



We are torn apart by various “Truths”

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Abstract

Public debates about science are frequently described as crises of trust fueled by misinformation and politicization. At the same time, survey data from Germany and other European countries indicate that overall trust in science has remained relatively stable since the COVID-19 pandemic. This discrepancy raises questions about the adequacy of trust-centered approaches to science communication. Based on nineteen focus group discussions with sixty-three science journalists and communicators in Germany, this paper examines how journalists interpret and handle controversial scientific issues. Rather than conceptualizing trust as an outcome or deficit, the analysis focuses on processes of epistemic valuation through which scientific information is assessed, prioritized, and legitimized in public discourse. The findings show that conflicts surrounding COVID-19 research, transgender medicine, and climate science are shaped less by informational deficits than by competing value frameworks. The paper highlights the role of science journalists as epistemic intermediaries operating under conditions of polarization.

Keywords Science journalism · Trust in science · Epistemic valuation · Polarization · Misinformation · Qualitative research

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Introduction

In contemporary knowledge societies, trust in science and scientific expertise is widely portrayed as being under threat. Media discourse, political debates, and policy documents frequently invoke narratives of declining confidence in scientific institutions, rising skepticism, and the corrosive effects of misinformation, particularly in digital and alternative media environments (Rooke 2021; Frischlich et al. 2023; Wu et al. 2023). At the level of European research and innovation policy, such developments are often framed as especially problematic in light of global challenges that rely on scientific knowledge, from pandemics to climate change (Mahr et al. 2025).

At the same time, a growing body of empirical research complicates this narrative. Survey data from multiple countries indicate that overall trust in science has remained stable or even increased during the COVID-19 pandemic, albeit with significant variation across issues, institutions, and social groups (Askvall et al. 2021; Bucchi and Saracino 2020; Bucchi et al. 2021; Lindholm 2022). In Germany, the Wissenschaftsbarometer continues to show comparatively high levels of trust in science, even though confidence has declined somewhat from its pandemic peak (Wissenschaft im Dialog 2020). These findings raise a fundamental question: if trust in science has not collapsed, why do public debates so often appear as deeply polarized struggles over truth?

This paper argues that the answer lies in a conceptual overreliance on trust as the primary explanatory lens. While trust is undoubtedly relevant, it does not fully capture the dynamics of contemporary science-related controversies. Many conflicts are not centered on whether science as such is credible, but on which forms of scientific knowledge are considered legitimate, morally acceptable, or socially relevant. In these contexts, different “truths” coexist, each embedded in specific value frameworks, political identities, and media ecosystems.

Science journalism occupies a central position within these conflicts. Journalists are expected to translate complex scientific knowledge, contextualize uncertainty, and provide orientation for diverse publics (Mahr et al. 2025). Simultaneously, they operate under conditions of economic pressure, accelerated news cycles, and fragmented audiences. As a result, science journalists increasingly find themselves navigating situations in which factual accuracy alone does not guarantee acceptance. Instead, they must engage (often implicitly) in processes of epistemic valuation, deciding which knowledge claims deserve visibility, authority, and legitimacy.

The aim of this paper is to explore these processes from the perspective of science journalists in Germany. Rather than asking whether journalism succeeds or fails in rebuilding public trust, the analysis focuses on how journalists themselves conceptualize trust, mistrust, acceptance, and rejection when reporting on controversial scientific issues. By doing so, the paper shifts attention from trust as an outcome to epistemic valuation as a practice.

Trust, mistrust, and epistemic valuation

Research on trust in science has expanded significantly over the past two decades, producing a diverse body of theoretical and empirical work. Scholars have conceptualized trust as a multidimensional construct encompassing perceptions of expertise, integrity, transparency, and benevolence (Reif and Guenther 2021). Survey-based studies have highlighted how trust varies across social groups and issue domains, and how distrust can coexist with selective acceptance of specific scientific claims (Hendriks et al. 2016; Wintterlin et al. 2022).

At the same time, several authors have pointed to conceptual limitations in linear or deficit-oriented models of trust. Treating trust as something that can simply be regained through better communication risks obscuring the contextual, relational, and conflictual nature of public engagements with science (Weingart 2022). In highly mediated and polarized environments, trust is not only shaped by informational quality but also by institutional interests, attention economies, and moral expectations.

To address these limitations, this paper adopts the concept of epistemic valuation. Epistemic valuation refers to the processes through which actors attribute value, legitimacy, and relevance to knowledge claims. Such valuation goes beyond assessments of evidentiary strength and includes moral judgments, identity alignment, emotional resonance, and situational relevance. Importantly, epistemic valuation is relational: the same scientific information may be accepted as authoritative in one media ecosystem and rejected as biased or harmful in another.

Science journalists play a key role in these valuation processes. As intermediaries between scientific institutions and diverse publics, they contribute to shaping which forms of knowledge are visible, how uncertainty is framed, and which voices are amplified or marginalized. In doing so, journalists act as epistemic brokers whose decisions are themselves subject to scrutiny and contestation, particularly in polarized debates characterized by accusations of bias, censorship, or false balance (Collins 2014; Koehler 2016).

Methods

Research design

This study adopts a qualitative research design based on moderated focus group discussions with science journalists and science communicators in Germany. Focus groups were chosen as the primary method because they allow participants to collectively reflect on professional norms, shared challenges, and contested interpretations of science-related controversies. In contrast to individual interviews, focus groups make it possible to observe how meanings are negotiated, reinforced, or challenged in interaction, which is particularly relevant for analyzing processes of epistemic valuation and professional sense-making (Smithson 2000; Nyumba et al. 2018).

The study forms part of a broader international research project on science communication and public trust. However, the present analysis focuses exclusively on the German material in order to enable in-depth contextual interpretation and avoid

Table 1 Overview of focus group characteristics and data collection procedures

Characteristic	Description
Number of focus group discussions	19
Total number of participants	63
Participants per focus group	3–5
Duration of focus groups	60–90 min
Time period of data collection	November 2022 – July 2023
Methodological format	Moderated, semi-structured focus group discussions
Participant profile	Science journalists and science communicators
Geographic scope	Germany
Recording and transcription	Audio-recorded, transcribed verbatim, anonymized

The table summarizes the main features of the focus group discussions conducted for this study, including the number of groups and participants, group size, duration, time frame, methodological design, participant profile, and data handling procedures. The overview is intended to provide transparency regarding the empirical basis of the analysis

conflating national media dynamics with cross-country comparison.¹ The analytical emphasis lies on journalists' interpretive frameworks rather than on measuring attitudes or behaviors.

Data collection and sample

Between November 2022 and July 2023, nineteen focus group discussions were conducted, involving a total of sixty-three participants. Focus groups typically comprised three to five participants and lasted between 60 and 90 min. Participants were recruited through professional networks, journalism associations, and targeted outreach to ensure diversity in media type, organizational affiliation, and professional background (see Table 1).

The sample included journalists working for national and regional newspapers, public service broadcasting, private television, online news platforms, and alternative or counter-media outlets. Participants varied in terms of career stage, ranging from early-career journalists to highly experienced practitioners with long-standing involvement in science reporting. This diversity allowed for the inclusion of different professional perspectives on science journalism, institutional constraints, and audience relations.

To capture epistemic valuation processes across different media ecosystems, the sample deliberately included journalists affiliated with German alternative media outlets such as *Nius*, *Tichy's Einblick*, and *Compact*, alongside journalists from estab-

¹ The study forms part of the broader EU-funded research project *Inspiring and Anchoring Trust in Science, Research and Innovation* (IANUS), which aims to strengthen warranted trust in science by fostering participatory, co-creative approaches and by analyzing the conditions under which trust in science emerges and is sustained in society. The project develops conceptual frameworks, engages diverse societal stakeholders, and produces policy-relevant insights into trust dynamics, transparency, and public engagement with scientific knowledge.

lished quality media. These outlets typically operate outside mainstream journalistic institutions and follow explicit political orientations. Including them was analytically important for examining how scientific knowledge is interpreted, framed, and evaluated in media environments characterized by heightened skepticism toward mainstream science and professional journalism.

All focus group sessions were moderated by trained researchers using a semi-structured discussion guide covering perceptions of public trust in science, experiences with controversial topics, encounters with misinformation, and professional self-understandings. Sessions were audio-recorded, transcribed verbatim, and anonymized. All participants provided informed consent, and the study complied with relevant ethical and data protection standards.

Data analysis

The data were analyzed using reflexive thematic analysis, following an iterative and interpretive approach to qualitative data analysis (Syed and Nelson 2015; Mishra and Dey 2022). Analysis proceeded in several stages. First, transcripts were read closely to achieve familiarization with the data and to identify initial patterns, tensions, and recurring themes. Second, transcripts were coded inductively, with codes capturing both explicit statements and implicit assumptions regarding trust, mistrust, epistemic authority, and journalistic roles.

In a third step, codes were grouped into broader analytical categories related to epistemic valuation, including perceptions of legitimacy, relevance, and acceptance of scientific knowledge, as well as constraints shaping journalistic decision-making. Throughout the analysis, attention was paid to points of disagreement and divergence within and across focus groups, rather than seeking consensus or frequency-based generalization.

Reflexivity was maintained throughout the analytical process by critically reflecting on the researchers' own disciplinary backgrounds, normative assumptions about science and journalism, and potential power asymmetries within the focus group setting. Analytical decisions were documented through memos and iterative discussion among the research team. Quotations used in the findings section were selected for their illustrative value and are presented in anonymized form.

Findings: epistemic valuation in practice

Across all focus groups, participants described contemporary science journalism as embedded in an environment characterized by polarized publics, fragmented media infrastructures, and heightened expectations toward journalistic responsibility. Rather than describing a simple loss of trust in science, journalists repeatedly emphasized that acceptance and rejection of scientific knowledge have become increasingly situational and value-laden. In this context, epistemic valuation (the assessment of which knowledge claims are relevant, legitimate, and worthy of attention) emerged as a central, albeit often implicit, dimension of journalistic practice.

Perceived erosion of trust and algorithmic visibility

In nearly all focus groups, participants articulated a strong sense that public trust in science had eroded. This perception frequently conflicted with their awareness of survey data suggesting relatively stable or even increased trust levels. Journalists explained this discrepancy primarily through their professional immersion in digital communication environments, where critical, skeptical, or conspiratorial voices tend to be disproportionately visible due to algorithmic amplification mechanisms (Van Leuven et al. 2018; Muñoz et al. 2024).

Participants described social media platforms as epistemically distorting environments that privilege emotionally charged, polarizing, or transgressive content over nuanced scientific explanations. As a result, journalists reported that their everyday encounters (comment sections, direct messages, and social media interactions) created the impression of a deeply distrustful public, even when such reactions may represent vocal minorities rather than broader societal attitudes. This phenomenon shaped journalists' sense of audience orientation and influenced their assessments of which scientific topics were "safe," "toxic," or likely to trigger backlash.

In response, journalists frequently invoked core professional values such as transparency, accuracy, and accountability as counter-strategies to what they perceived as an erosion of trust. However, these values were not understood as abstract ideals but as pragmatic tools for navigating hostile or fragmented audiences. Transparency, for instance, was often framed as a defensive practice: explicitly communicating uncertainty, methodological limitations, or institutional affiliations in anticipation of criticism. In this sense, transparency functioned less as a trust-building ideal and more as a protective mechanism within contested epistemic environments.

Journalists also noted that algorithmic visibility reshapes epistemic valuation by privileging certain forms of scientific knowledge over others. Preliminary findings, controversial hypotheses, or dissenting expert voices were perceived as more "visible" than incremental or consensual research. This created pressure to engage with marginal or disputed claims, even when journalists considered them epistemically weak. As one participant noted, ignoring such claims risked ceding epistemic authority to alternative media actors who actively capitalized on controversy.

Institutional loyalty and journalistic integrity

A second major theme concerned tensions between institutional loyalty and journalistic integrity. Journalists working within or in close proximity to scientific institutions (such as research organizations, universities, or publicly funded science communication units) described ongoing struggles to balance critical distance with representational responsibilities. While participants emphasized their commitment to professional independence, they also acknowledged implicit pressures to align reporting with institutional priorities, reputational concerns, or funding structures.

These tensions were particularly salient in situations involving scientific uncertainty or internal disagreement. Journalists reported difficulties in deciding when critical reporting might undermine public confidence in science or be appropriated by actors seeking to delegitimize scientific institutions altogether. In such cases, epis-

temic valuation involved weighing the normative value of critique against the perceived risk of fueling anti-scientific narratives.

Conversely, journalists affiliated with alternative or ideologically oriented media outlets described a different but equally constraining form of loyalty: alignment with audience expectations and political worldviews. Participants noted that epistemic valuation in these contexts was often guided less by scientific standards of evidence than by resonance with audience identities. Topics such as vaccination or gender-related medicine were described as particularly sensitive, as deviations from expected narratives could result in audience rejection or professional marginalization.

Across both institutional and alternative media contexts, journalists emphasized that decisions about which risks to highlight, which uncertainties to foreground, and which expert voices to include were rarely based on epistemic considerations alone. Instead, they reflected complex negotiations involving organizational constraints, anticipated audience reactions, and broader media discourses. Epistemic valuation thus emerged as a situated practice shaped by socio-economic and institutional conditions rather than a purely cognitive assessment of evidence quality.

Competing truths and socially charged issues

Participants consistently identified COVID-19 research, transgender medicine, and climate science as paradigmatic examples of socially charged issues characterized by competing truth claims. In these domains, journalists reported that scientific evidence was rarely evaluated solely on epistemic grounds. Instead, acceptance or rejection of scientific knowledge was closely tied to moral positions, political identities, and broader cultural conflicts.

Journalists described how these topics increasingly function as symbolic battlegrounds in which scientific claims serve as proxies for deeper value conflicts. In the case of COVID-19, evolving scientific recommendations were retrospectively framed by some audiences as evidence of incompetence or deception rather than as indicators of scientific uncertainty. In debates around transgender medicine, journalists observed that medical evidence was often subordinated to moral arguments about identity, protection, or social norms. Climate science, while more institutionally stabilized, continued to evoke polarized responses linked to economic interests and political ideology.

The emergence of movements such as #Aufarbeiten in German-speaking social media environments was cited as a salient example of alternative epistemic regimes gaining traction.² Within these regimes, scientific institutions and established experts were portrayed as politically compromised elites, while counter-scientific narratives were framed as acts of epistemic resistance. Journalists reported that engaging with

² #Aufarbeiten is a German-language social media hashtag and loosely organized movement that emerged in the context of the COVID-19 pandemic. It calls for a critical reassessment (“Aufarbeitung”) of political decisions, scientific advice, and public communication related to pandemic measures. Actors associated with #Aufarbeiten often frame themselves as advocates of transparency and accountability, while simultaneously questioning the legitimacy of established scientific institutions, expert consensus, and mainstream journalism. The hashtag functions as a discursive marker linking diverse actors, platforms, and narratives within alternative media ecosystems.

such movements posed a dilemma: ignoring them risked irrelevance, while engagement often entailed legitimizing epistemically weak or strategically misleading claims.

Across these cases, journalists emphasized that their role was not merely to transmit scientific facts but to navigate competing truth regimes. Epistemic valuation involved continuous decisions about when to contextualize dissent, when to exclude certain voices, and how to communicate uncertainty without reinforcing relativistic interpretations of science. Participants stressed that factual accuracy alone was insufficient to secure acceptance; what mattered was how scientific knowledge aligned (or conflicted) with prevailing value frameworks within specific audience segments.

Discussion

The findings suggest that many contemporary science-related controversies cannot be adequately explained by informational deficits alone, but are shaped by conflicting processes of epistemic valuation. While access to reliable information remains a necessary condition for public understanding, journalists described environments in which truth claims are evaluated through heterogeneous (and at times incompatible) value frameworks, moral expectations, and identity-based orientations. Under such conditions, trust in science and science journalism cannot be understood as a straightforward outcome of improved information provision or communicative clarity.

Conceptualizing science journalism as a form of epistemic brokerage highlights the active, though constrained, role journalists play in the public ordering of knowledge. Rather than functioning as neutral transmitters of facts, journalists participate in ongoing valuation processes that influence which forms of scientific knowledge are rendered visible, credible, or legitimate in specific media contexts. At the same time, these practices are shaped by institutional pressures, audience expectations, and platform dynamics, limiting journalists' capacity to fully control epistemic outcomes.

From this perspective, the limited effectiveness of purely fact-based interventions does not imply that facts are irrelevant, but that they address only one dimension of controversy. Such interventions tend to engage informational aspects while leaving underlying value conflicts, moral framings, and questions of social relevance largely unaddressed. A valuation-centered approach thus complements, rather than replaces, trust-oriented frameworks by drawing attention to the socio-cultural conditions under which scientific knowledge is accepted, contested, or rejected.

Conclusion

This paper has argued for a shift from trust-centered to valuation-centered approaches in the study of science journalism. Drawing on qualitative insights from science journalists in Germany, it demonstrates that contemporary public conflicts over science are less rooted in misunderstandings of facts than in divergent processes of epistemic valuation. Scientific knowledge is assessed, accepted, or rejected through value-

laden frameworks shaped by moral expectations, political identities, institutional affiliations, and media infrastructures.

The findings highlight the role of science journalists as epistemic brokers who operate at the intersection of scientific institutions, media organizations, and heterogeneous publics. Under conditions of polarization, economic pressure, and algorithmically structured visibility, journalists are required to continuously negotiate evidentiary standards, professional norms, and audience orientations. These negotiations are inherently risky, as journalistic valuation practices are themselves subject to contestation and suspicion within fragmented truth regimes.

Rather than aiming to restore a singular epistemic consensus, science journalism in polarized societies may increasingly be tasked with rendering epistemic conflicts visible, contextualizing competing truth claims, and maintaining professional standards in the absence of shared evaluative baselines. Conceptualizing epistemic valuation as a core dimension of journalistic practice offers a more realistic and analytically robust framework for understanding science journalism's role in contemporary public discourse, particularly in environments where trust is conditional, selective, and unevenly distributed.

Appendix

A.1 Data corpus

The empirical basis of this study consists of nineteen moderated focus group discussions conducted in Germany between November 2022 and July 2023, involving sixty-three participants. All participants were science journalists or science communicators working across different media environments, including public service broadcasting, national and regional newspapers, online journalism, institutional science communication, and alternative or counter-media outlets.

Each focus group included three to five participants and lasted 60–90 min. All sessions were conducted in German, audio-recorded, transcribed verbatim, and anonymized. Transcripts constitute the primary data material for analysis.

A.2 Analytical approach and coding procedure

Data were analyzed using reflexive thematic analysis, following an iterative and interpretive approach to qualitative analysis. The analytical process proceeded in four main stages:

1. Familiarization: All transcripts were read in full to identify recurring themes, tensions, and narrative patterns related to trust, mistrust, acceptance, rejection, and journalistic decision-making.
2. Initial Coding: Transcripts were coded inductively. Codes captured both explicit statements (e.g., “audiences no longer trust experts”) and implicit assumptions

(e.g., moral evaluations of certain scientific topics or audiences). Coding focused on how participants described:

- the legitimacy of scientific knowledge,
 - criteria for relevance and newsworthiness,
 - perceptions of audience acceptance or rejection,
 - professional norms and constraints.
3. Thematic Consolidation: Codes were clustered into broader analytical categories related to epistemic valuation, including:
- legitimacy and authority,
 - relevance and resonance,
 - moral acceptability,
 - institutional alignment,
 - perceived audience risk (e.g., backlash, delegitimation).
4. Interpretive Synthesis: Themes were refined through comparison across focus groups, with particular attention to points of divergence rather than consensus. Analytical memos were used to document interpretive decisions and to relate emerging themes to the theoretical framework of epistemic valuation.

The analysis did not aim at frequency-based generalization. Instead, emphasis was placed on how journalists reasoned about knowledge claims, how they justified acceptance or exclusion, and how these processes varied across media contexts.

A.3 Focus groups and their analytical contributions

While all themes were present across the dataset, certain emphases varied systematically by group composition and media context. These differences informed the interpretation of findings in the Results section.

- Groups dominated by journalists from established quality media.

These groups contributed primarily to findings on:

- tensions between journalistic integrity and institutional responsibility,
- strategies for maintaining credibility under conditions of uncertainty,
- concerns about “false balance” and professional boundary work.
- Groups including journalists affiliated with alternative or ideologically oriented media These discussions were central to findings on:
 - competing epistemic regimes,
 - audience-driven valuation of scientific knowledge,
 - rejection of institutional expertise framed as epistemic resistance.

- Groups with science communicators working within scientific institutions These groups informed analysis of:
 - institutional loyalty and communicative constraints,
 - dilemmas surrounding critical reporting versus reputational risk,
 - perceptions of how transparency and uncertainty affect public trust.
- Mixed or early-career groups: These discussions contributed particularly to:
 - perceptions of algorithmic visibility and platform pressure,
 - experiences of harassment, backlash, or self-censorship,
 - emerging professional norms in fragmented media environments.

Rather than assigning themes exclusively to specific groups, the analysis treated group composition as a contextual lens through which epistemic valuation processes became visible in different forms.

A.4 Linking data to findings

The findings presented in section “[Findings: epistemic valuation in practice](#)” are grounded in cross-group thematic patterns, supported by illustrative quotations selected for their analytical relevance. Quotations were not used to represent individual opinions but to exemplify recurring valuation logics observed across the dataset.

Disagreements within and between groups were treated as analytically productive, revealing how epistemic valuation varies across media ecosystems, institutional settings, and audience orientations. These divergences were central to understanding why science-related controversies persist despite stable aggregate levels of trust in science.

A.5 Methodological scope and limitations

This appendix clarifies the internal structure of the dataset and the analytical steps undertaken. The focus on professional sense-making means that findings reflect journalists’ interpretations of public trust, rather than direct measures of audience attitudes. The qualitative design prioritizes depth and contextual understanding over representativeness.

Author contributions Dana Mahr contributed to the conceptualization of the study, data analysis, and the writing of the manuscript. Christopher Coenen contributed to the study design and methodology, conducted the focus group discussions, and provided critical revisions to the manuscript. All authors read and approved the final manuscript.

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Data availability The datasets generated and analyzed during the current study are included in the manuscript appendix and are available from the corresponding author upon reasonable request. Anonymized focus group data and transcripts may also be made available upon request, subject to ethical considerations and participant confidentiality.

Declarations

Competing interests The authors declare that they have no competing interests.

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