



Research integrity: a landscape study

Annex D: Qualitative interview summary

June 2020



Research integrity: a landscape study

Vitae in partnership with the UK Research Integrity Office (UKRIO) and the UK Reproducibility Network (UKRN)

Commissioned by UK Research and Innovation (UKRI)

Authors

Dr Janet Metcalfe, Vitae

Dr Katie Wheat, Vitae

Professor Marcus Munafò, UK Reproducibility Network

James Parry, UK Research Integrity Office

Vitae, © 2020 The Careers Research and Advisory Centre (CRAC) Limited

Acknowledgements

We are grateful to Research England, UKRI, and their External Advisory Group for their support and guidance during the project and would like to record our thanks to the interviewees, workshop participants and survey respondents for sharing their time and experiences.

External Advisory Group members: Dr Steven Hill (Research England - Chair), Dr Simon Kolstoe (University of Portsmouth), Neil Jacobs (UKRI), Prof Ottoline Leyser (University of Cambridge), Prof Malcolm Macleod (University of Edinburgh), Dr Elaine Morley (UKRI), Leonie Shanks (Universities UK), Dr Karen Salt (UKRI), Dr Netta Weinstein (Cardiff University), and Dr Frances Downey (UKRI). Research England project support was provided by Dr Helen Snaith and Dr Lewis Dean and was greatly appreciated.

We also thank other members of the project team: Karen Haynes (Frontinus), Dr Robin Mellors-Bourne and Meryem Yilmaz (CRAC), Dr Anne-Marie Coriat (the Wellcome Trust), Dr Maura Hiney (the Health Research Board, Ireland), and Dr Robby Thibault and Dr Jackie Thompson (the University of Bristol).

The interpretations and opinions in this report are those of the authors and may not reflect the policy positions of UKRI.

Contents

1	The aim of this annex.....	4
2	Methodology used.....	4
3	Interview limitations.....	4
4	Participants.....	4
5	Defining research integrity	5
6	Strongest influences on research integrity	6
6.1	Individual level	6
6.2	Departmental/local level.....	6
6.3	Institutional level	7
6.4	Discipline level.....	7
6.5	UK level	7
6.6	Global level.....	8
7	Influence of funders	8
8	Support for early career researchers.....	9
9	How to make research more open, honest, rigorous, caring and accountable?.....	10
10	Gaps in knowledge	11
11	Conclusions	12

This summary of the qualitative interview outcomes provides further background to the 'Research integrity: a landscape study' report, as one of the data-gathering activities that informed the development of the survey and contributed to the results presented in the report.

Notable findings from the interviews can be found within the main report, where relevant. However, this annex provides a fuller exploration of the salient themes from the conversations which may be useful for those wishing to build on the study or place the results in a more detailed context.

1 The aim of this annex

Interviews with key stakeholders were an important element of the project, alongside the survey and workshops. Interviews were held during two phases of the project. At the start, five initial interviews were held with senior representatives at stakeholder organisations. The aim was to explore potential pressures and incentives at the UK and organisational level in order to inform the literature review and the development of the large-scale survey. An additional 15 interviews were held with a range of stakeholder organisations representing government, funders, publishers and sector bodies to ensure the project covered the breadth of incentives and drivers that may impact on research integrity and to validate emerging findings. A full list of interviewees is included in Section 4.

2 Methodology used

Organisational-level engagement took place through semi-structured telephone interviews of 45-60 minutes with high-level representatives from a selection of organisations. Interviewees were guaranteed confidentiality, with findings reported anonymously and not shared beyond the project team. Written informed consent was given for interviews to be recorded and transcribed. All data was stored securely and was to be deleted at the end of the project. Questions explored the issues of research integrity, positive and negative drivers, and existing evidence for research integrity behaviours.

3 Interview limitations

The interviews covered a wide range of organisations with different functions in the research ecosystem. Inevitably these brought different knowledge of and perspectives on the incentives and drivers and how these may impact on the behaviours of researchers and research integrity. Although not all the stakeholder organisations had a direct interest in research integrity, in all cases they were able to contribute their views on the drivers within the research ecosystem.

The views of the interviewees did not necessarily coincide with the positions of their organisations, and many described their personal experiences. This was particularly so where the interviewee was a current academic, as in the case of council members. However, the diversity of interviewees and their views has been invaluable in framing and validating the outcomes from the survey and workshops.

4 Participants

Interviews were held with a range of stakeholder organisations within the research ecosystem that have an interest in research integrity. Organisations (see Table 4.1) were selected to cover a range of disciplines and types of organisation. Interviewees were senior managers within the organisation or members of their council.

Table 4.1
Interview stakeholder types and their organisations

Stakeholder type	Organisations interviewed
Funder	Cancer Research UK (CRUK) National Institute for Health Research (NIHR) Wellcome
Government	Department for Business, Energy and Industrial Strategy (BEIS) Government Office for Science (GO-Science)
Professional body	Royal Society Royal Academy of Engineering (RAEng) Royal Society of Chemistry (RSC) (and as publisher)
Publisher	Nature Taylor & Francis Association of Learned and Professional Society Publishers (ALPSP)
Sector body	Association of Research Managers and Administrators (ARMA) British Academy (BA) Council of University Classical Departments (CUCD) GuildHE Higher Education Policy Institute (HEPI) UK Research Integrity Office (UKRIO) UK Reproducibility Network (UKRN) UK Research Staff Association (UKRSA) Universities UK (UUK)

5 Defining research integrity

The usefulness of following the Concordat to Support Research Integrity was highlighted in a quarter of the interviews. Both a publisher and a funder suggested there should be more of a focus on equality, diversity and inclusion (EDI) and on open access.

Some interviewees focused their definition of research integrity on research outcomes, while others described it in terms of researcher behaviours, with one sector body noting that the latter approach could have the effect of making research integrity seem aspirational. Table 5.1 shows examples of phrases used by interviewees. There was general agreement that research integrity encompasses all stages of the research lifecycle.

Table 5.1**Research- and researcher-focused definitions of research integrity**

Language type	Examples of phrases
Research-focused	Trustworthy research to feed into future research Good research practice Steps in place to get genuine data Data integrity you can rely on to build upon
Researcher-focused	Behaviour in following ethical standards in the conduct of research Good research conduct Fair treatment of people, fair credit

6 Strongest influences on research integrity

Interviewees were asked who or what has the strongest influence on levels of research integrity.

6.1 Individual level

- People come into research with good intentions to do good research. However, they learn that to progress in their careers they have to publish frequently and preferably in high journal impact factor (JIF) journals and are potentially swayed – “bent out of shape” - by the mantra ‘publish or perish’.
- The status and power of individual principal investigators is such that they can strongly influence the research culture and reinforce or negate incentives.
- Research integrity is ultimately delegated down to trust in the individual. The individual conscience is the arbiter of behaviours because positive incentives are insufficiently systemic.
- There is the potential positive power of grassroots networks but these are currently weak influences.

6.2 Departmental/local level

- Good local role models – “people you look up to” - are important exemplars for research integrity.
- The span of control of researcher leaders was seen as a potential impact on research integrity levels. As the size of research groups increase, can the oversight of integrity levels be maintained?
- How researchers are inducted or socialised into research will influence their behaviours, including research integrity. One interviewee mentioned the role doctoral training centres.

- Collaborative research was seen as good for research integrity. For example, data is likely shared to be at an earlier stage and there will be more scrutiny by other researchers.
- All interviewees, including publishers, saw the pressure to publish in high-JIF journals as having a strong and mostly negative influence on researchers and potentially on research integrity.
- Pressures and risks are highest in “fashionable subjects” where the race to publish is paramount.

6.3 Institutional level

- How well institutional leadership communicates and drives policies, from research strategy to codes of practice, influences research integrity.
- The preservation of institutional reputation and league table positions were seen as risks to research integrity levels as problems may be “swept under the carpet”.
- Promotional frameworks were seen as relying too heavily on research outcomes, publication rates and citation indexes.
- There is a complex relationship between institutional investment in and support of their “transitory” research staff populations and how invested those staff are in their institution, and potentially research integrity.

6.4 Discipline level

- Where there is a positive ethos towards research integrity in a discipline, the influence can be strong. Professional bodies are also influential in these cases.
- Conversely, some disciplines take a tick-box attitude towards research integrity or do not see how it relates to them.
- Disciplines that are more collaborative may have fewer issues with research integrity.
- Reproducibility studies and journalism that are not robust themselves may have a strong influence due to the publicity they stimulate.

6.5 UK level

- The increased competition for research funding and the significantly increased amount of research that is taking place lead to more issues relating to research integrity.
- Funders’ more specific grant requirements and their drive for more open research and open data are positive influences on research integrity.
- However, funders are still focused on the outcomes of research and less so on the process. The currency of academic recognition needs to change.
- Government policy sanctions have a top-down influence on institutional policy, but local leadership and culture can have a stronger influence.
- The REF provides both positive incentives (through the revisions for REF 2021) and negative incentives (there are reports of institutions responding by moving academics to teaching-only contracts).

- The Concordat, the Declaration on Research Assessment (DORA) and other initiatives were seen as positive but come up against entrenched beliefs and behaviours.

6.6 Global level

- The academic reward system is underpinned by the publishing system, creating incentives based on research outcomes and not on the process of research.
- Conversely, the peer-review process is seen as positive, although peer review is not necessarily done to a consistent enough standard.
- Journal editors are looking for “shiny results”, creating difficulties in publishing “boring but important research”.
- Journalism and social media can be positive in shining a light on research or negative in “biased reporting” and “leading witch hunts”, the later potentially “driving accountability underground”.

7 Influence of funders

Interviewees identified both positive and negative developments in funders’ role in ensuring research integrity.

Positive aspects:

- Bringing the research councils under the UKRI umbrella enables them to send stronger messages to the sector.
- Funders’ recent attention to the research culture and environment is an important aspect of supporting research integrity. Two funders reported their organisations being proactive on open science and research culture.
- Funders’ publishing platforms are encouraging a broader range of research outputs.
- Provision of more funding for self-reflection by the sector: “research on research”.
- The changes in REF 2021 requirements in terms of publications are a step in the right direction.
- Some principal investigators are starting to see that the rules of engagement in securing funding are changing and starting to adapt their behaviours to stay ahead of the curve.

Negative aspects:

- REF 2021 will be gamed in new ways: how to anticipate and counter this?
- Research and data management plans submitted as part of grant applications are often prepared with a tick-box attitude and unchallenged. Funders need to set stronger requirements on data management, scrutinise plans more carefully and interrogate to see whether they are being met. Sanctions are unclear within the guidance.
- Potential unintended consequences, for example from the move to open access leading to a reduction in scholarly publishing income, thereby reducing the research funding pot of professional bodies with publishing arms.

- Sense of frustration among funders that their funding requirements only have an indirect and fairly weak influence on researchers and that strengthening these may drive behaviours underground.

Interviewees proposed ideas for systemic reform and more positive incentives, noting that prevention is better than cure and most effective in the long run:

- Is there too much research? Is there potential to reduce the quantity and increase the quality of research by building elements and funding into grants to enable higher levels of research integrity? It could be productive to include within funding and selection criteria aspects of the research process that will promote higher levels of research integrity, for example data checking and curation, and research integrity training, as opposed to focusing on research outcomes. Open and rigorous research integrity practices are time-consuming, therefore costly.
- Change the basis of funding from individual principal investigators to project teams.
- Mandate training to ensure researchers have initial research integrity training and keep up to date, possibly through an accredited body – in other words, a licence to research. Provide funding for leadership training.
- Require research integrity plans within the REF, as has happened with EDI. Monitor the follow-through by institutions.
- Increase incentives for outstanding scholarly behaviour, such as mentoring and collaboration. Use prizes to channel academic egos in positive directions.
- Increase support for outward-facing research by funding more collaborative, user-engaged research and translational activities which tend to have greater resilience and be more reliable.
- Increase the transparency and reach of research by getting results out from behind paywalls and in digestible forms to reach wider audiences.
- Improve the transparency and openness of government-funded research, which can vary from one government or department to another.
- Funders should spend more time listening to the grassroots and learning from each other.

8 Support for early career researchers

There was broad agreement that research integrity support for early career researchers was very variable and dependent on the influence of immediate supervisors and research leaders. Some interviewees raised the issue of the responsibility of the institution as the employer, and the attitudes within the local research environment. There can also be a conflict between what is communicated in training courses and research group norms; training uptake can also depend on supervisors' attitudes.

Induction was seen as an important intervention point for research integrity messages to start embedding awareness early, particularly in doctoral training. There were multiple concerns about the range and effectiveness of research integrity training and sometimes of research methods training. Face-to-face training, using case examples, was seen as more effective than online training. Some interviewees mentioned the importance of training in experimental design and how to challenge effectively, and training in statistics. Training was

an important part of the 'solution' in reducing the amount of wasted research money because mistakes are not exposed until publishers 'mop up'.

Early career researchers were sometimes seen as more aware of and more engaged with effective research integrity tools, such as open data, than more senior researchers. One interviewee asked whether there was scope for reverse-mentoring, in other words mentoring upwards.

Several interviewees identified the training needs of research leaders, with some noting reluctance of senior researchers to engage with leadership and management training. This could be countered by promotion criteria including developing the next generation of researchers and/or mandating accredited training to ensure leaders keep up to date.

Disciplinary differences emerged with some interviewees claiming that not all early career researchers may see how research integrity applies to them. It was suggested that peer reviewers in the humanities should look more closely at methodologies used. They could have an important role to play in providing constructive feedback to researchers, which they may be missing by not being in a group environment.

There was a view that not all institutions have research integrity officers. How institutions communicate their research integrity code of conduct is important and there is a need for more institutional ownership of their responsibility for clear communication of standards and robust whistleblower protection. Researchers need to be clear what is expected of them.

9 How to make research more open, honest, rigorous, caring and accountable?

Interviewees were asked what changes could be made at different levels within the research ecosystem to improve research integrity.

At an individual level researchers need to take responsibility for their research integrity levels. Getting experience of and working with different research groups and across disciplinary boundaries can be empowering.

At the departmental or 'local' research group level it is important to lead by example and be open and honest about one's own 'failings', particularly for senior researchers. At this level the span of control is small enough to be able to assess researchers through direct knowledge and not by proxies such as JIF. Performance reviews could be used partly for research integrity purposes, for example to check research approaches or whether ethical approval is needed. A culture of continued professional development and engagement with training could be encouraged.

Within institutions there could be better communication of research integrity policies. Institutions need to provide better data management, curation and archiving infrastructure. The responsibilities of research integrity staff could be extended to include pre-publication checking and providing more training. More leadership and research integrity training should be provided.

All institutional policies that have a research integrity aspect, for example policies on intellectual property rights, should be explicit about research integrity. Press releases

relating to research activities should have a research integrity check. Ethical approval processes and research ethics audits could be extended to be broader research integrity checks.

Institutions collectively could be more active in sharing good practice and encouraging bottom-up networks. They could look at ways to ensure that ethical approval processes are comparable across the sector.

Within disciplines, subject associations should check the state of play regarding research integrity and ethical approval processes. More research is needed into differences in accepted behaviours across disciplines: one interviewee posited that more misconduct cases were coming to light as there was more interdisciplinary research. Attention should be paid to disciplines where research traditionally does not involve human subjects, such as computer science, as they move into new research areas, such as big data and Artificial Intelligence (AI), without using appropriate frameworks.

The UK research system has the potential to be world-leading on research integrity due to a strong, well-connected research base. It needs to adopt a culture of continuous improvement, such as in the NHS, not one based on blame. There is scope for the government to lead by example by integrating research integrity more effectively into policies. The language of research integrity is very science-focussed and more needs to be done to communicate with humanities, arts and social sciences researchers. More could be done to promote the culture of good research integrity with institutional leaders.

At a global level publishers could act together to ensure consistent research integrity and publishing requirements and to influence training, such as in publication ethics. There is a need to increase ways of publishing quickly, for example through preprints and open research papers. The importance of the peer-review process to research integrity should be recognised and that it is potentially at risk from lower numbers and lower expertise of peer reviewers. International collaborations pose specific challenges due to differing ethical review systems.

10 Gaps in knowledge

Interviewees were asked whether there are any limitations or gaps in understanding of research integrity in the UK system; in other words, are there any areas of research integrity that require further exploration?

- There is a lack of evidence in most disciplines on the levels of questionable research practice, research misconduct and reproducibility.
- More knowledge is needed on the impact of the globalisation of research and bringing together different cultural norms in terms of research approaches and research integrity.
- A review is needed of institutional policies and practices relating to research integrity, for example codes of practice, processes for reporting misconduct, and whistleblowing.

- Can we build on research ethics audits conducted by institutions to provide a broader audit of research integrity?
- What constitutes best practice in the communication of expectations on research integrity to all researchers?
- How can we be confident in the integrity of research conducted 'outside institutions', for example in tech start-ups, or by non-funded independent researchers?
- What are the research integrity implications of AI and other potentially disruptive technologies?

11 Conclusions

There was broad consensus across the interviewees that ensuring high levels of research integrity within a complex research system is challenging. The complex interplay between the more distant forces at the UK level and even institutional level, and researchers and research leaders in different, often very localised cultures makes generalisations difficult. Implicit beliefs and historic ways of working are in tension with the explicit policies of funders, publishers, institutions and so on.

The importance of all actors needing to contribute to ensuring high levels of research integrity came through strongly. There is a need to bring different levels of the system together to really understand the issues and achieve more cross-sectoral communication. Multiple actions by multiple stakeholders are required over perhaps a decade to really make a difference.

There was general agreement that to effect culture change positive incentives are needed; compliance cultures are negative, and people work around sanctions. With the misconduct process sitting within institutions as employers, there is a need to create a positive culture within institutions around correcting the scientific record. The broad role of publishers in research integrity was also emphasised, for example in providing scrutiny, checking provenance and publishing retractions. Similarly, the role of funders in providing positive incentives to 'get it right' was underlined. Both funders and publishers noted the role of the research community in supporting research integrity, as it is the peer reviewers that make the funding and publication decisions.

www.ukrio.org

The UK Research Integrity Office (UKRIO) is an independent charity, offering support to the public, researchers and organisations to further good practice in academic, scientific and medical research. We promote integrity and high ethical standards in research, as well as robust and fair methods to address poor practice and misconduct. We pursue these aims through our publications on research practice, in-depth support and services for research employers, our education and training activities, and by providing expert guidance in response to requests for assistance from individuals and organisations.

www.ukrn.org

The UK Reproducibility Network (UKRN) is a peer-led consortium that aims to ensure the UK retains its place as a centre for world-leading research. This will be done by investigating the factors that contribute to robust research, promoting training activities, and disseminating best practice, and working with stakeholders to ensure coordination of efforts across the sector. UKRN works across disciplines, ranging from the arts and humanities to the physical sciences, with a particular focus on the biomedical sciences.

About Vitae

We are a non-profit programme, part of the Careers Research & Advisory Centre (CRAC) Ltd with over 50 years' experience of enhancing the skills and careers of researchers

Vitae and its membership programme are managed by CRAC, an independent registered charity (Registered Charity No 313164)