After Attitudes: Tracking the Distance Between Science and Society to Guide Action

A Joint GSEJ–PET Vision Paper

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Advances in science are changing not only what societies *can* do, but what we expect and owe to ourselves, one another and future generations. This is especially true of the life sciences, where emerging technologies increasingly touch health, reproduction, identity, family life and the bioeconomy.

Public engagement has a robust tradition of measuring what people think about such developments. Recent European research on fertility, embryo research and genome editing, for example, points to generational shifts in aspirations and reservations about emerging life sciences, and also to considerable ambivalence about how societies should move forward (PET and ESHRE, 2026).

But knowing what people think does not necessarily tell us what to do. With competing priorities and constrained public resources, the challenge is not simply to identify public attitudes and concerns but to understand what lies behind them, which concerns matter most, and where targeted action can make a difference.

Research across biomedical and environmental domains has long shown that apparently fragile or volatile public attitudes are often relational rather than simply cognitive (Wynne, 1996; Nooteboom, 2000; Zhang, 2025). Contention can arise because a technology feels irrelevant or diverts resources from more pressing needs; because its benefits remain materially out of reach; or because people have little agency over the institutions, social relations and risks it creates.

Yet public engagement still too often treats people's *views* as the primary object of attention. Attempts to 'correct' or 'steer' those views can deepen rather than resolve divisions (Bayes, 2025). Views are important, but they are only the visible surface of a deeper relationship. What truly matters is people's agency, or a bottom-up struggle for 'science-related decision-making sovereignty' (Lello and Bertuzzi 2025, 11). We therefore need to move *after attitudes*: from recording what people think to understanding the distance between people, institutions and emerging scientific possibilities.

We chose the word ‘after’ intentionally. We are not suggesting a move *beyond* attitudes, that is, abandoning research on public attitudes or leaving its insights behind. Rather, ‘after’ invites collective reflection and innovation on what we do on the basis of what we know to date (‘after’ as subsequent step), and how we respond to the evolving and often conflicting nature of public attitudes (‘after’ as consequential response). It also asks what, in listening to the public, we should be after.

We believe this shift can generate more nuanced, informative and action-oriented knowledge about how to make sense of, and make use of, public voices for the public good. It is time to reflect on what we have learnt from research on public views of science and explore innovative methods for constructive conversations that can foster stronger, more open and responsive relationships between scientists and publics (Asher and Jesper-Mir, 2026).

Over a 12-month pilot, the Centre for Global Science and Epistemic Justice (GSEJ) and the Progress Educational Trust (PET) will conduct the 'Tuning EARS for the Future' project, funded by Wellcome, to test a new approach through two contrasting genomic cases: direct-to-consumer genetic testing (DTC genomics) and in vitro gametogenesis (IVG). Working with members of the public and LGBTQ+ communities, **we will develop EARS, a compass for action that maps social distance across four dimensions**: Epistemic, Affective, Resource and Structural**.**

This paper sets out our vision and invites collaboration, participation, suggestions and critique. Our ambition is for EARS to become a transferable approach that researchers, funders and engagement practitioners can adapt across scientific domains, and for others to join us in developing better ways to track and compare the evolving social logics around emerging technologies. Ultimately, we want to enable **critical social uptake**: 'critical' both in the sense of identifying instances where the uptake of emerging technologies may be necessary for public benefit, and in the sense of ensuring that decisions about such uptake are made reflexively.

From measuring attitudes to tracking distance

'Distance' is not simply a metaphor for feeling close to or alienated from science. It describes the relational space between people and a scientific possibility: what they know, how they feel, what resources they can mobilise, and how institutions enable or constrain their agency.

EARS therefore shifts the central question of public engagement from 'What do people think?' to 'What is producing the distance, and what should we do about it?' It maps this distance across four interconnected dimensions. **Epistemic distance (E)** concerns access to, understanding of and confidence in knowledge. **Affective distance (A)** captures emotional and ethical responses, from empathy and hope to anxiety and moral discomfort. **Resource distance (R)** concerns the material and immaterial capacities to participate or benefit, including money, time, skills and networks. **Structural distance (S)** captures the institutions and infrastructures that enable or constrain agency, from regulation and healthcare to research and education systems. Together, they capture the

entangled conditions through which societies encounter emerging technologies (Wynne, 1996; Krzywoszynska *et al*., 2018; Shani *et al*., 2025).

To make these distances visible, we combine two complementary tools. **B/BQ (Bridge/ Barrier Quration)** uses facilitated qualitative discussion to alight on barriers, relationships and possible bridges that conventional questioning may miss. The **EARS Compass** provides a quantitative diagnostic for mapping how different groups experience the technological landscape, where they position themselves within it, and how these positions change over time. While a 12-month pilot can only provide an initial snapshot, longitudinal use of the Compass could reveal how scientific breakthroughs, controversies or other major events reshape different dimensions of social distance. In doing so, it can provide an early indication of where action may be needed, and what kind of action might make a difference.

This matters because the same expressed concern can arise from very different dimensions of distance: lack of knowledge, lack of access, ethical unease or distrust in governance. Treating each of these as an 'attitude problem' risks prescribing the wrong response. Making distance visible instead helps pinpoint where barriers lie, where resources are needed, where relationships might need to be (re)built, and where institutional change might be more influential than simply increasing engagement. This shift also brings into focus three persistent misconceptions in public engagement that EARS seeks to move beyond.

Trust is not agreement

A persistent misconception in public engagement is the conflation of trust with agreement. Trust makes disagreement workable; it does not make it disappear. Publics may trust scientists and clinicians, as surveys across diverse cultural contexts consistently show (National Science Board, 2024; Cologna *et al*., 2025), while disagreeing with particular technological choices. Scientists often focus on establishing their authority through expertise. Expertise matters, but it is not enough to establish trustworthiness. People also need to see the human qualities behind science: that scientists are motivated by positive intentions, approach society with fairness and empathy, and are willing to listen and respond to public concerns (Milne et al, 2026).

Disagreement need not signal distrust. It may reflect different values, experiences and risk-benefit trade-offs, or – in EARS terms – different perceptions of the distance between where society is, and where it ought to be. Indeed, trust may be precisely what allows disagreement to be voiced and worked through.

Public engagement should therefore make room not only for consensus, but for workable compromise (Van den Hove, 2006; Bergmans, 2008). Making different perceptions of distance visible helps to clarify where we agree, where we differ, and what we need to negotiate to move forward.

Distance is not a deficit

A second misconception is that successful engagement necessarily shortens the distance between scientific possibility and targeted communities. But shorter is not always better. Communities may reasonably seek greater distance from particular commercial actors, stronger boundaries around genetic or genomic data, or slower movement towards particular technological futures.

EARS therefore rejects the idea that distance is simply a deficit to be minimised. The question is not 'How close can we get?' but 'What distance is warranted, for whom, and under what conditions?'. Sometimes responsible governance means bridging distance; sometimes it means maintaining, or even intentionally creating, one.

The goal is not minimum distance, but warranted distance: which gaps should we bridge, which should we maintain, and where do we need new boundaries?

Collective action is not conformity

Public engagement is often framed as an exercise in listening. But listening is not just about giving everyone a voice; it is about knowing what to listen for. EARS helps stakeholders to tune in: to recognise where distance lies, understand what produces distance, and decide what should be bridged, negotiated or maintained.

This changes how we measure successful engagement. The question is not simply 'Did opinions change?' or 'Did participants reach consensus?' but 'Did we gain a view beyond our own position and better understand the distances and barriers experienced by others, and did that wider view help us see where coordination is possible across different positions?'.

The aim is not uniform uptake, but coordinated yet differentiated uptake: enabling people to move forward together without requiring them to start from, or arrive at, the same place.

Tuning EARS for the future

EARS is a starting point, not a finished measure. Over the next 12 months, we will test and refine methods to meaningfully measure, map and track social distance, building on psychological research to make its insights more relational, diagnostic and actionable.

A more engaged society is not necessarily one with less distance, but one better able to navigate distance: to judge what distance is warranted, where movement matters, where differences should remain, and how we can act together from different positions. After attitudes, we offer EARS as a compass, not a destination.

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