

Critical Practices Codes

A Public Interest Technology roundtable on Ethical Codes of Conduct as a mode of governance for emerging technologies

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Contents

Introduction	2
What insights from public interest technology work are most applicable to an ethical code?	2
2.1 Codes are fragile	3
2.2 Codes can wield power	3
2.3 Emerging technologies require new forms of responsibility	4
What has been learned from previous efforts to draft industry wide ethical codes?	4
3.1 Codes are inseparable from wider sociotechnical systems and contexts	5
3.2 It is hard to distil ethical decision making into a single code of conduct.	5
Why focus on norms and culture rather than regulatory reform?	6
Could an 'open drafting process' connect different groups to bridge conversations about algorithmic discrimination and digital repression?	7
5.1 Refusing to participate is a legitimate course of action	7
5.2 By including some you exclude others	8
5.3 There are often practical constraints on participation	8
What operationalisation and implementation issues should be considered from the outset?	9
6.1 Put codes in context	9
6.2 Focus on collective responsibility	9
6.3 Think of codes as processes rather than objects	10
6.4 Build capabilities for people to live by their codes	10
6.5 Recognise our own roles as creators of codes	10
Conclusion and lessons from hosting the roundtable	10
Annex 1: Methodology	12
Annex 2: Programme	13
Annex 3: Participants	14
Organisers	14
Speakers	14
Participants	14

Introduction

In an age of rapid technological development, those in power often reach for ethical codes of conduct (“codes”) to guide the practices of technology developers. Codes such as the IEEE’s Ethically Aligned Design, the Asilomar AI Principles, or the Barcelona Declaration are typically non-binding and aim to capture moral norms in succinct, widely applicable formats. Such codes, and cognate ideas such as principles, standards, and guidelines, are now a well-established tool in the repertoire of ‘emerging tech ethics’.

These proliferating codes offer a moral compass to some practitioners but many challenges have been documented. In 2022, USAID and New America launched a collaborative project to support the drafting of a new technologist code of ethics seeking to align the values behind technology development and deployment with democratic values and respect for human rights.¹ As part of this initiative, New America selected four Public Interest Technology University Network (PIT-UN) members to convene roundtable discussions on codes of conduct, including the University of Edinburgh.

The goal of our roundtable was to draw together a diverse range of lived experiences of studying, working with and producing ethical codes of conduct (see Annex 1: Methodology). We drew on academic insights from Public Interest Technology (PIT), Responsible Research and Innovation (RRI), and Science and Technology Studies (STS), putting them into conversation with practitioners from AI, data science and the life sciences. We aimed to look beyond the content of bullet-pointed manifestos to critically engage with codes of conduct, and consider what it might take to use codes to transform cultures and practice

This white paper reports our initial findings. It uses five questions posed by New America to capture the merits and challenges of establishing a global technologist code of ethics, identify additional insights for consideration, and reflect on lessons learned from conducting the roundtable.

What insights from public interest technology work are most applicable to an ethical code?

Ethical codes of conduct have been the subject of much investigation from fields related to Public Interest Technology, such as Science and Technology Studies (STS) and broader philosophical, legal and sociological traditions. This has generated many insights about the roles codes play in the governance of emerging technologies but our roundtable highlighted three particular themes. Firstly, codes are fragile — they often disintegrate under pressure because their content is too abstract or vague, because they focus on individuals rather than organisations and collectives, or because they are unenforceable. Secondly, codes are powerful — they shape social behaviour in ways that go beyond establishing moral principles. Thirdly, they rely on backward looking and individually focused notions of responsibility, which are unsuited to governing emerging technologies democratically.

¹ <https://www.newamerica.org/digital-impact-governance-initiative/blog/call-to-action-collaborating-on-a-technologist-code-of-ethics/>

2.1 Codes are fragile

Codes can be abstract, vague, and lack specificity or grounding in practical realities². This is especially likely for codes aiming to cater to multiple contexts, which take the form of lists of appealing but generic statements relating to general ethical principles and values. For example, the draft DIYBio code of ethics from European Congress espouses ambiguous principles and advises practitioners to “adopt safe practices” or “respect humans and all living systems”. What it omits is practical guidance on how these principles can realistically be achieved in specific contexts. Findings from the roundtable indicate that practitioners would benefit greatly from action-orientated, practical advice.

“Codes of ethics typically focus on the behaviour of individual engineers; they don’t address the broader sociotechnical systems that engineers operate within and that’s a real challenge” - *Emma Frow*

Additionally, many codes prioritise the actions of individuals over institutions or collectives, particularly if they target professional identities or specific technologies. The US National Society of Professional Engineers (NSPE) Code of Conduct identifies nine steps to ethical engineering decisions, all targeted at the individual engineer. They include reminders to “stop and think” and suggest people “refer to the NSPE Ethics Resources”. Individuals are advised to escalate issues by referring to “state registration law” or “respected staff or outside professionals” and no infrastructure is in place to facilitate that process. The NSPE is not alone; similar examples can be found across other sectors including The Code of Conduct for Society of Petroleum Engineers (SPE) and the Tianjin Biosecurity Guidelines. Across all these codes, individual engineers or scientists shoulder the burden to uphold ethical practices and there is little integration with wider support or compliance structures.

“Codes [are] a crucial place for knowledge production on science and technology. And for ordering new knowledge in relation to society.”
- *Nina Frahm*

A code that lacks specificity and/or integration into wider support and compliance structures will be fragile; it may act as a positive beacon when times are good but will crumble under pressure, leading to the common critique of ‘toothlessness’.

2.2 Codes can wield power

Codes have the potential to shape social behaviour in ways that go beyond establishing ethical principles, so a code that is difficult to enforce can still be powerful.

Firstly, codes can generate knowledge and establish definitions. Drafting groups often have to debate what a technology does and does not include before developing a set of principles in relation to it. Sorting, ordering, and defining are central to drafting, and these processes are significant because they establish *remit* — i.e. what is, and what is not, within the scope of a code. If the code is being developed for a new technology, it is not uncommon for these definitions to become widely established and adopted through repeated use.³ Codes may start as ‘soft’ forms of governance but they can rapidly lead to new ways to think about and ‘know’ certain technologies.

² Green, B (2021). The Contestation of Tech Ethics: A sociotechnical approach to technology ethics in practice. *Journal of Social Computing* 2(3): pp209-225.

³ For instance, the European Group on Ethics’ definition of synthetic biology continues to be cited in other governance spaces such as the UN Convention on Biological Diversity.

Some codes also create new social arrangements; they have the power to forge group identities and foster social cohesion. In his talk, Luke Stark explained that organisational sociologists view codes as potentially powerful cohering devices that allow social groups to articulate who is to be recognised as a member. (Consider the connection between Doctors' professional identity and the Hippocratic Oath).

“These codes are really about cohering a social group [...] they're about articulating who's in and who's out, who has the skills to be recognised as a doctor, a forester or a scientist.”
- Luke Stark

The corollary is that codes “are really only tertiarily about broader questions of the social or greater good”. Stark recounted how at Microsoft he witnessed people with very disparate technical expertise cohering around discussions relating to trust and privacy. He also reminded us that in recent years we have seen a lot of labour activism in Silicon Valley with groups mobilising around normative design and whether employees agree with the direction senior management is taking. Codes may not be enforceable, but some do make new knowledge and mobilise new social arrangements, and this can be a useful outcome for those involved.

2.3 Emerging technologies require new forms of responsibility

Our roundtable participants noted that it is unusual for a code to be proactive and anticipatory; they are usually retrospective and reactive, functioning, for instance, through a complaints process. Accountability-driven and backward-looking forms of responsibility are common in North America and Europe but research in the field of STS shows how they are insufficient for emerging technologies, which develop in unexpected and unpredictable ways, and often create institutional voids — situations where there is no clear process to govern them effectively.⁴

Work within frameworks such as Anticipatory Governance and Responsible Innovation offer forward-looking and collective understandings of responsibility which are better suited to governing emerging technologies. For instance, the 'AREA' framework developed by Richard Owen, Jack Stilgoe and Phil Macnaghten suggests actors within an innovation system are socially responsible if they work to *Anticipate* possible known and unknown outcomes, *Reflect* on motivations, assumptions, and alternative trajectories of their work, *Engage* with a diverse range of stakeholders, publics, and expert knowledges, and *Act* to integrate any outcomes into decision making activities. We draw on this literature in the remainder of the report.

What has been learned from previous efforts to draft industry wide ethical codes?

In addition to the insights above, our participants emphasised that codes are part of a wider socio-technical system; they are neither developed nor deployed in isolation, meaning they alone will not guide decision making. This context is challenging but important to take seriously.

⁴ Stilgoe, J., Owen, R., & Macnaghten, P. (2013). Developing a framework for responsible innovation. *Research Policy*, 42(9), 1568-1580.

3.1 Codes are inseparable from wider sociotechnical systems and contexts

Codes are intertwined with institutional contexts in many ways. They are linked to legislation and regulation, national security, specific economic models, particular understandings of innovation and democracy, as well as the agenda of the groups that draft them. They also serve as a way for an organisation to interpret the broader norms, debates and priorities in society, even if the code that results differs significantly. These connections affect the way codes are negotiated and enacted. For example, regulatory contexts can disincentivise creating more robust governance processes. In the US the National Society of Professional Engineers codes are generated within a legal system where ‘harmed’ groups must prove ethical misuse. Engineering companies and engineers are, by default, ethical until proven otherwise. The context protects the engineering profession and removes any incentive for engineers to develop an alternative code that might increase exposure to litigation.

“I can’t tell you how many tricky discussions we had about what those words mean. It’s a miracle that we eventually agreed on what they *ought* to mean, at least for the context we were working in.”
- Shannon Vallor

The aforementioned OECD *Recommendations for Responsible Innovation in Neurotechnology* illustrates how the ideas and agendas of groups making codes affect how they are framed and put into practice. Many social scientists emphasise that responsible innovation should open-up questions such as the economic model driving innovation. However, the OECD has a long history of serving economic growth and the drafting group resisted questioning the relationships and relative priorities between economic growth, societal need and forms of innovation. Instead, recommendations were framed within existing economic-orientated innovation models and social dimensions positioned as ‘risks’ to economic potential. The OECD’s recommendations became a tool to negotiate ‘social acceptance’ rather than meaningful wider societal deliberation.⁵

These examples show that if left unchallenged, codes can protect and consolidate existing professional and corporate interests.⁶ To prevent perpetuating inequalities, it is vital to account for and work with the potential effects of institutional contexts, even if it is tempting to try and decouple them.

3.2 It is hard to distil ethical decision making into a single code of conduct.

Several of our participants who have written codes emphasised how hard it was to draft a single output upon which everyone agreed. The following bottlenecks were common:

- There is often ambiguity about the boundaries of the document the group is creating – is it a code, a set of principles, values, guidelines, recommendations, or rules? Conceptually,

⁵ See: Frahm, N., Doezma, T, and Pfothenauer, S. (2022). Fixing Technology with Society: The Coproduction of Democratic Deficits and Responsible Innovation at the OECD and the European Commission. *Science, Technology, & Human Values*. 47(1):174–216

⁶ Stark, L, Green, D. and Hoffman, A.L (2022). Critical Perspectives on Governance Mechanisms for AI/ML Systems. In: Roberge, J, Castelle, M (Eds). *The Cultural Life of Machine Learning*. Palgrave Macmillan, Cham.

‘codes of conduct’ circulate in a governance space that includes many distinct but similar terms.

- Before moving onto more prosaic issues, drafting groups often need to elaborate core concepts. We have already pointed to important definitional work about the profession or technology in focus, but clarifying meanings of words like responsibility or integrity are also important.
- Ethical issues and norms are varied and deeply contextual. The same action might be seen as ethical in one set of circumstances but unethical in another. The challenge is amplified by the high degrees of uncertainty associated with technological development, diversity of human behaviours, and shifting social norms.

The drafting process is contingent on a group being able to agree upon these kinds of issues. Broad participation can help address some of these challenges but groups tasked with producing universal codes are likely to be faced with an almost inconceivable range of contexts, meanings, and settings. In such circumstances, the group felt that ethical issues would continuously resist being distilled into a singular applicable code across all contexts.

Why focus on norms and culture rather than regulatory reform?

Pursuing different forms of governance is not mutually exclusive. A code’s value comes as one approach in a broader landscape of governance that includes ‘hard’ (e.g. legislation, regulation) and ‘soft’ (e.g. codes, norms, standards) tools. Ultimately both types target behavioural norms and cultures but do so in different ways. They are not mutually exclusive but can be mutually reinforcing; the risk is thinking that one can replace the other.

Soft forms of governance can fill important gaps in a regulatory landscape, which is especially important for emerging technologies that are hard to predict and develop in unexpected ways. Codes can take years to develop and struggle to challenge existing business models but they can also be responsive and agile once established. One participant from a technology startup incubator outlined the structures and protocols that gave them agility when iterating their own ethical codes. Through a combination of well-established support structures, well designed participatory mechanisms and ratification protocols, and a culture of ongoing improvement, their codes could be challenged, evaluated, updated, and communicated within a matter of days or, at worst, weeks.

Furthermore, as already argued, codes can not only cohere, but also potentially mobilise disparate groups of people around shared principles and ideals. Good participatory design can allow codes to act as a platform for historically marginalised peoples and cultures⁷. Combining these capacities means that codes can act as vehicles for change. During the roundtable several participants pointed to UNESCO’s Recommendation on the Ethics of Artificial Intelligence as an exemplary in this regard. The code gives a voice to indigenous populations and small nations, highlights matters of sustainability, and sensitively and comprehensively addresses considerations of discrimination, amongst other work it performs. In 2021, it also became the first global standard-setting instrument of its kind and was adopted by 193 member states. This adoption means that human actors

⁷ Macdonald, J.M., Robinson, C.J., Perry, J., Lee, M., Barrowei, R., Coleman, B., Markham, J., Barrowei, A., Markham B., Ford, H., Douglas, J., Hunter, J., Gayoso, E., Ahwon, T., Cooper, D., May, K., Setterfield, S., and Douglas, M. (2021). Indigenous-led responsible innovation: lessons from co-developed protocols to guide the use of drones to monitor a biocultural landscape in Kakadu National Park, Australia. *Journal of Responsible Innovation*, 8:2, pp.300-319.

and nation states are harmonised (at least in relation to their ethical principles towards AI), and historically marginalised knowledges and peoples are given a voice.

Finally, a shared focus on ethical principles and human rights, coupled to a ‘soft’ approach to governance can result in cohesion where more traditional and nationalistic approaches may otherwise fail. For example, the Tianjin Biosecurity Guidelines successfully harmonised Chinese and US approaches to an extremely contentious issue, biosecurity, despite their wildly different geopolitical interests and national approaches. In short, codes enable a different type of conversation. Many international guidelines, treaties and codes of conduct are critiqued by legal scholars for failing to result in meaningful legal implications, but the creation of such norms is an important feature in a broader landscape of governance.

Could an ‘open drafting process’ connect different groups to bridge conversations about algorithmic discrimination and digital repression?

If codes are to be democratic tools, they should be informed by multiple perspectives on emerging technologies. Wide-ranging participation can strengthen connections between groups and bridge siloed conversations. Roundtable participants took an inclusive approach to identifying potential candidates for any drafting process. Most agreed that any group impacted by a code should have the opportunity to contribute to its drafting. In the case of technology this involves an immense variety of potential candidates. They also agreed that paying attention to historical inequalities and marginalised voices should guide participation. Highlighting potential structural problems and existing power asymmetries helps identify groups who should actively be encouraged to participate.

However, there is no one-size fits all approach to participation. Before embarking on an ‘open drafting process’ it is as — if not more — important to first practise ‘institutional reflexivity’ and systematically consider the assumptions, motivations and boundaries of participation.⁸

5.1 Refusing to participate is a legitimate course of action

For participation to be meaningful it must be designed on a case by case basis. Those designing participation exercises should be aware that stakeholder engagement, public consultation and co-design all function within a network of power dynamics. ‘Including’ someone enrolls them into the larger project of which the code is a part and which some may wish to resist. Participation must therefore carefully consider the institutional system in which it is embedded, and avoid coercion or the perpetuation of historical inequalities through outdated data governance models or colonial patterns of thought.⁹

Participation must also be considered in the context of other available opportunities. As one of our participants explained, “who gets a ‘seat at the table’ also depends on what other tables are available”. For instance, Chile did not contribute to the OECD’s Recommendations, not because they disagreed with the endeavour, but because they prioritised ongoing work enshrining similar prin-

⁸ See, e.g., Smith, R. D. J., Hartley, S., Middleton, P., & Jewitt, T. (2021). Knowing when to talk? Plant genome editing as a site for pre-engagement institutional reflexivity. *Public Understanding of Science*, 30(6), 740–758.

⁹ Williamson, B., Provost, S., Price, C. (2022). Operationalising Indigenous data sovereignty in environmental research and governance. *Environment and Planning F*, 0(0).

principles in national legislation. Understanding how codes fit within the broader context of other opportunities and governance structures helps identify who is best served by engaging with codes and who might be better served by other opportunities.

“We don’t seem to be lacking in codes, but we do seem to be lacking in means and incentives for developing capacities for bringing these codes to life and living with them.”

- Emma Frow

5.2 By including some you exclude others

A code’s objectives matter. There is a difference between democratising within a technological profession and including people outside the profession to render it more democratic. Any attempt at inclusion also involves a form of exclusion.¹⁰ One participant outlined how their code of conduct actively paid more attention to marginalised voices to ensure a safe and welcoming space for the historically marginalised. To create this safe and ‘inclusive’ environment they necessarily took the decision to exclude other perspectives from participating. This included claims of reverse sexism and reverse racism.

Perhaps most obviously, roundtable participants reminded us not to forget the non-human actors affected by global technologies, such as plants, non-human animals and other organisms. How does open drafting cater to the needs of non-human parties and ecosystems? A drafting process should pay attention to these tensions and consider how they might shape approaches to participation.

5.3 There are often practical constraints on participation

All drafting processes involve tensions and practical constraints that complicate participation. Those without means may want to participate, and the barriers can range from the mundane and logistical (having money to travel or equipment to connect) to the esoteric and epistemic (having the specialist knowledge or vocabulary to participate effectively). There might also be tensions between an organisation’s *desire* to be open and its *ability* to internalise external messages.¹¹ Does participation necessitate ‘governing slowly’? Balancing priorities between agility and inclusivity needs to be done with care and will depend upon the overarching aims and objectives of the ethical code of conduct.

Further, participation needs will evolve over the course of a drafting process. Early questions might focus on values and priorities, whereas the middle of the process might benefit from understanding different organisational cultures, and the end from ‘sense-checking’ text. Clarifying a code’s own objectives, needs and constraints before attempting to satisfy those of others, will help clarify the types of participation that is desirable.

¹⁰ Giraud, E. H. (2019). What Comes after Entanglement? Activism, Anthropocentrism and an Ethics of Exclusion. Duke University Press.

¹¹ Rayner, S. (2012). Uncomfortable knowledge: the social construction of ignorance in science and environmental policy discourses. *Economy and Society*, 41(1), 107-125.

What operationalisation and implementation issues should be considered from the outset?

“Ethical capacities are almost never going to be the decisions of isolated individuals. They are almost always decisions made by teams, by committees, by research groups.”
- Shannon Vallor

Our roundtable generated five ways that codes of conduct could be reinvigorated to give them more meaning and power. Together these considerations would provide an informed, adaptive, and institutionally reflexive set of actions to take forward into the next stage of the Technologist Code of Ethics Project.

6.1 Put codes in context

Our roundtable participants consistently highlighted how codes of conduct are shaped by their social, cultural, political and technical contexts. They also highlighted how codes need to be effectively anchored in those contexts to be useful.

There will always be a tension to balance — a code necessarily exists amongst specific institutional commitments and values, yet it should also articulate shared values and potentially drive institutional change. This is challenging because institutional arrangements are not arbitrary. Codes can therefore easily be co-opted into corporate incentives, business strategies and structures without effecting any reflection on values or guiding change. It is important that a code of conduct is integrated into these broader systems, but this highlights the care needed to ensure a code drives change and not the other way round.

“Who are we to tell people what good democracy looks like?”
- Nina Frahm

One approach to manage this tension is to actively engage with the broader dynamics of which codes are necessarily a part, negotiate a place for them in an organisation or professional culture, and potentially design them with accompanying institutional arrangement or structures. As Emma Frow observed, embedding codes into wider systems and structures helps to “give them meaning and power”. At the very least, the process of drafting codes should include designing and implementing support structures (including better education and training) and negotiating better compliance structures (including better protocols to anticipate challenges rather than react retroactively).

6.2 Focus on collective responsibility

Many codes focus heavily on the individual inventor, with limited support from wider support or compliance structures. But big technical decisions are rarely made by isolated individuals; they are made by teams, committees, designated groups, and more. This means that in science and technology, ideas of collective responsibility are more useful than the more usual, individual notions of responsibility.¹² Codes should prioritise ways to guide collectives as much as, if not more than, individuals.

¹² Stilgoe, J., Owen, R., & Macnaghten, P. (2013). Developing a framework for responsible innovation. *Research Policy*, 42(9), 1568-1580.

6.3 Think of codes as processes rather than objects

Our roundtable participants almost unanimously agree that codes of conduct should be thought of as on-going processes that are constantly revisited and updated rather than static principles or documents. Thinking of codes in this way makes it more likely that they will stay attuned to changing contexts and fosters an on-going responsibility to the values they encode.

6.4 Build capabilities for people to live by their codes

A procedural approach to codes also emphasises the need for people and organisations to be able to live by the codes they write. Recent work has used a human capabilities approach to articulate how funders can remove institutional barriers and provide resources for people to act in socially responsible ways.¹³ Both Luke Stark and Emma Frow urged us to pair codes of conduct with processes that allow technologists to hone their ability to make ethical decisions through ongoing practice, a point backed up by recent RRI literature.¹⁴

Capabilities-based approaches can also apply to diffuse collectives, such as those acting within an innovation system. In this situation, Astola argues that collectives have a forward looking duty to ‘cultivate’ themselves in ways that enable abiding by the code they draft and subscribe to.¹⁵ She suggests that these self-shaping activities work by generating a ‘practical identity’ that remains constant even if the membership changes. So, ongoing self-cultivating and shaping activities of organisations must also form part of the work of putting codes into action.

6.5 Recognise our own roles as creators of codes

It is easy to be critical about the instrumental nature of codes and the role that organisations, individuals, and wider social, cultural, political and technical systems play in their construction. It is also relatively straightforward to propose alternative ways of doing things. However, acknowledging that codes embed some values and not others, and that they are a way of exercising power means that any drafting or recommending process should be approached reflexively. Academics and practitioners coming together alike to pursue more ‘ethical’ and democratic standards still have their own ideas of what ‘good’ is, or what ‘democratic values’ are and should be afforded the same level of scrutiny and critique as everyone else.

Conclusion and lessons from hosting the roundtable

The key lesson to emerge from this roundtable has been the importance of having diverse participants in the room. Attendees came from a range of sectors and disciplines, with different knowledges and multiple experiences. Very few of us had met before and we received positive feedback, including requests to continue the conversations we began. This shows the appetite for and value of simply convening and talking about a shared object of concern within the Public Interest Technology landscape.

¹³ Smith, R. D. J., Bernstein, M. J., O’Donovan, C., & Cuttica, F. (2022). Capabilities to support responsible research & innovation in European biotechnology. Funding Cultures Lab Working Paper. University of Edinburgh.

¹⁴ Macnaghten, P. (2020). *The Making of Responsible Innovation*. Cambridge University Press.

¹⁵ Astola, M. (2022). Collective Responsibility Should be Treated as a Virtue. *Royal Institute of Philosophy Supplement*, 92, 27-44

Having this diversity in the room highlighted many tensions and ambiguities that a more homogenous group would not have done. It also drew attention to the partiality of our own knowledge and variation in interpretations and perspectives. At the same time, the participatory design allowed us to productively discuss codes of ethics in relation to a wide range of systems and sectors, concepts, disciplinary backgrounds, and share learnings and lived experiences. In one half day we learned a lot from attending to the diversity of codes brought to the event, the different purposes they serve, who they engaged, and the tensions and ambiguities they forced us to confront.

As organisers we faced two specific challenges. First, it is of course, hard to cohere discussion across such diversity of knowledge and experiences, with only partial overlap in specific knowledges, concepts, and shared vocabularies. Upon reflection, giving more time for participants to actively familiarise and dwell within each other's standpoints, perspectives, and experiences would have fostered even greater empathy, social cohesion, and perhaps even a group practical identity. Our second challenge was the timeline. While our participants came representing a range of experiences and cultural backgrounds — with speakers from Canada, the USA and Germany — a longer planning timeline may have enabled us to further broaden the participation of our other attendees.

This stands as a lesson not only for future roundtables but for any ongoing work with diverse groups. It is perhaps most poignantly applicable to the considerations already discussed in relation to open drafting and institutional reflexivity. Participation with each group must be carefully considered.

Annex 1: Methodology

The roundtable was held on Friday 18th November and attended by 22 invited participants. Attendees comprised academics from a variety of backgrounds including philosophy, STS, engineering and more, as well as technology practitioners ranging from industry professionals to creatives and activists. The attendees also represented a diverse array of career stages ranging from students to Professors and Company Directors.

The roundtable lasted half a day and combined short, plenary talks from invited speakers with interactive roundtable discussions amongst smaller breakout groups. The event comprised two main sessions.

The first focused on participants' experiences working with and studying codes. Emma Frow and Nina Maria Frahm provided provocations that framed the subsequent roundtable exercises. Here, discussions focused on unpacking the contexts of code production and implementation, and identifying lessons learned from participants' own experiences with codes. There followed a short lunch with networking opportunities.

The second session addressed how we might better engage with codes. Shannon Vallor and Luke Stark provided a set of provocations and the subsequent discussions explored topics of inclusion, participation, and participants' suggestions for rethinking codes.

To ensure discussion remained grounded in lived experiences, each participant submitted an example code of conduct ahead of the event. These codes ranged from transnational codes (such as UNESCO's Recommendation on the Ethics of Artificial Intelligence) to professional membership codes (such as the ACM Code of Ethics and Professional Conduct) to participants' own organisations' codes (including several technology companies). Not only did these codes ground discussion in practical detail, they also ably demonstrated the diversity of contexts in which technologists codes of ethics emerge.

This report draws on literature analysed during the preliminary scoping review, papers referenced and suggested by roundtable participants (including the submitted codes of conduct) and a thematic analysis of data generated through the roundtable itself.

Annex 2: Programme

10:30am - 11:00am

Meeting, greeting, and introductory statements over light refreshments.

11:00am - 12:45pm: Roundtable Discussion Part 1: Critiquing Codes

11:00am - 11:30am: Plenary Talks

Two short provocations on the theme of 'Critiquing Codes' from Emma Frow and Nina María Frahm.

11:30am - 12:45pm: Interactive breakout group discussion

- a) Lessons learned from engaging with codes
- b) Situating codes in broader contexts

12:45pm - 1:30pm

Lunch and networking

1:30pm - 2:55pm: Roundtable Discussion Part 2: Rethinking Codes

1:30pm - 2:00pm: Plenary Talks

Two further provocations on the theme of 'Rethinking Codes' from Shannon Vallor and Luke Stark.

2:00pm - 2:55pm: Interactive breakout group discussion

- c) Considerations of inclusion and participation in codes
- d) Rethinking developing codes to be more democratic and effective

2:55pm - 3:00pm: Roundtable Wrap-Up and Next steps

Annex 3: Participants

Organisers

Robert Smith	University of Edinburgh
Matjaz Vidmar	University of Edinburgh
Filippo Cuttica	Independent Consultant
Sophie Stone	University of Edinburgh

Speakers

Nina María Frahm	Aarhus University
Emma Frow	Arizona State University
Luke Stark	University of Western Ontario
Shannon Vallor	University of Edinburgh

Participants

SJ Bennett	University of Edinburgh
Cennydd Bowles	Independent Consultant
Jane Calvert	University of Edinburgh
Benedetta Cantanzariti	University of Edinburgh
Morgan Currie	University of Edinburgh
Steven Drost	CodeBase
Steven Earl	University of Edinburgh
Jess Freaner	IDEO
Kelly Gardner	CodeBase
Nina Kojima	University of Glasgow; Partisan Media
Lena Podoletz	University of Edinburgh
Vardev Sachdev	University of Edinburgh
Xiao Yang	University of Edinburgh
Andrew Youngson	CodeBase

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