Conference "Knowledge, Citizenship, Democracy"

Date: April 14-16, 2021

Organizers: Lisa Herzog, in collaboration with Patrizia Nanz (IASS Potsdam), Jeroen de Ridder (Amsterdam/Groningen), Boudewijn de Bruin (Groningen), Jan-Willem Romeijn (Groningen), Mathias Frisch (Hannover)

"Place": fully only – to register and receive the links, please email l.m.herzog@rug.nl

April 14	
14.00-14.15	Welcome and Introduction
14.15-15.30	Keynote I: Maria Baghramian: Trust as Norm of Science
15.30-15.50	longer break (with digital meeting opportunity)
15.50-16.25	Natascha Rietdijk: Post-truth Politics, Gaslighting, and Epistemic Autonomy
16.25-16.30	short break
16.30-17.05	Carline Klijnman: Epistemic Democracy and Positive Voting Duties
17.05-17.10	short break
17.10-17.45	Gijs van Maanen: Open ground water data in Noord-Brabant: a philosophical ethnography of open data policy
April 15	
14.00-15.15	Keynote II: Albert Dzur: Wicked problems, co-production, and knowledge sharing: a worst-case analysis
15.15-15.20	short break
15.20-15.55	Tarun José Kattumana: Free Exchange of Ideas or False Equivalence: Fuller, Oreskes, and the Case of Vaccine Hesitancy during the COVID-19 pandemic
15.55-16.15	longer break (with digital meeting opportunity)
16.15-16.50	Kevin Elliot: Specialized Citizenship and its Epistemic Burdens
16.50-16.55	short break
16.55-17.30	Ezgi Sertler: Epistemic Dependence and Oppression: A Telling Relationship?
17.30-18.00	digital meeting opportunity ("digital drinks")
April 16	
14.00-15.15	Keynote III: Boudewijn de Bruin: Knowing and acknowledging freedom
15.15-15.20	short break
15.20-15.55	Marta Morvillo: Why should citizens trust EU regulatory expertise? Legal warrants, science and politics in EU food governance
15.55-16.00	short break
16.00-16.35	Emanuel John: The Knowledge of Social Professions and its Relevance for Democracy
16.35-16.45	Concluding words

Digital Conference "Knowledge, Citizenship, Democracy"

Date: April 14-16, 2021

Location: online (via meet, @ University of Groningen)

Conference Theme

The ability of democratic societies to deal with knowledge responsibly seems under threat. In recent years, the public debate has been shaped by the denial of established scientific insights, distrust of experts, and an apparent preponderance of emotions over factual knowledge. Often, instead of agreeing on facts, and conducting political debates about values and interests, knowledge itself has become an area of political contestation.

But how should democratic societies deal with expert knowledge? Democracies are built on the assumption of moral equality; social differentiation, and with it the differentiation of knowledge, introduce an element of inequality. How can this fundamental tension be handled? Historically, claims to expertise have often been used to justify problematic forms of hierarchy and exclusion. But the answer can hardly be to deny all claims to differential expertise; instead, a *democratic* understanding of expertise is needed.

Given today's big challenges, such as the fight against anthropogenic climate change or against global poverty, it is clear that different forms of knowledge need to be harnessed and integrated into the political process. How can experts and citizens find new forms of interacting with each other, online and offline? What does it mean for experts to act as democratic citizens and democratic professionals? What role does the "marketization" of knowledge play for understanding the current conundrum, and how might these problems be addressed? And last but not least: What epistemic responsibilities do citizens have?

The conference theme thus brings together issues that have been treated in philosophical disciplines such as social/political epistemology, deliberative and epistemic democratic theory, and philosophy of science, but also in neighboring disciplines such as science and technology studies, theories of the professions, or media studies. As is appropriate for a conference hosted at a center for "Philosophy, Politics, and Economics", we want to bring together different perspectives, in an interdisciplinary dialogue.

Keynotes

Trust as a Norm of Science Maria Baghranian t.b.c.

Wicked problems, co-production, and knowledge sharing: a worst-case analysis Albert W. Dzur

The "wicked problem" concept refers to multi-faceted social issues that are difficult to define, involve conflicting normative perspectives, and suggest policy solutions with potentially negative repercussions. Scholars and practitioners applying this concept to the US opioid crisis see collaborative governance as a solution: professionals in health care, law enforcement, and government must work together along with engaged citizens. Multi-professional teams, open to citizen perspectives, aim to achieve a "collaborative rationality." However, collaboration with fellow professionals is easier than collaboration with citizens

(which I call "co-production" and "doing with" and "learning from"). Indeed, looming large for the planning theorists Rittel and Webber, who conceived the wicked problems framework, was public distrust of professionals.

Rittel and Webber never developed a model of professionalism to address this challenge. Later scholars, drawing from their argument, advocate humility and openness to ground-level learning. I argue that this stance is complicated by the history of professional-citizen relations:

- professionals have not just failed to solve problems, but have contributed to them *iatrogenically* (as with overprescription and criminalization);
- professionals have a kind of *prescriptive power* (to dispense drugs, therapies, penalties, and policies) accumulated for centuries and difficult to share;
- and professionals have played a major role in *labeling* not just problems but people who become walking embodiments of problems (the addict, the dealer, the criminal).

These three features of professionalism, marking *power over* citizens, must be addressed by reformers with realistic strategies for changing attitudes and practices, for any genuine *doing* with and learning from citizens to occur. My research has found, however, some coproduction happening in cities and towns across Ohio, a state hard hit by the opioid crisis. Public administrators work with community groups and open channels of dialogue with citizens affected by substance use, police work with substance users to achieve non-penal options, judges empower former substance users to serve as peer recovery coaches in drug courts, and public health and social work agencies include them on response teams and peer support groups.

This is a *worst case* analysis because of the difficulties of co-production with citizens who are marginalized, stigmatized, and who have had mostly negative experiences with professionals and formal institutions. Analyzing the limited co-production happening in this unfavorable domain expands our understanding of both the conflicts and the constructive micro-level processes involved and offers a vision of knowledge sharing and institutional change under those extreme conditions in which citizen *voice*, *agency*, and *practical experience* struggle for recognition.

Knowing and acknowledging freedom Boudewijn de Bruin

In this talk, I am concerned with the epistemic foundations or assumptions of liberalism, with illustrations/applications involving fake news, among other things. I begin by considering several well-known arguments for the value of freedom (e.g. based on desire satisfaction, self-determination, learning, responsibility). A quick look at their logical form shows that they make implicit epistemic assumptions (the exact content of which is different for different arguments). Using these observations plus some insights about the value of knowledge (as opposed to the value of 'mere true belief'), I then defend the claim that if you have good reasons to value freedom, you have even better reasons to value 'known freedom': freedom about which you have knowledge. I show the relevance of this in political contexts (e.g. voting, expertise) and economic contexts (e.g. consumer obfuscation, informed consent).

Post-truth Politics, Gaslighting, and Epistemic Autonomy Natascha Rietdijk

In 2016, just after the Brexit referendum and the US presidential election, "post-truth" was elected the word of the year. Ever since, journalists, social scientists and philosophers have sought to understand the nature and dangers of the phenomenon this term refers to. Some have pointed to its negative effects on our knowledge (Levy 2017), others have connected it to Frankfurtian *bullshit* (Davies 2017), and still others have warned that post-truth rhetoric is detrimental to democracy (Suiter 2016; Fish 2016; Rubin 2018). Though it has been argued that the term "post-truth" is ambiguous and misleading (Habgood-Coote 2018), the factual existence of political discourses that exhibit a lack of concern for facts is undeniable – and epistemically problematic. While each of the above analyses captures important hams involved in that type of political discourse, I believe there is one more wrong which has not sufficiently been recognized yet. Post-truth politics does not just impair knowledge or democracy, it also undermines our epistemic autonomy. Because it does so, and because of how it does so, it is remarkably similar to gaslighting.

Gaslighting, after the 1938 Patrick Hamilton play *Gas Light*, is a type of manipulation aimed at having the victim doubt their own judgment, perception, and sense of reality. At its worst, this can result in the complete eradication of the victim's epistemic self-trust, leaving them to question even their own sanity. Psychologists have been studying the phenomenon since the late 1960s. More recently, journalists have speculatively connected powerful political actors like the Trump administration and the Kremlin to gaslighting practices (Caldwell 2016; Ghitis 2017; Carpenter 2018). Such opinion pieces seem to be getting at something important about post-truth rhetoric, yet there has been no substantive philosophical discussion of this supposed connection and its implications for epistemic agency. My aim in this paper will therefore be to further investigate in what regard the concept of gaslighting can teach us something about the dynamics and dangers of post-truth politics.

As I will argue, there are at least three categories of post-truth rhetoric that bear resemblance to gaslighting techniques: first, the introduction of counternarratives, second, the discrediting of (potential) critics, and third, the denial of plain facts. These strategies are used to deflect criticism, to confuse, and to blur the distinction between reliable and unreliable sources. In this process of disorientation and epistemic isolation, the target's epistemic self-trust is slowly being eroded. Much like gaslighting, the victim's ability to identify authorities and truth is undermined, weakening their grasp on reality, and strengthening the power of the gaslighter.

Shifting the focus in this way from democracy and knowledge to the effects on victims allows for new insights into the various harms of post-truth politics. When speaking of post-truth, we typically think of the powerful, of those who have so much self-trust they feel they are above the facts. But there is another, perhaps bigger group of people who instead feel confused, disoriented, and powerless. Knowledge of gaslighting enables us to recognize its pernicious dynamic where it was invisible to us before. That recognition is a crucial first step in starting to resist the manipulation.

Epistemic Democracy and Positive Voting Duties Carline Klijnman

Democracies put a lot of responsibility on citizens regarding the formation of our political decisions. Questions as to whether citizens are able to appropriately live up to these responsibilities focus on so-called citizens' competence. Judging from the results of some of the main works in this field, one possible explanation for democracy leading to sub-optimal outcomes is incompetence of the public. The common voter is often accused of lacking political knowledge, reliable factual information, coherent beliefs or a clear and action-guiding ideology. In response to such findings, Jason Brennan endorsed two controversial claims regarding voting ethics: 1) In contrast to common thinking, we have *no* individual moral obligation to vote. 2) When we vote we have an individual moral obligation to vote well, according to Brennan, is to vote for that candidate who is most likely to contribute to the common good and with epistemically justified reasons to support this particular candidate. Basically, we can reduce Brennan's two main principles to one negative moral duty – Do not vote badly! This implies that abstaining from voting is always permissible. I argue that even from an instrumental viewpoint, Brennan's voting ethics fall short by not providing any moral incentive for incompetent voters to improve the quality of their epistemic beliefs nor for competent voters to go out and vote.

Using the mathematical logic of the CJT, we can see that a bigger competent electorate increases the likelihood of the epistemically optimal option being chosen. From this I argue that participation rates should also be of concern for instrumentalist accounts of democratic legitimacy - and not just for proceduralist accounts, as is often assumed. Additionally, I argue that besides refraining from voting badly, democratic citizens have individual responsibilities to *contribute* to good democratic outcomes when this does not have significant moral costs. I ultimately propose adding two *positive* duties to Brennan's voting ethics: 3) citizens ought to make an effort to become competent voters, and 4) once competent, one ought to participate in the voting process. Failing to become a competent voter is not necessarily a moral failure. However, if citizens refrain from even trying to become competent, or fail to utilize their competence, they are not living up to their epistemic citizen responsibilities.

Open ground water data in Noord-Brabant: a philosophical ethnography of open data policy Gijs van Maanen

For about a decade, governments have been experimenting with the publishing of 'open data'. The concept of open data usually refers to data made available by governments with technical features that allow for easy reuse by non-governmental actors such as citizens and journalists. The act of publishing open data, then, is thought to strengthen values like openness, transparency, collaboration, participation, and accountability. But not much is actually known about the effects of open data-policies. In what way do open data-policies effect society? How does open data change the functioning of governmental organizations themselves? And how does open data effect the life and work of involved civil servants, citizens, and other actors? In my research I study the practice of open data-policies in the Netherlands through the lenses of 'public philosophy' and ethnography. Drawing from the work of political philosopher James Tully I argue for an engaged and critical analysis of political practices in practice. Or, to put it differently: a study of political practices like open data-policies requires an analysis of these policies *in practice* and *with practitioners*, rather than through the constructions or applications of theories of justice, legitimacy, or democracy.

To be able to bring this idea into practice, I engage in an in-depth case-study analysis of open data-practices found in two different governmental bodies. The case-study that I will discuss here concerns the practice of measuring ground water levels by a water board ('waterschap'), and the publishing of these measurements in a (relatively) open format on their website. For about one year, I am allowed to interview everyone who is willing and involved in the process of ground water measurement, data-processing, data-publication, and policy-making. The question guiding this 'following of the data' is (shortly) how this open data process transforms the regulatory practices of the governmental institution of the water board.

My preliminary results indicate the multifaceted function of the open data within the water board itself, but also between the water board and other actors. For some participants, the open data functions as an object facilitating discussion between various parties. For them, it has more of a communicative than an epistemological function. Other participants praise the manner the open data, in its particular visualized form, allows for easy decision-making. For other groups, the open data functions as a legal benchmark with which they can evaluate the water board's water management. And some, understand the open data-set as an invitation to critically interrogate the policy of which the data publishing is formally part.

Thus different groups of actors seem to interpret the same data-set differently. The question left to answer is which 'domain of knowing' in the end determines how the open data should be understood. Or to put it differently: which actors' interpretation is the most dominant one, and which ones are being silenced? Does the publication of data, for instance, increase the transparent character of the water boards' policy, and if so (or not), why (not)?

Free Exchange of Ideas or False Equivalence: Fuller, Oreskes, and the Case of Vaccine Hesitancy during the COVID-19 pandemic Tarun Jose Kattumana

The increasing distrust of experts has been discussed under the broadly conceived label of the post-truth condition. The most "widespread view" sees post-truth as a deterioration of public discourse where objective facts and expert consensus are ignored/misunderstood (McIntyre, 2018; Nicols, 2017). Among the many responses to this position, I will consider two prominent perspectives.

First, Steve Fuller opposes the "widespread view" and argues against an explicitly negative characterization of the post-truth condition, claiming that it is better understood as the growing pains of a maturing democratic intelligence (Fuller, 2018). Fuller draws similarities between post-truth and the protestant reformation where science, like Christianity, ceases to be a unified doctrine and is transformed into a personalized one. Fuller refers to this personalized view of science as *Protscience* where the lay public questions expertise to uphold the right to decide on scientific matters where they bear the consequences (Fuller, 2010). This follows Fuller's call for symmetry between experts and non-experts to facilitate a less hierarchical exchange of ideas. Second, Naomi Oreskes and colleagues also contest the "widespread view" arguing that only specific groups/individuals contest the veracity of widely accepted scientific claims (Bakes & Oreskes, 2017). What concerns Oreskes and colleagues is the negative impact of disinformation spread by said groups/individuals on the public perception of science (Conway & Oreskes, 2010). Building on feminist philosophy of science, Oreskes notes that scientific objectivity is a social accomplishment and argues for regaining the public's trust by emphasising the immense social value that scientific expertise has brought the public (Oreskes, 2019). Consequently, this accomplishment is seen to be the result a self-critical and epistemically diverse scientific community. However, the degree to

which this self-critical scientific community should be open to the criticisms of non-experts remains ambiguous. Oreskes sees much danger in Fuller's claims to symmetry between experts and non-experts, associating calls for less hierarchical free exchange of ideas to be instantiating a false equivalence.

This presentation examines the tension between Fuller and Oreskes in the context of vaccine hesitancy. While experts emphasise vaccine safety and stress that instances of adverse side effects are extremely rare on the basis of population level studies. Hesitant parents, in keeping with Fuller's *Protscience*, frame the decision to vaccinate in *personal terms* and assess risk in terms of the very possibility of harm to *their child*, and not general terms (Hobson-West, 2007; Goldenberg, 2016). In this context, parent researchers like David Trowther, as instance of "citizen science", have explored the parental desire to know which sub-set of children would respond badly to vaccinations (Trowther, 2002). This research suffers from sampling and reporting bias, receiving no official response in the process. Similarly, during the COVID-19 pandemic non-experts have suggested alternate cures to SARS-CoV-2 in opposition to vaccines receiving fleeting official consideration. This presentation examines the extends to which scientific institutions must engage with the concerns of non-experts in an attempt to navigate between a less hierarchical exchange of ideas and the pitfalls of false equivalence.

Specialized Citizenship and its Epistemic Burdens Kevin Elliot

Issue specialization among the mass public, whereby groups of citizens attend to specific political issues, is a promising epistemic mechanism because it instantiates an epistemic division of labor, reaping efficiency gains and helping to make decisions more informed (Elliott, forthcoming). But what model of citizenship does this account entail? This paper argues that issue specialization alleviates the epistemic load on ordinary citizens relative to what is expected of them in much democratic theory. It establishes an expectation that citizens will pay attention to at least one corner of the political arena and think about it critically, and use the judgments formed in that process to guide their political participation.

Through specialization, this account reduces what is expected of citizens since the implicit epistemic standard embedded within much democratic theory requires citizens to optimize in decision making. Under representative institutions, this means citizens must gather all the relevant information germane to each political issue, use that information to generate an ideal policy for each issue, trade off all of issue positions against each other to combine them into a platform, and then find the party which most closely approximates that platform, engaging in further tradeoffs in doing so.

Specialization cuts information search costs associated with finding out about every issue, since citizens are expected to follow just one or a few issues. It also reduces the need for citizens to weigh tradeoffs since they consider so few issues, easing citizens' processing burden. Finally, it simplifies the task of identifying the best party or candidate, since one need only consider positions on a small set of issues rather than entire platforms.

This account replaces Walter Lippmann's "omnicompetent citizen" with a more epistemically modest specialized citizen. The account also has the merit of working with several inherent features of individuals and how they experience politics. The complexity of politics means that individuals are only capable of attending to a small subset of the political world. The model of the specialized citizen works with this limitation to focus the individual's limited

cone of attention on a specific part of the political world in a way that can aggregate to the advantage of all. Specialized citizens are also able to work within the sharply limited bandwidth that individuals have to think about politics when compared with all the other concerns in their lives. This aspect is not about attention, as above, but rather processing the information that attention reveals. Lastly, individuals have a finite ability to care about things, in the sense of feeling emotionally invested in their fate, and specialized citizenship works with this limited reservoir of care instead of spreading it widely, and so wasting it.

The paper develops the specialized citizen model and develops responses to objections to the overall specialization argument. Among these are anti-Millian arguments that loud minorities with incorrect views may come to dominate specialized deliberative spaces. Another is a concern that parties and candidates are not up to executing the tradeoffs necessary to reap the gains of specialization.

Epistemic Dependence and Oppression: A Telling Relationship? Ezgi Sertler

Epistemic Dependence, which refers to our social mechanisms of reliance (*what* we rely on and *how* we rely on it) in the process of knowing, has been an important philosophical tool for highlighting the role of expertise in our lives and showcasing the social nature of knowledge production. Thus, it has been deemed central for social epistemology. Epistemic Oppression, on the other hand, aims to capture persistent exclusions from processes of knowledge production. In a way, then, discussions of epistemic oppression aim to detect flawed practices where epistemic dependence is at work. In this paper, I inquire into the relationship between these frameworks. My argument is about one aspect of the relationship: I claim that tracking operations of epistemic dependence in democratic institutions can illuminate epistemically oppressive practices within those environments. In other words, identifying different forms of epistemic dependence as well as their workings operative in a context can help us discern the different forms of epistemic exclusions at play.

In order to show this, I organize the existing discussions of epistemic dependence in social and political epistemology into three groups: interpersonal, communal, and structural. *Interpersonal Epistemic Dependence*, as the most commonly discussed and acknowledged form, takes what we rely on to be other persons and emphasizes our reliance on the epistemic labor of other knowers and their testimonies. *Communal Epistemic Dependence*, on the other hand, refers to relying on our communities for our practices of knowing. This reliance is irreducibly collective in that it extends beyond individuals. Following these two forms of epistemic dependence, I develop an account of *Structural Epistemic Dependence* based on our reliance on structures for knowledge production. Structural Epistemic Dependence consists in the fact that, in knowing something, we rely on how structures (social and political arrangements and institutions) manage ignorance and knowledge.

After discussing each form of epistemic dependence, I use the current institution of asylum to demonstrate what each form of dependence amounts to in an institutional setting and how each form of dependence can lead to different kinds of epistemic exclusions. For instance, while problematic operations of interpersonal epistemic dependence can systemically cause failures to *believe* applicants (epistemic injustice), problematic operations of communal epistemic dependence can systemically prevent them from being *understood*. Structural Epistemic Dependence, on the other hand, allows us to see how these 'failures to believe' and 'failures to understand' can be structurally maintained. I conclude that looking at problematic

operations of epistemic dependence in institutional settings can provide an illuminating framework for building more accountable democratic institutions.

Why should citizens trust EU regulatory expertise? Legal warrants, science and politics in EU food governance Marta Morvillo

Public trust in experts is shaped by ideas and expectations as to what is seen as their legitimate role in a given context. What is regulatory experts' role in a democratic polity? Are they mere knowledge providers or one of many actors involved in more complex and value-laden science-policy issues? Depending on how one answers these questions, the institutional arrangements and legal mechanisms aimed at fostering citizens' trust in experts may vary significantly. At the same time, mismatches between normative expectations as to the legitimate role of experts and the actual practices of regulatory-expert bodies may lead to tensions and ultimately result in a failure to secure citizen's trust. The case of EU food governance is emblematic in these regards. The current institutional architecture of EU food governance (Regulation 178/2002, the General Food Law, hereinafter GFL) has in fact been designed as a reaction to the food crises occurred in the 1990s, in an attempt to restore public trust in the EU's ability to effectively regulate food-related risks.

This paper addresses the coessential relationship between expertise and trust in EU food governance from a legal standpoint. In particular, it focusses on how the EU's commitment to securing citizens' trust in its regulatory expertise is reflected and substantiated in the legal framework governing EFSA. How does 'trusted science' look like in EU food governance? In other words, what justifications are put forward in the GFL for citizens to trust EU regulatory expertise? The paper advances two main claims: first, that the meaning of 'trusted science' is shaped by the normative expectations as to the role regulatory expertise is to play in a given regulatory setting; secondly, that there should be an alignment between such normative expectations and trust-enhancing legal arrangements, as well as between expectations and practices of expert governance. It ultimately shows that EU food governance has suffered from a misalignment in both respects and that recent developments might have the potential to realign normative expectations, legal arrangements, and institutional practices, based on a more iterative understanding of the role of regulatory experts in risk regulation.

The Knowledge of Social Professions and its Relevance for Democracy Emanuel John

Recent theories of the profession of social work stress its epistemic responsibility in democratic discourse and processes (Staub-Bernasconi). Thereby reference to its unique expertise about social problems and suffering, such as effects of injustice and inequality, is made. At the same time, there is an ethical critique of social work's claimed expertise in democratic discourse: Speaking as experts for the needy individuals that actually experience social problems and suffering may lead to new inequalities and dependencies (Brumlik, Spivak). Consequently the responsibility of social professions, such as social work, should be limited to empowering needy individuals to articulate their problems, suffering and interests.

Against the background of this controversy, this contribution reflects on the specific form of expertise and knowledge social workers have. The aim is to clarify to what extend social professions, of which social work is next to police, nursing etc. just my preferred example, have epistemic responsibility to contribute to democratic political discourse and processes.

With reference to theories of social professions and democratic theory, it will be argued that its contribution cannot consist in providing explanations of social processes that cause problems and suffering as experts. Instead their genuine responsibility in democratic discourse and processes is to point to experiences of social problems and suffering. I will proceed in three steps:

- (1) The responsibility of social workers consists primarily in caring, securing and protecting individuals in order to enable them to participate as equals in democratic discourses and processes. Inferring that this also entitles to epistemic responsibility in political discourse and processes would presuppose that social workers can articulate suffering, problems and interests of needy persons better than they themselves. Presupposing this could yield a new inequality for needy persons in form of dependence on agents of social professions as the ethical critique argues.
- (2) While epistemic responsibility of social workers is challenged by an ethical critique, scientists are challenged by denials of the relevance of their explanations of phenomena, such as economical developments or climate change, in democratic discourse. Reflecting on such struggles about the relevance of scientific predictions and generalizations in democratic discourse shows that epistemic responsibility has two sites: first to present scientific research about social and natural processes and second to motivate its relevance. Given this differentiation, social workers may take epistemic responsibility by pointing to peoples' experienced problems and suffering, which is not speaking for them, but as admonished by ethical critique taking their experiences seriously.
- (3) Epistemic responsibility exercised by social workers in form of pointing to social problems and suffering proofs itself to be important for deliberative democracy ascribing the right to justification to every person: (i) Developing an understanding of the relevance of scientific research is part of the process of justification as demanding and giving reasons. (ii) Supporting needy persons to articulate their problems and suffering can lead to develop an understanding of the relevance of research and expertise providing explanations and remedies.