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Leading cross-disciplinary conversations around open, transparent and rigorous research: Findings from a series of focus groups

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Abstract

This article documents and reflects on a series of focus groups held at the University of Sheffield in Spring 2025 that brought together researchers across a range of disciplines, methodological approaches and career stages with the aim of initiating a conversation about the relationship between openness, transparency and rigour across different subject areas and research types. We explore the value of such work in prompting mutual reflection and facilitating researchers' positioning relative to this cluster of concepts, in addition to exchanging good practice and surfacing disciplinary and methodological assumptions. Cross-disciplinary exchanges are, we suggest, crucial in contesting the narrowness of dominant frameworks of open research which assume a homogeneity of methods that is problematic for many researchers, especially those in the arts, humanities and social sciences and those working in qualitative and interpretive traditions. We further highlight the potential of libraries and other professional services with a broad and inclusive disciplinary remit to facilitate dialogue and discussion of this kind.

Keywords

open research, cross-disciplinary conversations, academic libraries, research culture

Introduction

Dominant concepts and frameworks of open science[1] have been critiqued as being more applicable to some disciplines, methodologies and epistemological approaches[2] than others. Specifically, such frameworks have been considered more relevant to quantitative research in Science, Technology, Engineering and Mathematics (STEM) disciplines that proceeds from (post)positivist assumptions[3] than to qualitative and interpretive research in the arts, humanities and social sciences (AHSS). From a qualitative perspective in social psychology, for example, Huma and Joyce (2023, 1591) assert that 'Open Science (OS) [...] practices preponderantly address issues germane to hypothetico-deductive methodologies associated mainly with quantitative research' (see also Steltenpohl et al 2023; Tamminen et al 2021). Similarly, from a humanities perspective, critics including Knöchelmann (2019, 4) contend that '*open science* does not address the unique characteristics of the humanities both terminologically and conceptually, making [a distinct] *open humanities* discourse necessary' (emphasis in original; see also Arthur and Hearn 2021).

Within this context, there is an urgent need for dialogue both within and between individual disciplines and methodologies about the forms openness can and should take within specific research contexts, and the subsequent implications for dominant conceptions of openness that universalise practices in support of reproducibility and replicability. This article analyses one small-scale initiative of this kind: a series of focus groups held at the University of Sheffield in 2025 that brought together researchers from a range of disciplines and methodologies to initiate conversations about the relationship between openness, transparency and rigour across different subject areas and research types. We explore the value of such projects in prompting mutual reflection and facilitating researchers' positioning relative to these concepts. Cross-disciplinary exchanges are, we suggest, crucial in contesting the narrowness of dominant frameworks of open research which assume a homogeneity of methods that is problematic for many researchers, especially those in the arts, humanities and social sciences and those working in qualitative and interpretive traditions. We further highlight the potential of libraries and other professional services to facilitate dialogue and discussion of this kind.

Background

Limitations of STEM-focused accounts of openness

Resistance to narrow, STEM-focused accounts of open research is often articulated through a critique of the relevance and applicability of the canonical practices of open science (e.g. pre-registration, registered reports, data and code sharing) to a wider range of research contexts. As one example, expectations around data sharing have been challenged by qualitative researchers due to concerns about participant privacy and safety (Class et al 2021), especially in the context of mutability around topics considered sensitive (Prosser et al 2024) and new challenges relating to appropriation of open data by AI (Field 2025). Further issues raised

[1] The terms 'open science' and 'open research' are typically used interchangeably; in this article, we primarily use the latter in order to emphasise the relevance of openness beyond STEM-focused contexts.

[2] 'Epistemological approaches' refers to the specific assumptions regarding the nature of knowledge that underlie a given approach to research.

[3] (Post)positivist approaches assume the existence of an external reality that exists independently of the research process (rather than, for example, being (co)constructed by researchers and participants). Within such approaches, experimental and hypothesis-testing research designs are often central, with research evaluated according to concepts of validity, reliability and objectivity. For a useful discussion of these and other paradigms, see Lincoln et al 2024.

include assertions of the 'dialogic, emergent, abundant and relational' nature of qualitative data which renders them 'not easily separable from their context and means of production' (Westbury et al 2022, 1; see also Broom et al 2009; Chauvette et al 2019; Feldman and Shaw 2019; Mauthner et al 1998). The time- and labour-intensive nature of qualitative data preparation relative to other data types (Tsai et al 2016) has also been emphasised.

The questions of relevance here highlight the fact that the issues raised around canonical open science practices from AHSS perspectives extend not merely to their practical feasibility but also their underlying logic. In STEM-derived discourses of open science, this logic is that of reproducibility and replicability: the possibility of future researchers 'verifying' the findings of a study by reproducing the analysis using openly available materials (reproducibility) or recreating findings in new studies using a similar methodology (replicability). In making data, code and materials available and introducing processes like preregistration to prevent misrepresentation of analytical approaches, canonical open practices serve the specific aim of supporting reproducibility and replicability - a fact that is unsurprising given the codification of these practices in the aftermath of the replication crisis in psychology in the 2010s. Yet critics have highlighted the methodological and epistemic specificity of this logic: for example, a recent integrative review of qualitative researchers' attitudes to reproducibility and replicability found consensus that 'the epistemological approaches of qualitative research are at odds with mainstream definitions of reproducibility and replicability' (Cole et al 2024, 40). Likewise, though some in the humanities do find concepts of reproducibility and replicability meaningful (e.g. Peels and Bouter 2018, 2023), these concepts' relevance has been exposed as epistemically incongruous in fields that seek to pluralise rather than confirm interpretations (e.g. Penders et al 2019).

Applying a unitary model of openness that aligns primarily with quantitative and positivist research paradigms risks perpetuating the devaluation of AHSS fields (Leonelli 2023; Ross-Hellauer 2022), homogenising research approaches (Bazzoli 2022; Field 2025; Guzzo et al 2022), and sustaining AHSS researchers' disengagement from open research. In this context, it is crucial for researchers across a range of methodologies and epistemologies to be given the space to work through what openness can meaningfully look like in their research. Such efforts are exemplified by a recent workshop held by the UK Reproducibility Network that brought together psychologists and arts researchers to explore their conceptions of transparency, reproducibility and positionality. Organisers noted participants' recognition of the 'inherent value of having these [...] cross-or multi-disciplinary conversations', particularly in their ability to surface and destabilise existing disciplinary assumptions (Jacobs et al 2024, 7). While such initiatives are not commonplace, academic libraries offer another point from which they can be facilitated, as discussed below.

The role of libraries in facilitating diverse conversations around openness

Academic libraries' support for open research by facilitating open access publishing, data sharing, and data management has been well-documented (e.g. Ayris and Ignat 2018; Federer and Qin 2019; Liu and Liu 2023; Redkina 2023; Rice 2019; Tang and Hu 2019; Tzanova 2020). Beyond delivering and supporting the use of open research infrastructure, however, libraries play a strong role in advocacy and community-building around open research (e.g. Bower et al 2017; Gainey and Wang 2025; Ogungbeni et al 2018; Rice 2019). This includes leading or co-leading activities such as conferences and podcasts that incorporate a range of disciplinary and methodological perspectives by design.[4] Libraries often also lead or support institutional open research champions schemes, in which researchers volunteer as local points of contact as well as

[4] Examples include, in a UK context, the SHU Open Research Podcast and events like the Oxford Forum of Open Scholarship (OxFOS) and Manchester and Edinburgh open research conferences.

themselves forming a multidisciplinary community around open research.[5] In their contribution to a range of advocacy and community-building activities, coupled with a long-standing commitment to understanding the needs of individual disciplines, academic libraries are thus well-placed to facilitate inclusive conversations around openness. In the context of the bias towards STEM research in dominant conceptions of open science, libraries, alongside other transdisciplinary organisations, can play an important role in supporting the much-needed nuancing, pluralising and reworking of such frameworks by researchers across different disciplines and methodologies.[6]

This is the context within which the project discussed here took place. The University of Sheffield's Open Research Champions scheme (University of Sheffield 2026), run by the institution's Open Research Working Group which includes Library colleagues, was launched in 2024. Research England funding enabled this initiative to operate a small grants scheme over Spring-Summer 2025 and appoint two Open Research Project Officers - both of whom were postgraduate researchers and open research champions - to support the funded activities. This article's first author, an open research champion who was also at the time Open Research Manager in the University Library, received a small grant for a project to hold a series of focus groups bringing together researchers across a range of disciplines and methodologies to initiate conversations about the relationship between openness, transparency and rigour across different subject areas and research types. A secondary aim entailed using the focus groups' findings to create materials (a slide set) that could be used by open research champions and others to facilitate ongoing conversations around these topics. The second and third authors of this article were the Open Research Project Officers and played a key role in developing methodological materials, offering subject-level expertise and providing operational and organisational support.

Methods

Three 90-minute focus groups were held on the topic of open, transparent and rigorous research across disciplines and research types at the University of Sheffield in April-May 2025. Ethical approval was received from the University of Sheffield Professional Services Ethics Review procedure (application number 066805).

Participants were recruited via an open call to all academic/research staff and postgraduate researchers at the institution, distributed via staff and PGR communications. Those interested in participating were asked to indicate their career stage, academic department and research types together with their availability; participants were then allocated to sessions to maintain a diversity of disciplines, research types and career stages within each session. Of the 28 participants, ten identified themselves as established researchers, ten as early-career researchers and eight as PGR students. Two were from health disciplines, three from science disciplines, three from the arts and humanities, seven from engineering disciplines, and 13 from the social sciences. Participants were asked to select all applicable research types from a list of quantitative, qualitative, mixed methods, theoretical and other: 17 self-identified as conducting quantitative research, 19 as conducting qualitative research, 13 as conducting mixed methods research and six as conducting theoretical research. Six selected 'other', with answers including bioinformatics, coding, computational, Participatory Action Research, software, and textual analysis. These characteristics are illustrated in Figure 1 (A-C).

[5] Examples of UK institutions with such schemes include Brunel University of London, the University of Exeter, Newcastle University, Sheffield Hallam University, and the University of Surrey.

[6] Other organisations that play such a role include the multidisciplinary ReproducibiliTea journal clubs that exist across a range of institutions.

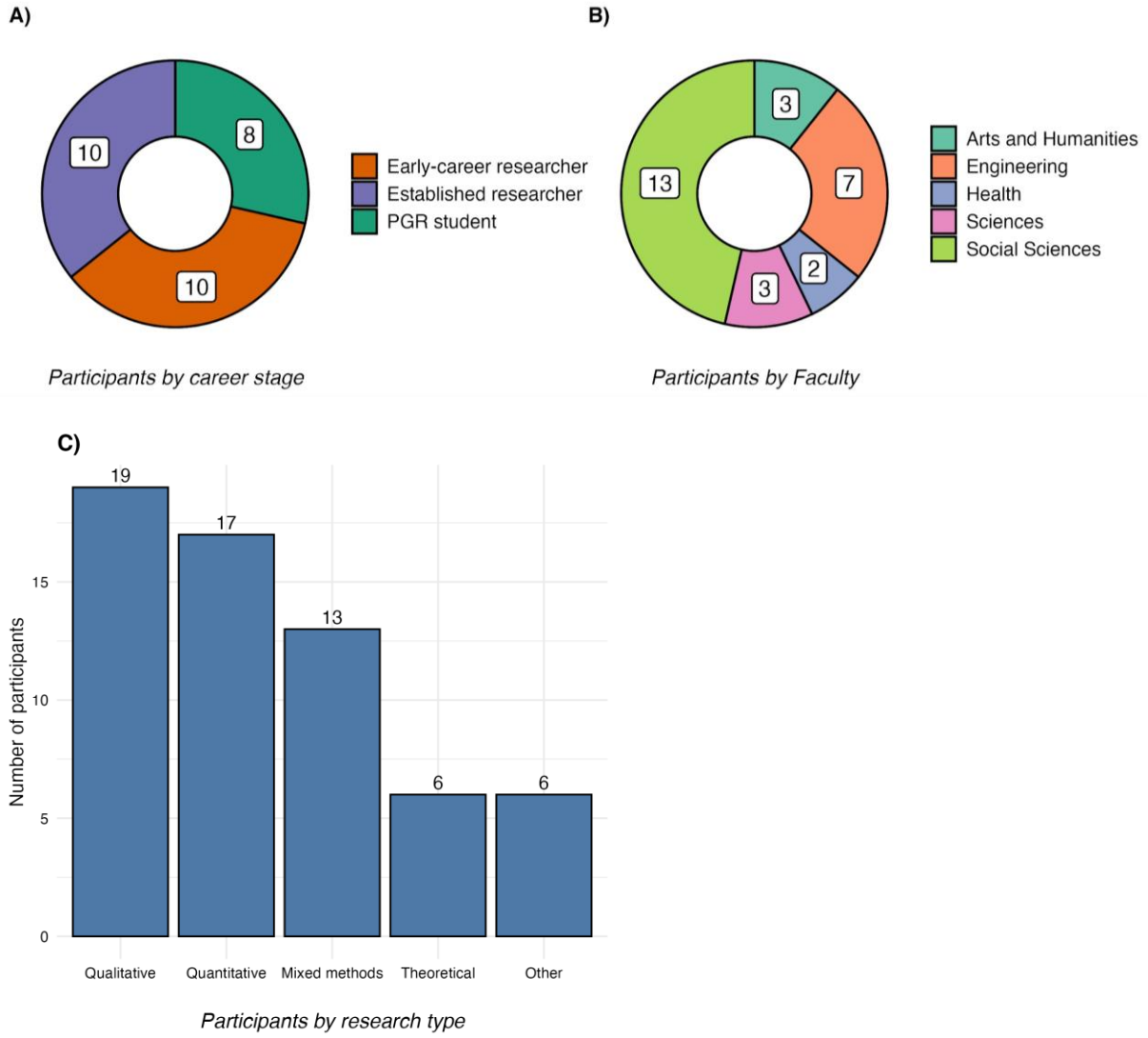

Figure 1. Focus group participants: A) by career stage; B) by faculty; C) by research type.

Two focus groups took place in person and one online. Before each session, focus group participants received an agenda outlining the main discussion points. Sessions began with discussion of how participants interpreted the concepts of rigour and transparency relative to their disciplines and research types. A short presentation then briefly outlined the concepts of open research and reproducibility, before participants were encouraged to explore the relevance of these concepts to their research, drawing on the earlier discussion of transparency and rigour as appropriate.[7] Concepts of rigour and transparency were included in the discussion's scope alongside openness to facilitate researchers' reflections on how differences in research type and disciplinary norms inform varying possibilities and practices of openness.

Focus groups were recorded using institution-approved Google Meet software and auto-transcribed, before transcriptions were manually checked, corrected and deidentified via a structured process of blurring

[7] The agenda and presentation slides are available in the project's data deposit (Adams 2026a).

and redaction.[8] Deidentified transcripts were then shared with participants to provide an opportunity for further redaction. One participant requested further blurring of one detail, while another participant asked that blurring was reduced to give greater specificity about their research type. Both requests were implemented. Session recordings were deleted once transcripts had been created, checked and agreed. The deidentified transcripts are openly available in the project's data deposit (Adams 2026a). Individual participants are hereafter anonymously referred to as PX.XX.

Transcripts were subjected to thematic analysis in NVivo 14 using a combination of inductive and deductive coding (Braun and Clarke 2022; Terry and Hayfield 2021).[9] Deductive coding was informed by key discussion points regarding openness, transparency, and rigour, while inductive coding captured unanticipated themes arising from cross-disciplinary exchange. We present the headline findings of this analysis below. The data were also used to create a slide set aimed for use by individual research groups at the institution to stimulate discussion about the relationship between openness, transparency and rigour in specific research contexts (Adams 2026b). This resource, which was disseminated via the institution's Open Research Champions, presents key quotations according to theme, together with discussion points.

Results and discussion

We present key findings from the focus groups below, organised according to theme, with illustrative quotations. These findings demonstrate varying perceptions of rigour and transparency - and consequently, of the possibilities and manifestations of research openness - across different disciplines and research types.

Understandings of both rigour and transparency differ significantly across disciplines and research types

Participants voiced a variety of perspectives on what 'rigour' looks like in their discipline and research type. Quantitative researchers in the sciences and engineering (e.g. P2.05, P2.06) illustrated rigour by reference to the use of strict experimental controls and clear justification of methodological choices. Qualitative and mixed methods researchers in the social sciences and health disciplines offered a wide range of different characterisations of rigour, including capturing 'the life realities of participants while ensuring that the interpretations are grounded in the data' (P2.07), involving participants in co-producing the research and returning results to participant communities (P1.04, P1.05, P2.03), maintaining a record of one's own reflexivity and decision making (P1.01, P2.09), incorporating a diverse range of perspectives (P2.08), ensuring intercoder reliability through co-ordination between coders (P1.01), being able to triangulate data from multiple sources (P3.03) and, in some instances, reaching data saturation (P3.05).

While controlling or exposing bias was one mechanism of rigour highlighted by researchers across a range of methodologies, approaches differed significantly, from seeking to minimise biases resulting from data collection methods or tools (P1.08, engineering), to attempts to surface and acknowledge bias via peer debriefing (P3.05, qualitative social sciences) and explicit engagement with positionality (P2.07, qualitative

[8] For further details, see the project's README file (Adams 2026a).

[9] Inductive coding refers to a bottom-up approach in which coding is led by the specific content of the data, whereas deductive coding refers to a top-down approach in which codes are derived from theory or research questions (Terry and Hayfield, 2021, 35). The two approaches can be used in combination, as was the case here.

health research). These differences in perceptions of rigour across research types are unsurprising, having been foregrounded in the methodological literature since at least the 1980s (e.g. Lincoln and Guba 1985, Lincoln 1995).[10] Yet the implications of this variability for conceptions of transparency and openness remain under-theorised in the discourse of open research, as discussed above, a point that underscores the value of addressing these contexts in conjunction.

Transparency was also interpreted differently in the context of different research types. One participant (P1.08) noted the centrality in software-centred research of data sharing, a point reiterated by another researcher (P3.09) in the context of computational work in engineering. One qualitative health researcher (P2.07), in contrast, emphasised methodological clarity and what has elsewhere been referred to as analytic and production transparency (Moravcsik 2014): 'transparency means clearly communicating the choices made throughout the study, from how participants were recruited, how the data was analysed and how interpretations were developed'. Discursive practices relating to the researcher's positioning were further stressed by an early career arts and humanities researcher using participatory methodologies (P2.03): 'So I'm trained as an ethnomusicologist and writing in the first person becomes a really important tool in our field [...] in fact, there's usually a suspicion of writing that's in the third person, as though you're trying to create an illusion of objectivity that would be impossible. So that is one of the ways in which transparency [...] is performed in our discipline.' A social sciences researcher who uses qualitative and ethnographic methods (P2.08) likewise emphasised the importance of clarifying 'your motivations [...] What are the choices you're making? What is it that you can access? What is your own positionality[?]' in the representation of research. A variety of different perspectives were thus voiced on what exactly transparency looks like in a given field or approach.

Researchers agreed that transparency evidences rigour and increases credibility, yet raised a number of practical questions

Despite differing views on what rigour and transparency look like in their research, a significant proportion of participants expressed the view that transparency is crucial in evidencing rigour, concurring with Steltenpohl et al.'s (2023) view that '[o]ne cannot fully determine the rigor of work that is not transparent'. One software engineer (P1.06) commented that 'To be rigorous in the first place, we have to be transparent so people can understand [...] how you got to your conclusions'. Likewise, a qualitative social sciences researcher (P2.02), stated: 'Rigour is transparency in qualitative research. So it's about that really clear and meticulous documentation of every decision, every interpretation, every interaction because that's all we have. We don't have controls and variables and replicated studies. We have the honest truth about what we did.' Participants in this way affirmed the importance of transparency in enabling scrutiny of research approaches. The extent to which this can build trust in a piece of research was highlighted by a mixed methods researcher in the sciences (P1.09), in their statement of others that 'when I see that they share methodologies, protocols or data [...] I trust their studies more'.

In spite of consensus about the centrality of transparency to rigour, participants also raised a variety of practical questions. These included the extent to which transparent documentation of methods is possible in the context of journal word limits (P1.07)[11] and the fact that industry partners do not always value detailed

[10] For a useful discussion in the context of qualitative research specifically, see Patterson et al (2023).

[11] A differing perspective on this issue was presented by a health researcher (P1.01): 'I think more and more people use the opportunity that journals give to link to something like an OSF project and to upload more information that is maybe not possible to put in the actual paper' - highlighting that solutions do exist within existing open research infrastructures.

documentation ('they want the short snappy versions of what you've done' - P3.02). Further challenges included the demands transparency makes on time and effort (P1.02 and P3.06) and concerns about readers' receptivity to open materials ('does anyone really want to read this?' - P3.04). Some participants also expressed concern that sharing too much information may obscure rather than clarify (P3.01). Participants' perceptions of the practical concerns against which the value of showcasing research rigour must be balanced are well-summarised by one social scientist (P3.04) who commented that 'Transparency is a compromise [...] between describing the choices you make, describing your perspectives, but also having to get something done'.

Researchers wanted to see more transparency from others in their fields

Nevertheless, participants also largely agreed that increased transparency among others in their fields would be beneficial. One quantitative social sciences researcher (P1.02) commented: 'the bar is often quite low for what people are willing to accept as being transparent enough, and certainly in my field it's not the norm to publish research protocols [...] P-hacking and things like that have been a problem.' An engineering PhD student (P2.06) suggested that in their field, '[a] lot of attached documents are very chaotic. Code is uncommented. And [...] no one agrees on [...] how we share code, how we share data that we use'. Other participants highlighted the extent to which 'messy' research realities are often eclipsed in the desire to present 'a nice clear-cut story' in research accounts (e.g. P3.01, sciences PhD student), and commented that 'I sometimes wish that they would report what didn't work at a greater length' (P3.08, engineering PhD student). The voicing of these latter perspectives by doctoral students highlights the crucial nature of research transparency in supporting new researchers' development. Finally, one participant (P2.04) reflected on the disparity of transparency practices across methodologies: 'As a mixed methods researcher, if I write a qualitative paper, I write a section on my positionality, but I've never done it in my quantitative papers. And I was like, why?'. This view echoes Jamieson et al's (2023) suggestion that quantitative research may benefit from transparency mechanisms more commonplace within qualitative methods.

Reproducibility can be a desirable aim, though not always an achievable one

During focus groups, the term 'reproducibility' was used as a stand-in term for two forms of 'redoing': reproducibility (successfully repeating a study's analysis to produce the same findings) and replicability (successfully recreating findings in a new study). For many participants, especially those using quantitative and experimental methods or developing software, both were recognised as goals. One social scientist using mixed and computational methods (P1.04) commented, 'if you're applying the same methods of analysis, the same code to the same data, you need to get reproducible results', while a researcher speaking from within the sciences (P2.05) highlighted the stakes of conducting replicable research from their perspective: 'We quite often like to show within the experiments we can do that we can repeat that through numerous different systems [...]. And the reason is that sometimes if we get that wrong, that could be used for a [intervention] later on. And if we've got that wrong, we'll end up giving the wrong [intervention].' Participants further commented on the value of researchers independently verifying previous findings (P3.04, social sciences), on the incremental nature of research, which entails a need to understand and verify previous work to build on it (P1.08, engineering) and the fact that reproducing previous work can be a learning tool for early career researchers (P3.09). However, those who asserted the value of 'redoing' (here in the sense of replicability) also often highlighted the extent to which it is not always achievable in practice, due to contextual changes between initial and later studies (P1.04, mixed methods social sciences) and limitations in which variables can be controlled, especially in fieldwork (P1.09 and P3.01).

In the context of reproducibility, others highlighted limitations introduced by software changes ('just having a different version of the same software might [mean] you can actually get slightly different results' - P3.09), as well as the fact that reproducibility does not guarantee quality (P3.02): a finding 'could be a really trivial thing or an incorrect thing, but it could reproduce' (P1.03). While some participants from engineering, science and social science disciplines highlighted the importance of reproducibility, then, this was balanced against a recognition that it does not guarantee value.

Reproducibility may not be epistemically relevant to qualitative and interpretive research

Yet for researchers conducting qualitative and interpretive forms of research, reproducibility and replicability were less likely to be accepted as relevant. This reinforces Westbury et al's (2022, 3-4) suggestion that 'Qualitative researchers have a robust and longstanding set of practices for testing the validity of [...] research, but this does not usually involve the idea of "reproducibility"'. One participant (P2.07) commented that 'especially in my [qualitative health-discipline] field, it's not meant to be reproduced in a mechanistic way [...] the goal in my field is to provide deep, context-specific understanding'. Echoing Penders et al's (2019) critique of the relevance of replicability and reproducibility to the humanities, a PhD student in the arts and humanities (P2.10) stated of their research: 'I don't think reproducibility is an aim [...] In fact, I think my field prioritises more diverse results as this leads to further discussion and research'. A social scientist conducting ethnographic and participatory research (P1.05) goes further, explicitly detaching the concept of reproducibility from that of rigour: '[T]here are disciplines like anthropology which are extremely rigorous, perhaps very conscious about how much the findings are contextual or what are the biases within the researchers etc., but because of that very rigorous sort of work they also question concepts like reproducibility [...].'

Elsewhere, the notion that bias - a confounding effect in efforts towards reproducibility and replicability - can ever be eliminated was disputed by some qualitative methodologists. One participant (P3.03) commented: 'my own worldview, my own perspectives [...] is informing how I'm analysing everything', while another (P3.05) stated that 'from my perspective, you always bring your own understanding and your biases to the research'. The same participant acknowledged elsewhere that even within qualitative research, different epistemological approaches exist within which concepts of reproducibility may be more or less acceptable: 'There are positivist qualitative researchers who might talk about generalisability and that kind of thing but yeah, I don't think so, personally.'

Nevertheless, a number of participants suggested that even where it may not be possible or meaningful to expect replicability of *results*, replicability of *methods* remains a valuable goal. A health researcher using mixed methods (P1.01) suggested that while many forms of qualitative research are 'maybe not necessarily reproducible in the sense often seen in quantitative research', the possibility remains for other researchers to reuse 'your interview guide with another group of participants or something like that'. Open materials are here foregrounded as enabling a kind of replicability via the reuse of data collection instruments. Another researcher (P3.03) further highlighted the role of documentation such as an audit trail in enabling later researchers to 'trace and follow those steps if I leave detailed notes about [...] what kind of decisions I made at every stage' with the result that 'the methods can be replicated'.

Open research looks different in different subject areas – and needs to be evaluated accordingly

A final key theme relates to participants' consideration of what open research looks like across different fields and research types, and what criteria could be used to evaluate it. Drawing on their discussions of rigour and transparency and of the varying relevance of concepts like reproducibility, participants acknowledged different approaches to openness across different fields, as in this comment: 'I've been working a little bit between arts and humanities, social sciences and science disciplines and I found an incredible range of difference between approaches to these kinds of questions' (P2.01), while another participant (P1.04) suggested that 'openness means different things in different [contexts]'. As a result, several participants expressed scepticism at the possibility that one overarching vision or set of criteria around openness could be used to evaluate uptake. The following two statements are especially noteworthy:

> [I]f we monitor open research in certain ways, like in a metric-based kind of way, [...] it could be prejudicial to certain disciplines where it's perhaps a bit more challenging to make your data open for example, or where pre-registration has less sort of importance [...] this idea of kind of acknowledging and recognising open research probably does need to be done discipline-by-discipline. (P1.03)

> [Y]ou have forms of research that have intrinsic value or that are undertaken as a process in itself or that want to develop community and they're not necessarily measurable in the same way. They're not tangible, they can't be quantified. (P2.09)

The first of these quoted participants highlights the dangers of emphasising a small number of open practices which, as discussed above, are not easily applicable across a wide range of disciplines and research types, and of universalising these expectations across all fields. The second quoted participant, a social scientist working primarily with qualitative methods, further stresses the difficulties presented to dominant models of openness by forms of research that lie outside quantitative and experimental models. In their discussion of research approaches that develop community, which might include participatory methodologies, they also gesture towards the existence of forms of openness, such as those involving varied social actors and forms of knowledge, as highlighted in UNESCO (2021), that are under-emphasised in approaches to openness that focus largely on the availability of outputs. For one participant (P1.08), these factors suggest the need for flexibility in evaluatory frameworks around openness: 'it can mean something very different in different disciplines so I think we have to be really flexible about these things'.

The value of cross-disciplinary debate

In terms of their discursive characteristics, focus group discussions evidenced the value of dialogue in enabling researchers to crystallise and articulate the nuances of their own positions on openness. Participants frequently built on others' statements: for instance, one researcher (P1.08) commented: 'I agree very much with what [P1.04] said but I would want to mention bias in this'. Participants also countered each other's views in ways that suggest the clarification of one's own perspective in contrast to those of others; as one example, a scientist (P2.05) stated that 'I really want to make a comment about reproducibility because obviously being a scientist, it's a little bit different from the arts and humanities side.' In a few places, participants also commented explicitly on the extent to which others' perspectives supported clarification of their own thoughts regarding openness: for instance, one researcher (P2.02) reflected: 'I guess that's why I

prefer transparency over rigour. [P2.04]'s point clarified that for me'. Participants also challenged one another directly, prompting each other to further develop their arguments; e.g. one postdoctoral engineering researcher's (P3.09) provocation of a fellow participant (P3.04): 'So you're saying you just know something, but you make this based on your experiences. How do you then pass on that kind of way of making that judgement to new researchers [...]?'. Both in the thematic findings discussed above and the discursive characteristics of the debates, we identify the productive nature of opportunities for focused dialogue in supporting nuanced and relevant reflection on the applicability and appropriate forms of open research in specific contexts. As noted above, academic libraries, with strong links to research communities across a given institution and an ongoing commitment to supporting open research, are well-placed to facilitate such activities.

Conclusions and limitations

To summarise, focus groups participants expressed diverse views on what openness, transparency and rigour look like across their individual disciplines and research types. These differing perspectives were accompanied by varying acceptance of the concept of reproducibility, especially among many researchers using qualitative and interpretive approaches. Diversity of the practices and purposes of openness across research areas was considered by many participants to necessitate flexible and context-specific approaches to efforts to evaluate research openness. The University Library played a central role in initiating these conversations, demonstrating how academic libraries can foster engagement with open research practices across disciplines.

This project has several limitations. Its small scale and self-selecting approach to recruitment preclude the possibility of generalising its findings or considering participants to 'speak for' their disciplines or research types. Over-representation of social science researchers relative to those of other disciplines (e.g. arts and humanities) may also have influenced the balance of the qualitative concerns raised. Constraints of space and time within the discussions, furthermore, prevented more extensive exploration of the ways in which research epistemologies, as well as disciplines and methodologies, affect perspectives on open research. Yet the project's purpose was less to determine specific, situated perspectives on openness than to investigate the value and possibility of facilitating such debate, enabling inclusive conversations to take place. As we have suggested, such efforts are valuable in aiding the crystallisation of perspectives, the exchange of good practice, and the recognition of unaddressed or unacknowledged assumptions, as one researcher's (P2.05) closing comments make clear: 'I'm siloed like everyone else, as a scientist talking to other scientists. I've thoroughly enjoyed this and found it fascinating to see how other colleagues across the university think. And I wish we had more of these because [...] I've realised that I don't know a lot about a lot of things [...].' Disciplines need to speak to each other precisely to avoid the unquestioned proliferation of universalising assumptions about the forms of openness applicable to all fields. Through cross-disciplinary dialogue around such concepts as openness, transparency and rigour, we can find routes to more inclusive, nuanced and heterogeneous approaches to open research itself - a crucial aim at a time when openness is increasingly being emphasised as a focus for research evaluation. To this end, we advocate for the development of more opportunities for researchers to engage in cross-disciplinary discussion around openness and related topics; as this article has sought to demonstrate, such activities might be productively facilitated by academic libraries alongside other organisations in the open research space.

Author Statement

Jenni Adams is a Research Associate in the School of Information, Journalism and Communication at the University of Sheffield, where she works on Materialising Open Research Practices in the Humanities and Social Sciences (MORPHSS), a collaborative project co-delivered by the universities of Cambridge, Sheffield, Coventry and Southampton. She previously worked as the University of Sheffield's Open Research Manager, based in the University Library.

Shuolin He is a PhD candidate in the School of Education at the University of Sheffield. Her research engages with open research principles and focuses on teachers' perceptions of digital practices in early childhood education, with particular interests in play provision, teacher agency, and cross-national policy-practice relationships.

Zuzanna B Zagrodzka is a metascientist and open science advocate. Her work examines open science across the research ecosystem to understand how differing perspectives, incentives, and policies shape research practice. While open science is essential for collective knowledge and societal progress, her research focuses on how misaligned stakeholder interests, weak incentives, and undervalued labour create systemic barriers, with the aim of informing more equitable, effective, and sustainable approaches to open science. She also studies barriers to the adoption of electronic research notebooks and their potential to support research workflows, improve recordkeeping, and therefore strengthen transparency and reproducibility.

Data availability statement

Data supporting this publication can be freely downloaded from the University of Sheffield data repository, ORDA, at https://doi.org/10.15131/shef.data.31230730, under the terms of the Creative Commons CC-BY licence.

Contribution statement (CRediT)

Author 1: Conceptualisation, Methodology, Investigation, Formal analysis, Data curation, Writing - original draft, Writing - review and editing

Author 2: Methodology, Project administration, Writing - review and editing

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Competing Interests

Author 3 participated in one of the focus groups, but was not involved in the process of data analysis.

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AI Statement

No AI tools have been used at any stage in the writing of this article or in the underlying research.

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