the changes, the discussions that led to them, and the reasoning behind them.

The Scientific Council continuously scrutinises the ERC evaluation processes, soliciting feedback from the chairs and members of the ERC evaluation panels and listening to input from applicants, grantees and other members of the scientific community. A dedicated committee of the Scientific Council is responsible for the development of norms and rules for the proper functioning of the evaluation panels.[4] In addition, certain aspects of research assessment are handled by the Working Group on Open Science.[5] In July 2021[6], the ERC endorsed the San Francisco Declaration on Research Assessment (DORA) and in early 2023[7] signed the Agreement on Reforming Research Assessment.

Having followed the debate on research assessment in recent years and observed the reforms introduced in some countries and institutions, the Scientific Council shares the concern that current research assessment systems often use inappropriate and narrow methods to assess the quality, performance and impact of research and researchers.

Given the fast-moving nature of this policy area, and the European Commission's initiative[8], launched in January 2022, to create a 'coalition of the willing' to promote changes the Scientific Council wanted to take an encompassing and structured look at research assessment in general, establish our own position, and consider possible changes to the ERC's evaluation processes that may follow from those deliberations.

The Scientific Council defined three tasks: one was to decide *which* characteristics and qualities of the applicant and the proposed project should be considered, the second was to decide *how* to evaluate those characteristics and qualities, and finally, it was necessary to decide how to *weigh* the different characteristics and qualities against each other.

In this report, I present the consensus views at which the Scientific Council arrived, and the reasoning behind those views. Where there were strongly divergent opinions, I report on those as well. I also include our thinking on changes on which we had already decided at an earlier point.

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[1] https://erc.europa.eu/about-erc/erc-president-scientific-council
[2] https://erc.europa.eu/news-events/news/erc-scientific-council-decides-changes-evaluation-forms-and-processes-2024-calls
[3] https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/wp-call/2024/wp_horizon-erc-2024_en.pdf
[4] https://erc.europa.eu/about-erc/erc-standing-committees/standing-committee-panels
[5] https://erc.europa.eu/about-erc/thematic-working-groups/working-group-open-access
[6] https://erc.europa.eu/news/erc-2022-work-programme
[7] https://erc.europa.eu/news-events/news/erc-scientific-council-decides-changes-evaluation-forms-and-processes-2024-calls
[8] https://research-and-innovation.ec.europa.eu/news/all-research-and-innovation-news/process-towards-agreement-reforming-research-assessment-2022-01-18_en

2. How we organised our work

We, the Scientific Council, set up a task force composed of members of the Scientific Council supported by staff of the ERC Executive Agency (ERCEA) to assemble and analyse background materials and to prepare discussions in the Scientific Council. All decisions were taken by the Scientific Council, and we will not distinguish here between the deliberations of the task force and the Council.

Before taking any decisions, we:

1. assembled *background material* including a summary of recent stakeholder position papers on reforming research assessment, and information on the ERC's 'sole criterion of excellence' and current ERC evaluation processes (overview in **Annex 1**);

2. held *a two-day analytical workshop* with experts in the field of research assessment representing different disciplines and organisations, and with different geographical backgrounds, from different careers and career stages, together with members of the Scientific Council and ERCEA staff (executive summary in **Annex 2**);

3. prepared *a list of possible dimensions or elements* (list in **Annex 3**) that could be used in the evaluation of researchers and proposals for ERC grants, taken from the materials described above. This list served as the basis for assessing whether the ERC already looks at or should in the future look at these dimensions or elements in its evaluation processes and guidance documents. Content from the workshop also fed into the discussion.

We first assessed what elements of a researcher's CV, track record and proposal were relevant for the evaluation (for example publications or recognition by peers), and then the mechanisms that should be used to evaluate them (for example citation counts versus statements or narratives). In a parallel process, members of the Scientific Council and the ERCEA also participated in the group of organisations[9] that elaborated the Agreement on Reforming Research Assessment.[10]

3. Summary of changes resulting from our work

The steps outlined above resulted in the following changes, which, taken together, are designed to emphasise the qualitative nature of the ERC's evaluations with the primary focus on the proposed research project:

– The description of required 'profiles' of ERC PIs has been removed from the Work Programme.
– In the application form, the CV and track record, previously two separate documents, are now combined as a single template.

   The document is limited to four pages in length (with fixed font and spacing), and it is left to the applicant how to allocate this space to the following three sections:

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[9] https://research-and-innovation.ec.europa.eu/news/all-research-and-innovation-news/process-towards-agreement-reforming-research-assessment-2022-01-18_en
[10] https://coara.eu/app/uploads/2022/09/2022_07_19_rra_agreement_final.pdf

Personal details.
This section contains only the personal details, education and key qualifications of the applicant, and the current and previous positions held.

Research achievements and peer recognition.
- For the research achievements, the number of examples is limited to ten. The type of research output is deliberately left open; it can be publications, including preprints, books or essays, expeditions, data sets, code, or any other research achievement considered relevant in the applicant's domain of research. For each entry, the applicant is encouraged to explain in a brief narrative how it has advanced the field, and how it demonstrates the applicant's capacity to successfully carry out the proposed project.
- Peer recognition covers prizes and awards, elected academy memberships, honorary degrees, significant leadership positions, etc.

It is evident that these lists will vary depending on the career stage of the applicant as well as on the area of research.

Additional information.
In this section the applicant can provide information on career breaks, diverse research career paths and major life events, as well as particularly noteworthy contributions to the research community not reflected in the previous section.

− Proposals will continue to be evaluated on the sole criterion of scientific excellence: the panels will primarily evaluate the ground-breaking nature, ambition, and feasibility of the research project. At the same time, the panels will evaluate the intellectual capacity and creativity of the applicant, with a focus on the extent to which the applicant has the required scientific expertise and capacity to successfully execute the project.

− The panels will also consider the additional information from the applicant. This will provide context to the evaluation panels when assessing the applicant's research achievements and peer recognition.

With these changes, applicants can now provide a more holistic and fuller account of their research career and contributions for the panels to consider.

4. Discussion in the Scientific Council

In discussing criteria and mechanisms for assessing researchers and project proposals, we took an open-minded approach, neither assuming that changes in the processes of the ERC were necessary nor rejecting them out of hand. In our view, many of the demands being made about research assessment, particularly those from the younger generation[11], are legitimate.

We reached a rapid consensus on some fundamental points. The ERC as a funder of frontier research should retain the sole criterion of *scientific* excellence, as legally enshrined in the acts establishing the EU research and innovation framework programme[12], and not move towards evaluating *economic* or *societal* impact. Using economic or societal impact as explicit evaluation criteria would disfavour fundamental, curiosity-driven research that may not have an immediate or obvious economic or societal impact but is nevertheless important for scientific progress.

A major challenge is to agree on what is meant by 'excellence'. For the sake of clarity, and as a proper basis for discussion, it seems reasonable to consult dictionaries for a definition of the term. The Oxford English Dictionary describes the noun as 'the quality of being extremely good', Merriam Webster offers 'the quality of being excellent', which in turn is described as 'very good of its kind; eminently good; first-class'. Both agree that it is a measure on a scale of quality – and this measure might apply to any entity of interest. While this says that 'excellence' is not a description of a collection of entities that is desired or even ideal in any given situation, this is seen differently by many engaged in the current discussion on research assessment, especially the assessment of researchers (as opposed to research proposals). This is important for this discussion. When we say we judge the excellence of the proposal or researcher, we do not expect the application to satisfy each element of a broad portfolio of demands. Instead, for any *characteristic and quality we deem important*, we look at whether the proposal and the researcher rank highly in comparison with others. The high level of competition of our funding schemes implies that selected proposals and researchers excel not only in direct competition with other applications but are also of highest quality in absolute terms.

Like many others who have commented on research assessment (see Annex 1), we agree that different contexts for assessment (such as faculty recruitment, promotion, awards, grants) necessitate assessing different characteristics and qualities. For example, in assessing a candidate for a faculty position, it makes sense to ask for the candidate to excel in teaching or in participating in faculty committee work as well as in research. Different

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[11] See for example: De Herde, V., Björnmalm, M. and Susi, T., 2021. Game over: empower early career researchers to improve research quality. *Insights: the UKSG journal,* 34(1), p.15. https://doi.org/10.1629/uksg.548
and
de Rijcke, S., Cosentino, C., Crewe, R., D'Ippoliti, C., Motala-Timol, S., Binti A Rahman, N., Rovelli, L., Vaux, D.L. and Yupeng, Y. 2023. The Future of Research Evaluation: A Synthesis of Current Debates and Developments. *Global Young Academy (GYA), the InterAcademy Partnership (IAP) and the International Science Council (ISC) Centre for Science Futures.* https://doi.org/10.24948/2023.06
[12] https://eur-lex.europa.eu/eli/reg/2021/695/oj#d1e32-51-1

qualities will be important when assessing grant proposals for, say, an international research expedition, or infrastructure support.

In the case of the ERC, project proposals are judged on excellence in creativity, originality and potential for significant advances in knowledge - or, to use the wording of the ERC work programme: "the ground-breaking nature, ambition and feasibility of the proposal".

4.1.   Evaluation of the proposed project

While the ranking of the project proposals according to excellence in the ambition, potential scientific impact and scientific approach is entirely entrusted to the evaluation panels, and we saw no need for structural or procedural changes, some guidance has been given in the past and will also be necessary in the future.

During our deliberations we recognized that some terms that had previously been in use may not be fit for purpose. The term 'high-risk, high-gain' was seen as potentially confusing and problematic. This concept is often invoked to discourage evaluation panels from conservatism in their choice of what to fund. Indeed, the possibility that a project will not fulfil its aims is inherent in frontier research, but this possibility means precisely that the results cannot be predicted. On the other hand, a researcher who, for example, has already established with preliminary data that an exciting new approach is likely to work, may be able to carry out ground-breaking work with a relatively high chance of success.

We stress that the ERC continues to look for proposals that address important challenges and hope that the research funded by the ERC will lead to major advances at the frontier of knowledge. However, the 'high-risk, high-gain' conjunction is not helpful for the evaluation of proposals, and the terms 'ambitious', 'creative and original' are better descriptors for the kinds of proposals the ERC should fund.

An element that can be positive but is not strictly necessary for an excellent proposal is the 'development of novel methodologies'. New methodologies can allow long-standing problems or questions to be tackled and developing them is therefore crucial for advancing knowledge. However, an applicant may come up with an original idea for approaching an unsolved problem with an existing methodology. Conversely, new methodologies could be developed and then employed for projects of minor importance or interest. Thus, the development of new methodologies is neither necessary nor sufficient to make a proposal excellent. It therefore does not make sense to ask evaluators specifically about this in the proposed project, but the project should be assessed on its core questions and approaches. The reference to this evaluation element was therefore removed from the guidance for evaluators.

4.2   Evaluation of the applicant

Many points in the following sections were uncontroversial; we regarded some elements as obvious or even essential (e.g., the applicant having 'leading international expertise in the subject area' or having demonstrated 'originality of research'), and others as not relevant for the applicant's ability to carry out the proposed research (e.g., 'academic leadership roles' or 'developing strategies for societal impact'). Others needed clarification, or Council members had divergent views.

Overall, we agreed that the emphasis of the assessment of the PI should continue to be on whether they had demonstrated the ability to carry out ambitious and challenging research and had thereby contributed to advancing knowledge in their field. The only way to assess this in the first instance is through their track record in terms of research outputs, and indirectly, by the recognition they receive from their peers. Some of our discussions on how to deal with desirable qualities, such as 'being a good mentor' or 'actively engaging in open science', that are not strictly necessary for carrying out the proposed research project, are reported below.

Our discussions led to the subdivision of the new template into the three sections described above (personal details, research achievements and peer recognition, additional information on general noteworthy contributions and career path) where the central one should contain the information on which the evaluation is primarily based, with the others providing context. The previously used templates requested information from applicants that we did not find useful for the evaluation, and the corresponding sections have now been deleted. We describe our reasoning for those changes first and will then report our thinking on the new sections.

Supervision of graduate students or postdoctoral researchers

The CV and track record templates in the past asked how many PhD students and postdocs the applicant had supervised. The intention was to see evidence of experience in leading a research group and good mentorship. However, numbers alone are not sufficient to assess whether a PI has been a good advisor for the members of their research team. For example, it is not clear whether a large number or a small number is meaningful, even when taking into account that team sizes in different disciplines vary.

A somewhat better question would be what academic positions former team members have attained, and indeed this is used by some institutions and funders. However, this too is problematic. It ignores the fact that nowadays many young researchers do not even aim for an academic career, and it presupposes that academic careers are superior to other occupations. It also gives an unfair advantage to PIs at large, elite research centres over those from less well-known institutions or isolated locations, since for the latter it is much more difficult to attract top level candidates who are then more likely to find prestigious jobs – even if the research done in the group is ground-breaking and original.

This element therefore becomes a proxy that is in part a reflection of the excellence of the environment rather than the research team leader. Some institutions have come up with the solution of soliciting anonymous feedback from former team members (e.g., NWO in the

Netherlands), an interesting idea that may work well for a small number of candidates in faculty recruitments, but is impractical, if not impossible, for the many hundreds of applicants for ERC grants. We were unable to come up with any other reliable and fair measure for 'good mentorship' and thus concluded that this information should no longer be asked for.

Extramural funding

The amount of funding a researcher attracts is often seen as a measure for the importance, relevance or competitiveness of their work. However, a wide range of factors influence this parameter, including the availability of grants in different national settings and for different types of research. Some PIs have generous institutional funding and may never have needed or wanted to apply for grants in the past. Attraction of extramural funding is therefore another proxy that does not necessarily measure the importance of a researcher's work. The ERC therefore considers this point only to ensure that the proposed project is not already funded from other sources, and only at the second step of evaluation.

Sections of the new template

PERSONAL DETAILS

This section is for a brief overview of the applicant's research career: education and training, PhD and postdoctoral work, and current and past positions held. The applicant can provide comments on any of these steps, like work outside research institutions or universities, career breaks, or other special aspects, in the third section of the template.

RESEARCH ACHIEVEMENTS AND PEER RECOGNITION

This is what we consider to be the most important part of the track record: here the applicants provide the evidence for their ability to carry out demanding and original research. In many fields this evidence consists of publications that are recognized by the research community to have reported major advances, often (but certainly not always) published in leading journals. We recognize that such evidence is field-dependent and there are high-quality research outputs other than publications. Evidence of peer recognition can help evaluators complement the view of the applicant they have formed based on the research outputs. While not all Scientific Council members shared this view, the majority favoured inclusion of evidence of peer recognition in the track record.

Research achievements

The ERC has already made it clear in the past that evaluations should not focus on quantity but on quality and that inappropriate metrics (such as the Journal Impact Factor) should not be used in the evaluation of applicants. But we also take note of the frequently heard complaint that evaluators cannot be expected to read every paper the applicant has ever published.

The new template takes account of this in two ways. First, the number of outputs is limited to ten (with an emphasis on more recent ones), and it is no longer specified what format such outputs should or might have. Thus, it is possible to list, for example, datasets, open-source code or software that are widely used, expeditions that yielded important data,

granted patents, prototypes, or any other type of major research output. Secondly, the person best qualified to explain the importance and impact of their past research and the nature of the advance in knowledge they have achieved is the applicant (though they may of course not be the most objective). The new template therefore encourages the applicants to provide such explanations in brief narratives.

The old track-record 'profiles' of ERC PIs contained the phrasing *'major international peer-reviewed multi-disciplinary scientific journals and/or [...] leading international peer-reviewed journals, peer-reviewed conferences proceedings and/or monographs of their respective research fields'*. However, some ground-breaking discoveries may only have been posted on pre-print servers, been published in niche or specialist journals, while others may be in entirely different formats or platforms, and in some disciplines national publications may be the most relevant and important.

This specification has therefore been deleted.

We reaffirmed our position that quantitative metrics must be used responsibly. Panel members are instructed to focus on the scientific content of the researcher's achievements and to refrain from using surrogate measures of the quality of research outputs, such as Journal Impact Factors.

Peer recognition

It is clear that applicants cannot all be judged by the same standards. For example, more junior applicants are less likely to have been asked to act as organizers of major international conferences or invited to present as keynote speakers. Prizes are common in some fields and almost non-existent in others. While feedback from the evaluation panels illustrates that the panels are aware of such differences and take them into account, explicit guidance for evaluators has been put in place.

The new templates no longer ask for any specific elements of peer recognition, but leave it open to the applicant what to list, and to use the narrative component to explain the context and the significance of the listed items.

Narrative elements

Narrative CVs are, by nature, more subjective than traditional CVs. which might make them more difficult to compare with each other. Indeed, in the first years of the ERC, applicants were asked to describe their 'leadership potential', which resulted in a wide range of non-comparable inputs, from unstructured essays to terse one-liners. Narrative CVs are also typically less standardised than traditional CVs. This could make them more time-consuming to read and evaluate, particularly in situations where a large number of CVs need to be reviewed.

The narrative format could be used to misrepresent achievements or skills, and different cultures have different norms and expectations around 'storytelling' and self-presentation. Therefore, narrative CVs could inadvertently disadvantage individuals from cultures where self-promotion or certain forms of storytelling are not the norm. Writing a compelling narrative CV requires strong writing skills. Therefore, narrative CVs could inadvertently

disadvantage individuals who are less skilled or comfortable with writing, even if they are highly skilled in their field of research. Nevertheless, we felt that voluntary narrative elements can provide a more comprehensive view of a researcher's career, contributions, and potential. This is particularly the case when they are used to complement other assessment tools and metrics. They can highlight important aspects of a researcher's work that may not be captured by traditional metrics.

Two mechanisms will hopefully counteract the potentially problematic aspects of the narratives. There is an overall limit to the length of the section on the CV and track record, so applicants have to choose how to allocate space to the various elements they wish to report, and secondly, we included a request to explain achievements in neutral terms. In addition, experience at the ERC shows that panels are wary of boastful applications. The instructions in the application form say: '*You may include a short, **factual** explanation of the significance of the selected outputs, your role in producing each of them, and how they demonstrate your capacity to successfully carry out your proposed project*'.

The responsibility for selecting and explaining the research outputs and elements of peer recognition is thus left entirely to the applicant.

OTHER CONTRIBUTIONS

Engagement in peer review, teaching, academic leadership and other contributions

Most researchers are engaged in academic activities that do not directly contribute to their research. For university staff, the most prominent and often time-consuming of these is teaching. All successful researchers are asked to participate in peer review, whether of manuscripts or grant or fellowship proposals, whether as individual referees or as members of evaluation panels. Related functions, but more peripheral to the actual research enterprise, include the chairing of committees, presiding academies or learned societies, developing training programmes, public outreach and other major contributions to the community. These activities are crucial for the proper functioning of fundamental research, and should be highly valued, but they are not sufficiently rewarded, as noted in many of the recent discussions and documents on research assessment.

A generally accepted way of recognizing and rewarding these desirable activities has yet to be found (researchers' peer review record in ORCID, for example, or teaching assessments in universities provide some starting points). One important question in our discussions was whether in the context of the ERC's evaluations, they should be recognized in some way and be discounted against past scientific output, the argument being that researchers with such a constraint on their time face a higher hurdle to assemble a large portfolio of research outputs. This is particularly pertinent for PIs at universities with a heavy teaching load. However, the new CV and track record no longer asks for quantity in output, nor for 'prestige' proxies. The excellence of the researcher should be measured by the quality of the outputs they list, and not by the bulk they have produced. We also acknowledge that not all researchers have equal capabilities or equal opportunities to take on such functions, regardless of how excellent they are in doing frontier research. This would argue against taking such activities into account when assessing the applicant.

Nevertheless, we agree, in line with our having signed the Agreement on Reforming Research Assessment, that researchers contributing broadly to the functioning of the research system is extremely important and their commitment should be recognized. Therefore, particularly noteworthy contributions to teaching and other outstanding contributions to the research community should be listed to provide context in the assessment of applicants' research achievements and peer recognition, even if they do not directly enter the evaluation of these elements.

4.3 Weighting of the assessment of the proposed project and the assessment of the applicant

The focus of the evaluation should be on the scientific content of the proposal. In the past, both the proposal and the applicant were numerically graded in the first step of the evaluation, on equal scales. As a result, the application from an apparently 'strong' PI with a weak proposal could end up with a similar combined score as one from a less accomplished PI with a brilliant proposal. This exposes the evaluation to a higher risk of unconscious bias.

For example, it has been observed that researchers based at highly visible and well-funded institutions, or at well-connected centres of excellence are more likely to be awarded ERC grants than those in remote or unknown institutions. It is disputed whether this is exclusively because the former institutions host a larger number of excellent researchers, or whether this is due to, or at least exacerbated by an unconscious bias against less well-known applicants. The ERC guidelines are explicit in stating that the host institution of the researcher should not be an element hat enters the evaluation of the applicant's excellence, and we have explained above that we have removed another element (list of previously funded grants) from the evaluation elements that would contribute to such a Matthew effect.

One method for avoiding such biases is double-blind review, but we feel that it would be almost impossible in such a setting to assess whether an applicant has the capacity to carry out the proposed project. We discussed whether the evaluation should focus exclusively on the scientific excellence of the proposal and ignore the identity of the applicant at least at the first step. However, most of the Scientific Council members found it important to understand the track record and CV of the applicant to decide whether to select the application for in-depth evaluation in the second step.

Instead, we sought a way to put a stronger emphasis on the evaluation of the project proposal starting with the initial ranking of the applications. During the individual remote evaluation, panel members would first evaluate the research project without considering the information on the applicant and decide on a score, and then evaluate the applicant. This would avoid the applicant's identity and reputation influencing the project score. In the past, the project and the PI were both scored in parallel on a scale of 1 – 5, and the scores were then added up. Not all panels took this sum of scores as guidance for their initial ranking, but some did. We have now stopped this practice: only the project is scored on a numerical scale, and only this score can be used to rank the list of proposals before the panel discussion. The applicant is given an overall qualitative assessment with five options (outstanding / excellent / very good / good / non-competitive), which is not converted into a

numerical score and is not combined with the score for the research project. In this way, the evaluation should give more weight to the project than to the applicant. This has been a practice in most ERC panels already, and we now explicitly indicate it in the ERC Work Programme.

5. Implementation of changes, guidance to applicants and evaluators

The evaluation process must be as fair and as transparent as possible.

The 90 peer review panels of the ERC (28 each for Starting, Consolidator and Advanced Grants, five for Synergy Grants, and one for Proof-of-Concept Grants) that meet each year decide independently on the final ranking of the proposals submitted to their panels. As discussed above, even though the ERC's evaluations are based on the 'sole criterion of scientific excellence', we have always provided written guidance and briefings for panel members on what qualities or elements are most relevant to consider during the evaluation and to applicants on what to include in their application. Applicants and panel members must have a clear understanding of what is expected of them and, in particular, the same understanding of how and for what purpose any element of information from the applicant is used by the panel for the evaluation. Explicit guidance on evaluation elements will also help to level the playing field for all applicants, regardless of their background or prior familiarity with ERC grants.

It is important to balance the need for a fair and comparable treatment of all applications across all panels with the freedom for the panels, whose members are selected by the Scientific Council for their expertise and standing in their research fields, to act according to their own insight. However, it is often the panels themselves who ask for guidance. Left to themselves panel members can develop their own heuristics that are likely to be sub-optimal and to differ from one panel to the next.

The briefing documents provide information on topics on which the scientific officers of the ERC Executive Agency frequently receive questions, or that come up during oral panel briefings.

Despite the need for guidance discussed above, our challenge in providing such guidance was not to be too prescriptive. This would run counter to the philosophy that the applicants should have maximum freedom and flexibility to present their work in a way that best represents its value and significance.

For example, in past calls applicants were asked to present a track record of achievements based on a profile for each type of grant. Applicants to the Advanced Grant calls were restricted to presenting a track record of significant research achievements in the last 10 years. Among the problems with such a strict cut-off is the fact that it disfavours applicants who took career breaks or return to research from leadership positions in academic management, politics or industry. For the new calls, we removed the profiles and created a single common form for all calls.

Now, rather than strictly defining an exact period of ten years for the research outputs, all applicants are asked 'to provide a list of up to ten research outputs […] with an emphasis on

more recent achievements' on the assumption that panels will be able to judge which 'recent' period is appropriate for any given CV and whether a particular achievement was relevant to the application.

The guidance for applicants now provides examples for the categories of research achievements and peer recognition, but not for 'other contributions to the research community'. We had a long list of potential contributions which researchers may make to the research community but were concerned that giving only a subset of examples could be seen as the Scientific Council being interested only in those, while others not listed would not count.

6. Conclusion: an ongoing process

Many other topics were discussed, including potential bias against applicants who are at an earlier career stage than their competitors, or those working in less popular fields, or at less prestigious institutions; feedback provided to applicants needing to be meaningful and constructive; the practical implementation of any changes; the challenge of measuring and comparing qualitative aspects. We also looked at topics like partial randomisation and other innovative approaches to the allocation of research funding. These discussions will continue in the future.

The Scientific Council continuously solicits input from the evaluation panels, and we have now set up a procedure for regularly responding to the input and taking action where necessary.

The effects of the changes we have made will be closely monitored and could be refined in future following feedback from the applicants, panel members, scientific officers of the ERC Executive Agency and the scientific community.

7. Annex 1 – Background Material

Statements and policy reports by major actors at European level

− European Commission, Directorate-General for Research and Innovation, *Towards a reform of the research assessment system – Scoping report,* Publications Office, 2021, https://data.europa.eu/doi/10.2777/707440

− Council of the EU (May 2022) *Conclusions on research assessment and implementation of Open Science* (adopted on 10 June 2022) https://www.consilium.europa.eu/media/56958/st10126-en22.pdf

− Initiative for Science in Europe (ISE) (February 2022), *Centrality of researchers in reforming research assessment* https://initiative-se.eu/paper-research-assessment/

− League of European Research Universities (LERU) (January 2022), *A Pathway towards Multidimensional Academic Careers - A LERU Framework for the Assessment of Researchers* https://www.leru.org/publications/a-pathway-towards-multidimensional-academic-careers-a-leru-framework-for-the-assessment-of-researchers

− Science Europe (July 2020), *Position Statement and Recommendations on Research Assessment Processes* https://www.scienceeurope.org/media/3twjxim0/se-position-statement-research-assessment-processes.pdf

− Marie Curie Alumni Association (MCAA)(December 2019), *Policy Brief -Towards Responsible Research Career Assessment* https://doi.org/10.5281/zenodo.3560479

− European Alliance for the Social Sciences and Humanities (EASSH), *Improving Research Impact Assessment in Horizon Europe: A Perspective from the Social Sciences and Humanities* https://eassh.eu/Position-Papers/Improving-Research-Impact-Assessment-in-Horizon-Europe--A-Perspective-from-the-Social-Sciences-and-Humanities~p1247

− European Network for Research Evaluation in the Social Sciences and Humanities (ENRESSH)(2020), *ENRESSH Policy Brief: Research Evaluation.* https://doi.org/10.6084/m9.figshare.12049314.v1

Research assessment practices and innovative approaches towards the allocation of research funding

− Strinzel M, Kaltenbrunner W, van der Weijden I, von Arx M, Hill M (March 2022), *SciCV, the Swiss National Science Foundation's new CV format.* bioRxiv preprint. https://doi.org/10.1101/2022.03.16.484596

− Curry, Stephen; de Rijcke, Sarah; Hatch, Anna; Pillay, Dorsamy (Gansen); van der Weijden, Inge; Wilsdon, James (2020). *The changing role of funders in responsible research assessment: progress, obstacles and the way ahead* (RoRI Working Paper No.3). Research on Research Institute. Report. https://doi.org/10.6084/m9.figshare.13227914.v2

− Luxembourg National Research Fund (FNR) (February 2021), *Narrative CV: Implementation and feedback results* https://www.fnr.lu/narrative-cv-implementation-and-feedback-results/

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8. Annex 2 – Executive summary of the Analytical Workshop

The ERC Workshop on Research Assessment took place on 14-15 June 2022 on the premises of the ERC Executive Agency. The aim of the two-day workshop was to reflect on current ERC assessment principles and practices, and to provide input to the ERC Scientific Council's Task Force on Research Assessment about pros and cons of the possible use of innovative evaluation systems.

15 experts, representing several disciplines and organisations, and with different geographical backgrounds, from different careers and career stages gathered with members of the ERC Scientific Council and employees of the Agency.

The workshop followed the Chatham House Rule.

Structured discussions were used as the main mechanism for elicitation.

Below is a summary of the main points, which are articulated in more detail in the full report.

Input 1. Consider (re)defining 'excellence'

The current usage of the term 'excellence' as the only criterion for assessment was discussed, with emphasis on scientific productivity, which in the opinion of several participants had produced a toxic environment in many parts of the research enterprise. It was suggested that the ERC should focus more on a healthy research culture, rewarding principles and practices like Open Science, EDI (Equality, Diversity, and Inclusion), integrity, collegiality, and transparency. Refocussing in this manner would not harm the quality of scientific results but on the contrary could improve them.

Others felt that the ERC should resist the push to include in the assessment parameters that were not essential to carry out the project, including, for example, services to the scientific community. Such additional evaluation elements could instead be used in a different way, for example by giving them a different weight or using them as tiebreakers.

Input 2. Deal with unintended biases in evaluations and improve the functioning of panels

Concerns about biases in the current ERC evaluation system were expressed especially in relation to the functioning of the panels.

Some participants said that being a human activity, the selection process could not be expected to be completely unbiased, and this had to be accepted. Others thought biased decisions were not tolerable, and all possible measures should be taken to prevent them.

The structure of panels could be re-thought in its entirety. The importance of extreme care in the selection of panel members was stressed, so that selection behaviours determined by belonging to a certain community ('scientific community games') would be avoided. It was suggested that the chairs or the co-chairs of panels could be Scientific Officers from the Agency with broad expertise and experience. This would prevent some gaming, help to address horizontal issues, and ensure consistency across panels. Others felt that decisions on funding should not be influenced by employees of the Agency.

Input 3. Consider revising the order of assessment of research and researcher

The order in which the project and the PI are evaluated may have an impact on the outcome. Several participants felt that focussing on the person could lead to more diverse or new research topics being considered. Others, instead, argued that focusing on the project was better suited for bottom-up, outstanding proposals and should remain the priority.

Moreover, emphasising the research idea rather than the past performance of the PI might result in more proposals from women, from the so-called 'widening countries' and from less well represented fields.

Input 4. Consider adopting a version of 'narrative CVs'

The use of narrative CVs may be an effective tool to help change the current research culture, which has been heavily influenced by quantitative bibliometric measures as proxy for quality of research.

Some funders have introduced narrative CVs with the aim to better assess the context of researchers' careers and outputs. Narrative CVs give space to contributions other than publications, while also providing the opportunity to present evidence of those contributions. The experience so far suggests that evaluating these CVs takes reviewers no more time than evaluating traditional CVs. Narrative CVs could counterbalance the current over-emphasis on quantitative metrics.

The ERC could consider this approach for its evaluations.

Input 5. Consider partial randomisation for selection

Evaluation panels often agree on the top-quality proposals and on proposals that should not be funded, while there is less agreement for those in the so-called 'grey areas'. In this grey zone subjective factors rather than quality may play a greater role, which may introduce biases. Practical solutions to this problem, including partial randomisation, have been implemented by some funders.

Drawing on their own experiences, participants suggested that evaluation processes that include (partial) randomisation may encourage the submission of proposals for risk-taking research, which is one of the objectives of the ERC funding schemes.

9. Annex 3 – List of dimensions or elements

The table below was the starting point for the discussions in the task force. It does not reflect the structure of the new or old CV or track record. The items were collected from the documents in Annex 1, and the wording is directly from those documents, or paraphrased or slightly simplified.

Dimension	Elements
Recognition in the scientific community, expertise, scientific impact and influence, research strategy	leading international expertise in the subject area
	contribution to the advancement of knowledge in the field
	provide intellectual thought leadership
	setting the international research agenda
	development of research and funding strategies
	developing strategies for societal impact
	originality of research
	participation in national and international scientific networks and conferences
	invitations to present as key-note speaker or invited lecturer
	leads major research conferences (membership in the steering and/or organising committee)
	prizes and honours for research (including artefacts with documented use, such as architectural or engineering design)
	editing or reviewing for major academic journals
	elected to research-related leadership roles in the community
	reputation and recognition by peers (including academy memberships)
Research output	recognized publications (peer-reviewed journal articles and conference proceedings, monographs)
	portfolio of high-quality research outputs other than publications (including data, databases, software, models, methods, theories, algorithms, protocols, workflows, exhibitions, policy contributions, open and citable peer reviews, educational products, clinical guidelines)
	preprints
	research monographs and translations thereof

	scientific/technological impact through high quality-research and/or citations
	number of publications (in relation to the individual's career)
Open science practices	open access to (past/future) publications, data, and other research outputs
Innovation leadership	patents
	examples of innovation leadership
Track record in funding	winning competitive funding
	research projects and their funding
	ability to acquire third-party funds
Collaborations and interdisciplinarity	develops multi-, inter-, trans-, or cross-disciplinary research activities
	leads collaborative research projects (including research expeditions)
	maintains international research collaborations
	intersectoral collaboration (e.g., industry-academia collaboration; collaboration with hospitals)
Advancement and enablement of junior researchers	excellence through the performance of others
	high research student completion rates
	nurtures talent and demonstrates engagement with researcher training and development
	demonstrates inclusive leadership and provides a positive working environment
Teaching, mentoring activities	workshops or summer schools
	regular teaching activity (other than workshops or summer schools)
	supervision of students / PhD candidates, postdocs and colleagues
	mentoring of other researchers in their field and support to the advancement of colleagues
Research community	editing, reviewing, refereeing, committee work
	contributions to the evaluation of researchers and research projects
	organisation of events
	contributions to increasing research integrity, and improving research culture

	appointments to positions of responsibility such as committee membership and corporate roles within organisation or sector
Broader society	citizen science
	societal engagement
	engagement with industry and the private sector
	engagement with the public sector, clients, and the broader public (including patient care)
	advise policymakers at local, national, or international level
	provide information through the press and on social media
	science communication through any means (including radio interviews, exhibitions for the general public, etc.)
	societal or economic impact
Developmental perspective	career stage
	leadership potential
	research independence and evidence of maturity
	international or intersectoral mobility
Personal context	unconventional career paths
	career breaks / part-time work
	personal circumstances
	belonging to an underrepresented group
	general and research-specific ethics and integrity standards are met
	gender equality / gender dimension
	diversity in the broader sense (e.g., racial, or ethnic origin, sexual orientation, socio-economic, disability)
	equal opportunities and inclusiveness
	security issues
	freedom of scientific research