



# Epistemic neighbors: trespassing and the range of expert authority

Jamie Carlin Watson<sup>1</sup>

Received: 8 July 2021 / Accepted: 21 April 2022 / Published online: 26 September 2022  
© The Author(s), under exclusive licence to Springer Nature B.V. 2022

## Abstract

The world is abuzz with experts who can help us in domains where we understand too little to help ourselves. But sometimes experts in one domain carry their privileged status into domains outside their specialization, where they give advice or otherwise presume to speak authoritatively. Ballantyne (in: *Knowing our limits*. Oxford University Press, New York, 2019) calls these boundary crossings “epistemic trespassing” and argues that they often violate epistemic norms. In the few cases where traveling in other domains is permissible, Ballantyne suggests there should be regulative checks (“easements”) for the experts who are crossing domain boundaries. I argue that boundary crossing is warranted more often than Ballantyne allows. And while Ballantyne argues that boundary crossing is *prima facie* epistemically problematic, I contend that many cases of boundary crossing are not properly instances of “trespassing,” and, therefore, raise no *prima facie* epistemic concerns. I further argue that identifying cases of what I call “epistemic neighborliness” bolsters Ballantyne’s project, making it easier for novices and other experts to identify epistemic trespassing along with its epistemic problems.

**Keywords** Expertise · Epistemic trespassing · Authority · Trust · Disagreement

## 1 Introduction

The world is abuzz with experts—real experts—who can help us in the many domains where we understand too little to help ourselves. When we need legal advice, we turn to attorneys; when we need tax advice, we turn to accountants, and so on. But sometimes experts in one domain carry their privileged status as experts into other lanes, that is, into domains outside of their specialization, where they give advice

---

✉ Jamie Carlin Watson  
jamie.c.watson@gmail.com

<sup>1</sup> Cleveland Clinic, University of Arkansas for Medical Sciences, 9500 Euclid Ave., Cleveland, OH 44195, USA

or otherwise presume to speak authoritatively. Nathan Ballantyne (2019) calls these extensions “epistemic trespassing” and argues that they are usually, though not always, epistemically bad—that is, forming beliefs (and, by extension, speaking) about claims outside one’s domain of specialization violates epistemic norms. In the few cases where it is permissible, he contends, there should be regulative checks (“easements”) on the experts who are crossing domain boundaries. I argue that boundary crossing is warranted more often than Ballantyne allows. And while Ballantyne argues that boundary crossing is *prima facie* epistemically problematic, I contend that many cases of boundary crossing are not properly instances of “trespassing,” and, therefore, raise no *prima facie* epistemic concerns. I further argue that identifying cases of what I call “epistemic neighborliness” bolsters Ballantyne’s project, making it easier for novices and even other experts in the same domain to identify epistemic trespassing and its epistemic problems.

## 2 The perils of epistemic trespassing

A significant challenge for novices is how to identify experts, a challenge known as the “recognition problem” for expertise.<sup>1</sup> The rough idea is that experts’ competence in their domain is so much more superior than any novice’s that a novice could not adequately evaluate whether a putative expert is really an expert or just a cleverly disguised imposter. And if the novice were to study enough to be able to distinguish experts from imposters, they would become experts themselves, and would, therefore, no longer be novices, leaving the recognition problem unsolved.

But even if there were a way to resolve the recognition problem (and I think, in many cases, there is—see Watson, 2021b), novices would still face a range of common obstacles to trusting those experts. Real experts are not immune to the influence of personal ideology. They often frame problems in terms of political interests that can distort their testimony or advice. Experts are prone to disagreement, even about issues fundamental to their domain. And some experts are bad actors, dealing fraudulently with experimental data or giving false testimony.<sup>2</sup> In addition to these obstacles, experts also sometimes trade on their expertise in one domain to give the appearance of speaking authoritatively in another. In other words, they epistemically trespass, and it is this last obstacle that I will address in this paper.

By “expert,” I mean someone who is highly competent in a domain according to the current standards of competence in that domain and because they have extensive, structured experience or rigorous training in that domain (see Watson, 2021a). If this is right, then expertise is objective because it involves demonstrable competence. It is not merely professionalism (as Koppl, 2018 contends) or a function of social trust (per

---

<sup>1</sup> This is the term used by Evan Selinger (2011, p. 29). The problem is identified at least as early as Plato’s *Gorgias*, and it also known variously as “novice/expert problem” (Goldman, 2001) and “the credentials problem” (Cholbi, 2007; Nguyen, 2018), and it is part of what Collins and Evans call the “problem of extension” (2007, pp. 113–115).

<sup>2</sup> See Watson (2021b), chapters 6 and 7, for a discussion of each of these in the context of identifying and trusting experts.

Barnes & Bloor, 1982), both of which can be acquired without competence.<sup>3</sup> It does, however, have a robustly social dimension; it determines “expert-level” according to the current state of practice in a domain (e.g., Olympic-level performance is determined by the most recent performance of other Olympians). By their own practice, other experts set the bar for acceptable performance, and they are usually responsible for identifying when others have passed that bar. Further, expert competence in any domain has both cognitive and performative dimensions. This means that expertise is not merely a matter of having extensive knowledge and being able to use it (as Goldman, 2001 suggests for certain types of expertise), and it is not merely the ability to perform well (as Dreyfus & Dreyfus, 1986 suggest). In practice and advice-giving, expertise requires competence in both cognitive and performative aspects of a domain. As we will see in Sect. 2, Ballantyne’s conception of expertise is sufficiently similar to mine that it should not affect my arguments.

Ballantyne describes epistemic trespassing as when “[e]xperts drift over a highly-visible boundary line and into a domain where they lack either the relevant evidence or the skills to interpret the evidence well. But they keep talking nonetheless” (2019, p. 197).<sup>4</sup> Examples include Neil DeGrasse Tyson, who trades on his expertise in physics to speak authoritatively about philosophy and religion, and Linus Pauling, a Nobel-Prize-winning chemist who traded on his expertise to advocate against atomic weapons and to promote vitamin C as a cure for cancer and the common cold (Ballantyne, 2019, pp. 195–96).

Epistemic trespassing presents a problem because of the combination of epistemic conditions it creates. First, either experts do not realize they have trespassed, or they employ defenses for their trespassing that Ballantyne shows are, at best, weak (207–216). Therefore, regardless of the strength of an expert’s justification for claims or advice in their own domain, their claims or advice in the trespassed domain are weak or unjustified. Second, given that novices are in no position to evaluate an expert’s reasons for their testimony or advice, novices’ trust is grounded in the expert’s authority based on their accurate identification of the expert as an expert. All things considered, this trust is well-placed as long as the expert’s testimony or advice falls within the scope of their authority. But since the novice is vulnerable to the expert’s epistemic advantage, they may not be able tell whether an expert has trespassed.

By itself, the first condition has epistemic consequences for both the expert and the novice—experts risk cultivating unwarranted confidence in irresponsibly formed beliefs, and novices who trust those experts in good faith are misled by unjustified claims or advice. But when combined with the second condition, the epistemic situation is especially noxious for the novice. When an expert misleads a novice in one domain

---

<sup>3</sup> While being a member of a profession is often taken as evidence of expertise, not all professional credentials indicate expertise. For example, some credentialing processes (e.g., real estate, health care ethics consultation) test applicants’ knowledge base but not one’s ability to practice or give advice in a domain. Similarly, some certifications are poor indicators of competence in new contexts. A licensed clinical social worker may be exceptionally competent in one hospital system but practically a novice if they move to a different system. And finally, not all experts are professionals, as one can be an expert painter, novelist, or medical patient without being a member of a profession or professional organization (on expert patients, see Watson, 2021a and Forthcoming).

<sup>4</sup> Ballantyne’s original presentation of epistemic trespassing is in *Mind*, 128(510): 367–395, 2019. Here I use what he calls the “slightly brushed-up version” from his book, *Knowing our limits* (Oxford, 2019).

by trading on their expertise in another, the novice's trust of someone they justifiably believe to stand in a better epistemic position than they do (in the expert's true domain) is surreptitiously distorted, undermining their ability form justified beliefs (in the trespassed domain). The possibility of successful epistemic trespassing raises concerns about the epistemic benefits of appealing to experts in general. Thus, if novices are to be able to make beneficial use of expertise to improve their own epistemic positions, they need a way to recognize, not just whether someone is an expert, but when an expert is properly in their lane.

It is important to reiterate that the trespassing concern arises when genuine experts in one domain attempting to speak authoritatively in another domain, where they are not an expert. It is not about cases where any claim to expertise would be controversial. For example, a political pundit, such as Ben Shapiro, presumes expertise in political matters, and also comments freely on science, public health, and issues related to social justice. Since Shapiro's education is in political science and law, it might seem that he is trespassing in the latter domains. However, he is not recognized as highly competent in any domain, and therefore, has no identifiable expertise to trade on. The fact that he is *regarded as* authoritative by swaths of conservatives does not change the fact that he is, in Spinoza, Flores, and Dreyfus's terminology, a "kibitzer," someone who has an opinion about everything but has not committed themselves to the rigors of training and, therefore, has "no expertise" (1997, p. 87).<sup>5</sup>

Further, epistemic trespassing—at least in its most concerning instances—is slightly narrower than just any cases where genuine experts in one domain presume to speak authoritatively in another. Presumably, your uncle or cousin, or someone else you are quite sure has no expertise in politics, attempts to speak authoritatively on politics on a domain outside of politics. And it's not unreasonable to imagine that this person has expertise in a domain outside of politics. Maybe they are an engineer or a physician. But I agree with Joshua DiPaolo (2021, pp. 16–17) that we typically do not consider these cases cause for epistemic alarm. Though these folks have no authority to speak about politics, or any other domain in which they aren't an expert, we ignore them because they are not attempting to *trade* on their expertise in their own domains to convince us to take their views on politics seriously. Such a strategy likely would not work for those of us who know them well.

DiPaolo also points out that Ballantyne's project is focused on the expert doing the trespassing rather than how experts should navigate boundary domains in the first place: (2021, p. 5). And like DiPaolo, I set aside questions about experts' beliefs about their own trespassing to focus on epistemic justification for boundary crossing.<sup>6</sup>

Yet, even on this narrowed conception of trespassing, interesting cases arise. Imagine a family physician who regularly tells his patients that there is no evidence that vaccines cause autism. Family physicians are not experts in virology, epidemiology, or public health. There is no reason to think that a family doctor's credentials or

<sup>5</sup> The full passage from Spinoza, Flores, and Dreyfus. is: "chess kibitzers, who have an opinion on every move, and an array of principles to invoke, but who have not committed themselves to the stress and risks of tournament chess and so have no expertise" (1997, p. 87).

<sup>6</sup> I also accept DiPaolo's conclusion that Ballantyne cannot sufficiently explain the epistemic problems with trespassing solely by appeal to higher-order defeat (2021, pp. 6–8), but that is not relevant to my argument here.

experience are sufficient for commenting authoritatively on the safety of vaccines. Many professionals could read the published articles on vaccine safety, but that would not mean they can speak expertly on the matter. Nevertheless, if anyone should be regarded as legitimately appealing to their expertise as authoritative for communicating health information regarding vaccines to the patients, it's family physicians. Can such a physician put his patients at ease without epistemic trespassing in the process? I think the answer is yes, and I will show how in Sects. 4 and 5. For now, the family physician case serves as a case in need of explanation by a robust account of boundary crossing. It also raises one final caveat regarding the nature of epistemic trespassing.

Ballantyne says trespassing occurs when boundaries between domains are “highly visible.” He doesn't say precisely what this means, but I am not sure much hangs on it for his case. We can imagine a number of weakly visible or blurry boundaries where trespassing might still occur. For example, we can imagine a business executive who writes a book on the ethics of living well without any background in the history of philosophy, or an internal medicine doctor who becomes a strong advocate for a piece of public health regulation without any background in public health, public policy, or economics. For my purposes, I will make explicit that epistemic trespassing occurs not only when domain boundaries are highly visible, but when they are sharply enough defined that an expert has a responsibility to recognize them in the exercise of their own expertise, and Ballantyne's account seems sufficiently able to accommodate this. For example, as a clinical ethicist who consults in two hospitals, I have to carefully distinguish my recommendations from medical advice and legal advice—those are outside the scope of my expertise, though my recommendations are both informed by medicine and law and have medical and legal implications. Experts have an epistemic responsibility to understand their scope of practice and its limits, especially as it implicates closely related domains. This goes for the family physician in their conversation about vaccines, as well.

### 3 Traveling in foreign domains

Ballantyne acknowledges that there are cases where boundary crossing is epistemically acceptable. He calls domains “fields” and explains that they are “fixed by a set of questions or topics” (198), and while domain boundaries can be “blurry,” expertise is “a status of thinkers [that is] relative to a particular field at a time” (199). This “status” includes having “enough relevant evidence to answer reliably their field's questions” and “enough relevant skills to evaluate or interpret the field's evidence well” (199).<sup>7</sup> I will take it that a domain's boundary has been crossed when an expert in one domain presumes either (i) to state authoritatively a claim in another domain as if they were an expert in that domain or (ii) to answer questions or solve problems in another domain.

In some cases, domains “overlap or converge,” which means they either share questions that can be evaluated from different domains (e.g., discussions of rationality from philosophers, psychologists, and economists) or they share projects that couldn't

<sup>7</sup> For another account that treats expertise as a matter of justification that is a function of amount and relevancy of evidence and ability to interpret that evidence, see Watson (2018).

be completed without input from a diversity of domains (e.g., explaining biodiversity, which requires input from cell biologists, molecular biologists, geophysicists, paleontologists, and many others). Ballantyne calls these combinations “*hybridized questions*—ones addressed and answered by combining evidence and techniques from two or more fields” (200, italics his).

However, while experts may, according to Ballantyne, justifiably speak authoritatively on hybridized questions, there are still epistemic risks. Hybridized questions are not always clearly defined, even among the relevant experts, so Ballantyne contends that we should treat all boundary crossing as *prima facie* suspicious. “[I]nvestigators who address hybridized questions will often lack expertise in one or more of the relevant fields” (202). He believes that instances where an expert in one domain of a hybridized question does take the time to gain the relevant expertise in others are rare, and he hypothesizes that “academic deans and grant agencies often incentivize trespassing by funding interdisciplinary research” (202). Ballantyne’s advice? “[T]respassers should recognize that they have violated some epistemic norm and reduce their confidence in their judgment on hybridized questions” (215).

Interestingly, Ballantyne acknowledges that trespassing is probably necessary in order to “answer most important questions” (217). He explains:

Imagine your colleague is a representative source of evidence, skills, and potential criticism from another field, and also that you can recognize your colleague’s expertise. Even if you don’t have direct knowledge of that field, if your colleague tests out your answer to a hybridized question and tells you it sounds right to her, then your view is apparently more reasonable than it would have been otherwise (217–218).

In these cases, Ballantyne explains, trespassers have an “easement” or “right of way,” established through trust in an expert from the other domain. In legal terms, an easement is right granted to strangers to use someone’s land for a specific purpose. In restricted neighborhoods, a clause in the homeowners’ association typically grants the association to build sidewalks along the edge of homeowners’ property and grants other neighbors the right to use this sidewalk. In Scotland, legal protections exist for hikers to cross almost anyone’s land so long as they do not cause damage. In Ballantyne’s use, partnering with experts from other domains helps the expert from another domain ensure that they do not commit epistemic wrongs while trespassing.

I think this is right as far as it goes. My concern is that Ballantyne still characterizes such instances as *trespassing*, that is, as *prima facie* epistemically problematic. But if the sort of boundary crossing that he describes *justifies* the expert with respect to claims in other domains, there must be a description of that relationship that accounts for the justification.

Part of the problem, it seems to me, has to do with how he characterizes domains. Ballantyne seems to presume that expert domains are isolated, largely autonomous entities. This is an assumption about the structure of epistemic communities, namely, how one epistemic community distinguishes itself from another. Even when the border between domains is “blurry,” the distinctions are, nevertheless, “fixed by an extremely narrow set of questions” (198–199). I aim to show that this oversimplifies many of

the expert domains we regularly encounter. Without this nuance, we end up with an unjustifiably antagonistic epistemic environment.

Think about the Western film genre, scenes where a stranger rides onto someone's property. Both the stranger and the property owner carry guns, and these are displayed prominently during the encounter. The presumption is that the stranger is a threat until they prove otherwise, as is often conveyed in the greeting by the property owner: "State your business," or "Who are you, and what do you want?" If our epistemic communities are structured like the Wild West, then we give priority to a domain's boundaries (presumably for the sake of preserving authority in that domain), and the burden is on the stranger to justify crossing that boundary. On this way of viewing epistemic communities, it makes sense to treat any boundary crossing as trespassing, that is, as a *prima facie* epistemic problem.

To be sure, domain boundaries matter for assessments of epistemic authority. However, those boundaries are only rough indicators of the competence that underwrites them. And focusing on the boundaries without an explication of the relationships among the domains in question overlooks the ways in which competencies can defy domain boundaries in specific cases and, thereby, the expertise to recognize how epistemic authority can transcend those boundaries.

I submit that communities of expert domains are more complicated than Balantyne conceives them. Consider an example. Both oncology and hematology are domains within the broader domain of medicine. And the relatively recent domain of hematology-oncology overlaps with both hematology and oncology and is also a part of medicine. Consider that when a hematologist and oncologist are both consultants on a patient's case, the hematologist does not view the oncologist with suspicion, or vice versa, despite the fact that they are approaching the patient's condition with very different sets of specialized knowledge and skills. The hematologist could contribute a bit of insight that is pivotal for the oncologist's treatment plan. As long as the hematologist is speaking as a hematologist about blood related matters, nothing epistemically untoward has occurred. No boundary crossing has occurred, and the hematologist has not trespassed.

But consider that the hematologist might be the patient's attending physician whereas the oncologist is just a consultant. In such a case, the hematologist might read the patient's chart, understand the oncologist's advice, yet disagree with it, formulating a different plan of care than what the oncologist recommends. The hematologist is not presuming expertise in oncology, nevertheless, their plan of care has implications for the patient's oncological status. For example, the oncologist may recommend a bone marrow transplant. However, bone marrow transplants require the patient to have adequate nutritional support. But if the patient were to have a condition that prevented their body from absorbing nutrition, or they lacked adequate social access to food, the hematologist might judge that this patient could never qualify for such a transplant. The recommendation would set the patient up for failure. Thus, the hematologist might judge that the oncologist's advice is too narrow to accomplish the patient's overall health goals. Because of this, the hematologist's judgment is a clear instance of boundary crossing. In other words, the hematologist knows enough about medicine in general, oncology specifically, and the patient's overall medical picture to be able to justifiably reject the expert oncologist's advice.

Note that the hematologist need not appeal to any of the defenses of trespassing that Ballantyne considers and rejects (2019, pp. 207–216). The hematologist need not believe that oncology doesn't feature evidence or skills that bears on the current judgment (the no-relevant-evidence defense). They need not believe that evidence from hematology conclusively establishes their expertise relative to the current judgment (the conclusive-evidence defense). And this is not a case of transfer of evidence or skills, where one's expertise as a hematologist successfully confers authority in oncology (the transfer defense)—the distinct domains remain distinct despite sharing some of the same information and skills. What's relevant is that they share a conceptual framework relevant to caring for patients—organ systems, provider-patient dynamics, psycho-social constraints, social determinants of health, etc. The hematologist, as the attending, must make a judgment based on how all these factors work together. The oncologist, as consultant, is concerned only with cancer-related issues. Thus, in rejecting the oncologist's recommendation, the hematologist has crossed a domain boundary yet in a way that is not only not suspicious but is epistemically responsible. The justification for the hematologist's judgment is based on evidence about the patient's whole medical picture, whereas the oncologist's justification is based only on evidence related to basic patient information (age, history of cancer, etc.) and current cancer diagnosis.

This justification is further supported (albeit indirectly) empirically through research on what is known as “team-based” medicine. Contributions from consulting specialists help attending physicians understand the patient's complete medical picture. And when their recommendations conflict, attendings must epistemically trespass to resolve the tension. Evidence suggests that this sort of trespassing improves patient care. Studies have shown that team-based practice reduces medical error by around 20% (Morey et al. 2002; Hughes et al., 2016; Herzberg et al., 2019), reduces mortality by 15% to 50% depending on the type of unit (Hughes et al., 2016; Moorman, 2007), and boosts workplace satisfaction (Moorman, 2007). The same benefits hold for broader, multi-disciplinary care meetings that include social workers, patient advocates, and chaplains.

Some medical centers gather a group of experts from a medical specialty, nutrition, pharmacy, nursing, and social work to round on every patient in a unit once a week. The outsiders don't always have insights into the problems, and sometimes their suggestions are wrong-headed. But because they understand the structure of the problems and the sorts of resources that can be brought to bear in hard cases, there are times these outsiders recognize gaps in primary team's thinking that members of the team have missed; they bring knowledge or skills from their domains to bear directly on the problem at hand. And sometimes they spot opportunities that hadn't been considered, or they reason about the problem in a way that puts the team at ease regarding controversial decisions. Under these conditions, speaking authoritatively in another domain not only builds trust across domains, it solves problems.

The key to success in these cases is not merely that the nutritionist speaks only to nutrition and the social worker speaks only to the patient's discharge needs. That is, of course, the most common type of interaction and does not raise concerns about trespassing—in those cases, everyone stays in their respective lanes. But the key to team-based success also includes the authority of nurses, ethicists, and others to speak



to concerns that implicate other domains in ways that constitute a reason for specialists in those domains to take the domain-crosser seriously.

These kinds of epistemic benefits are found outside of medicine, too. Journalist David Epstein (2019) collected examples of what he calls “outside advantage” cases, which is when experts in one domain are able to solve problems in largely unrelated domains. For example, InnoCentive, a company started by Eli Lilly Pharmaceutical Company, posted 21 problems its chemists couldn’t solve online, for anyone to tackle. One problem was solved by a lawyer, whose specialization was in chemical patents (172–73). Later, a thirty-year-old problem that NASA couldn’t solve was posted on InnoCentive’s website. Within 6 months, a retired engineer from Sprint Nextel submitted the solution. Just over 1/3 of those original problems were solved by outsiders, and the key, argued its founder, was to “frame the challenge so that it attracted a diverse array of solvers. The more likely a challenge was to appeal not just to scientists but also to attorneys and dentists and mechanics, the more likely it was to be solved” (173).

So, if not all epistemic communities are structured like the Wild West, what other metaphors might be helpful for exploring expert boundary crossing? Consider agrarian communities, where farms abut one another in miles-long patchworks. One farmer doesn’t have authority over another’s land and may grow different crops or raise different animals, but if one shows up on another’s land, they are not viewed as suspicious. Rather than greeting one another with skepticism, epistemic neighbors greet one another with an openness to productivity. A neighbor might wonder of a neighbor: What do they know? What can they do? How have people from our respective domains worked together before? What projects could we collaborate on now? Rather than raising epistemic concerns, the presence of an outsider suggests epistemic opportunities.

Call the justified movement of experts from one domain to another via established structures of trust, “epistemic neighborliness.” Rather than valuing domain boundaries for their own sake, epistemic neighbors value boundaries when they are useful and disregard them when they are not. The burden of justifying boundary-crossing is shared, but the presumption is one of welcome rather than suspicion.

The concept of “easement,” that Ballantyne suggests as a means of facilitating justified boundary-crossing, doesn’t adequately describe boundary crossing in the case of agrarian neighbors because such neighbors are often recognized and welcomed in virtue of a certain kind of relationship—it’s not a *carte blanche* provision or exclusion. Farmers don’t need special permission to cross domain boundaries; their familiarity as a neighbor suffices. Their knowledge of farm-related things is respected. We can imagine the various ways that such neighbors help one another, collaborating on shared projects, sharing insights from personal experience, delivering relevant news, such as apprising a neighbor about a pest or a failed crop on part of land seldom visited by the owner. The acknowledged overlap in competence between the owner and the neighbor contributes to grounds for trust in the neighbor’s testimony and advice, just as it does in the case of the hematologist and oncologist’s shared commitment to medicine.

Agrarian farmers are what we might call “country neighbors,” and we can imagine other examples of country neighbors that aren’t limited to the country settings, such as the relationships among physicians, clinical social workers, and a hospital’s legal counsel, and relationships among real estate agents, mortgage brokers, and title

companies. In each case, experts from neighboring domains recognize one another and understand, in general terms, the nature of the others' expertise. They typically restrict their work to their respective domains, but they do venture out, sometimes to collaborate and sometimes to problem-solve. For country neighbors, these ventures are usually intentional and by invitation.

The country neighbor metaphor is useful, but relationships between neighbors can take other forms, as well. We might think of some communities of experts as working together more like people living in apartment buildings; they share space, there are more regulations on interaction and etiquette, and they are all implicated in shared projects, such as fixing broken entryways or maintaining water and heating sources. In this metaphor, experts in some distinct domains are expected to work together across domain boundaries simply in virtue of the types of projects their domain is engaged with. And this despite coming from domains where they know little to nothing about what the other expert does.

Skyscraper construction, for example, involves a multitude of specialized experts from domains like plumbing, electricity, structural engineering, glasswork, and roofing materials (see Gawande, 2009 for a discussion of skyscraper construction in terms of experts' strengths and limitations). These experts work alongside one another, trusting that the others know what they're doing. The electrician wouldn't step inside the building if she were afraid it would topple down on her, even if she weren't sure precisely how a structural engineer does their job. So far so good, since in most of these cases, all the experts operate within the scope of their domain-specific authority.

Nevertheless, when planning or problem-solving, each expert can speak authoritatively to aspects of a project in ways that affect whether the other experts are justified in proceeding on their own judgment; in other words, they may have to cross domain boundaries in order to do their jobs. What's possible for an architect might be limited by plumbing options, and what's possible for a plumber might be restricted by the physics of electrical engineering.

What I will call "city neighbors," then, recognize one another by role rather than by demonstrations of competence. Their shared projects are not intentionally chosen, and yet, those projects could not be accomplished without a diversity of experts. As with country neighbors, easement seems the wrong term to describe justified boundary crossing for city neighbors. When building a skyscraper, airplane, or battleship, experts from different domains don't need external dispensation to call out concerns they recognize in other domains. The project wouldn't happen without them, and many errors are avoided by their vigilance (see Gawande, 2009 for examples of how the freedom to call out concerns outside their domains reduces medical error).

Stephen Turner's (2014) description of how scientific projects are accomplished captures what I mean by city neighbors. "Crudely," he says, "there are scientists in adjacent areas of science who know enough to judge the work of the specialist, and this enforces consistency in the application of professional standards" (248). Sociologist Harry Collins (2014) describes this using the example of gravitational-wave detection. There are about a thousand physicists working in that narrow specialty, and most belong to an even narrower sub-specialty. "[N]o person from one subgroup could step in and do the work of a person from another sub-group—at least not without a long

apprenticeship. If that were not so, they would not be specialists. And yet all these people coordinate their work” (2014, p. 71).

This is not just a practical matter, but one grounded in each expert’s competence in their domain, in particular, as that competence relates to the complexity of expert domains required to complete the project at hand—it is “epistemic and localized” (Turner, 2014, p. 248). And it is the structure of the epistemic community that explains why this collaboration is not trespassing: “These relations of adjacency produce a network, which is the point at which we can interpret this as a collective heuristic” (249). And while Turner admits that collective heuristics “are not epistemic guarantors of truth” (249), their epistemic benefits have empirical support, as we saw with team-based medicine and Epstein’s outsider cases. When psychologist Philip Tetlock and a team of researchers working with the government group IARPA<sup>8</sup> pitted teams of experts against individual experts when forecasting political and military events, “on average, teams were 23% more accurate than individuals” (Tetlock & Gardner, 2015, p. 201), but those teams were only effective when they were (a) comprised of diverse experts and (b) free to speak up about any concern.

Of course, it is one thing to say that boundary crossing *happens* (in science and elsewhere), another to say it is *useful* in some conditions (as in Epstein’s outsider cases and Tetlock’s IARPA teams), and still another to say it is *epistemically justified*. How might we substantiate the claim that boundary crossing among closely related domains is *prima facie* justified?

#### 4 Structures of trust: “like a good neighbor”

I start from the assumption that competence in a domain falls along a continuum that can be represented graphically, where complete novices at one end lack specialized knowledge and skill in a domain, and strong specialized experts at the other end have state-of-the-art specialized knowledge, skill, and experience. From novice to specialized expert, competence increases in terms of experience, knowledge, and skill (see Fig. 1).<sup>9</sup>

Since expertise is widely viewed in terms of competence acquired through a long process of specialized experience or rigorous training—rather than an innate giftedness—I take it that this first assumption is not controversial. If expertise is not acquired this way—or if many types of expertise are not acquired this way—then my argument will not be successful. I take increases and decreases in competence in various domains that derive from training as necessary for explaining complex relationships among related domains (e.g., different medical specialties, collaborative construction projects, etc.).

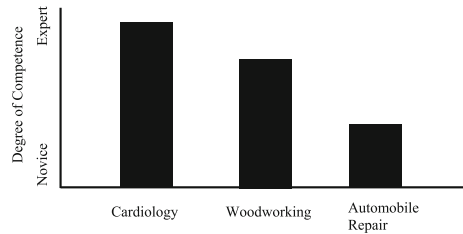
<sup>8</sup> IARPA: The Intelligence Advanced Research Projects Activity, an organization founded in 2006 to solve intelligence-related challenges through innovative research. <https://www.iarpa.gov/>.

<sup>9</sup> To be sure, this is an oversimplification. Expertise involves a complex combination of information, skill, and experience and, therefore, does not fall along a single axis. For the sake of readable representation, I am treating the combination of all the elements necessary for expertise in a domain as the singular “competence,” and all of the following graphs are intended to represent the strength of that competence.



**Fig. 1** The continuum of epistemic authority

**Fig. 2** Relative competence in multiple domains



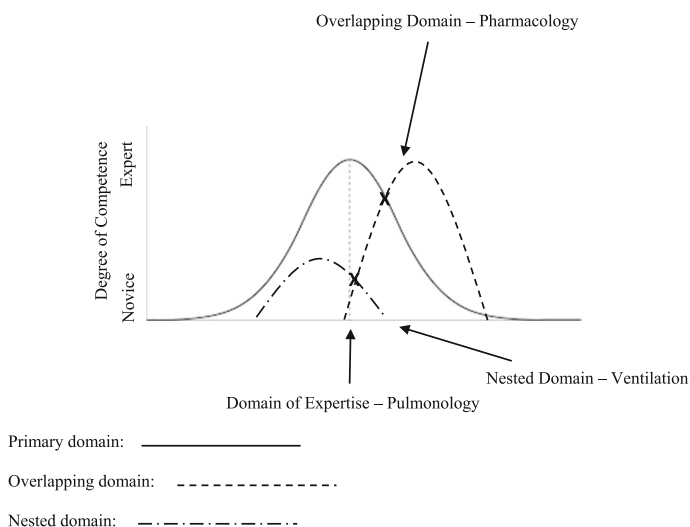
A second assumption is that novices and experts in one domain are often more or less competent in a variety of other domains, and some are experts in multiple domains. This is, admittedly, an empirical matter, but one I feel safe stipulating for the sake of this article. Many people are competent to varying degrees in a diversity of domains, from the ones they were trained in (researcher, doctor, accountant, etc.) to those they pursue as hobbies (sailing, woodworking, painting, etc.) to those pursued of practical necessity (being a caregiver for an ill loved one, managing budgets for work projects, fishing for food, etc.) (see Fig. 3).

In Fig. 2, we see someone who is a highly competent cardiologist, but who also has substantial skill as a woodworker and modest skill at auto repair. By itself, this may not be illuminating, but combined with the next point, namely, that each of those domains is related to others in complicated ways, we find some important implications for boundary crossing.

My third and final assumption is that expert domains are not isolated: Some expert domains *overlap* with other domains, and some are *nested* inside other domains. For example, mathematics and physics overlap [they are “linked,” in Thi Nguyen’s terminology (2018, p. 5)]. Parts of physics do not involve mathematics, and one can do math without being a physicist. On the other hand, ventilation is nested in the broader domain of pulmonology (See Fig. 3).

In Fig. 3, we can see that, while pulmonology and pharmacology are distinct domains, they share a great degree of skill, evidence, and information, since both domains require extensive knowledge of drug indications and interactions. And while ventilation overlaps with pharmacology (pharmacists learn about ventilation as part of their training), ventilation is wholly nested within the pulmonologist’s domain. If we accept these assumptions, I think there’s a justification for expert boundary crossing that applies to a wide variety of cases that Ballantyne would have us regard as epistemically suspicious.

The recognition problem for expertise is usually framed in terms of the extreme ends of the competence continuum in a domain: An absolute novice in cosmological physics would have a devil of a time making sense of what an expert cosmologist has



**Fig. 3** Overlapping and nested domains

to say on cosmology, so there’s little she could do to suss out the physicist’s reliability. Similarly, a first-time home buyer often has trouble making sense of the details of the mortgage process. But imagine that you have been a real estate agent for a number of years, and you have spent time with new home buyers and mortgage lenders as they work through the process. And imagine you have gotten to know several mortgage brokers fairly well and have come to find their advice on complex matters related to financing helpful, both to you and your clients.

The epistemic point is that your competence in real estate gives you an epistemic advantage over novices in the domain of mortgage brokerage. To be sure, there are professional and legal structures in place to help keep the mortgage lender from committing fraud or some other deceptive act—“bonding” structures, as Steven Turner calls them (2014, pp. 186–190). But more than that, your education in real estate involved learning about the mortgage process. Further, you’ve seen the process in practice along with many of the ways it can go well or poorly. In these ways, the domain of real estate overlaps with the domain of mortgage lending in a way that goes some way toward justifying your claims about the mortgage process. You are not as authoritative as the mortgage lender—you aren’t as far up the continuum in that domain. But you are much farther along than most home buyers. The domains overlap, such that competence in one confers some degree of competence in the other. These are not cases of boundary crossing; they simply illuminate how differing degrees of expertise helps distribute epistemic authority from specialists to novices.

Further, the degree of competence conferred by training in one’s specialty domain need not always be lesser in degree than that required to perform that skill in an overlapping domain. For example, an expert neurosurgeon can correct the calculation of a resident in palliative care regarding how to dose pain medication. The overlap in the domains confers authority on both with regard to questions about pain medication,

and the neurosurgeon’s experience suggests a higher degree of competence with such questions than the entry-level palliative care physician’s.

What does this mean for your authority as a real estate agent when you do cross certain domains, for example, when challenging a claim in the domain of mortgage brokering? If you were to claim that there was a mistake in the mortgage documents, it would be epistemically inappropriate for the mortgage lender to dismiss your concern out of hand. Mistakes happen, and they should acknowledge that you may understand enough to recognize them. It would not be epistemic trespassing for you to raise the concern, though it would be boundary crossing. And it is the overlapping structure of information and skill in these domains that justifies the movement across boundary lines. You’re a country neighbor to your mortgage broker colleague.

In practice, all this seems relatively uncontroversial. What has been lacking in the literature is an explanation of how boundary crossing is justified in those cases where it is. But, with some basic assumptions about expertise in hand—that it falls along a continuum, that one has increasing epistemic authority the farther along that continuum you stand, and that domains are related in complex ways—then we can formulate that explanation. In cases where domains overlap or one is nested inside the other, experts in different domains have authority to speak in those other domains to the degree that their competence in their own domain constitutes competence in the neighboring domain. This is, of course, consistent with Ballantyne’s view, but making it explicit here helps explain justified cases of boundary crossing where the competence needed for understanding the claim’s relevance for a belief is not highly specialized.

Consider a pharmacological claim, P, and two versions of Fig. 2 (See Fig. 4). In the figure on the left, P is pharmacological but within the scope of the pulmonologist’s expertise. No boundary crossing has taken place. So far, so good, and this would not constitute trespassing on Ballantyne’s account. However, in the figure on the right, P is outside the scope of the pulmonologist’s expertise but at a fairly low level of competence for the pharmacist.

If the pulmonologist were to presume to speak authoritatively regarding P, they would certainly be boundary crossing. Would this constitute trespassing? That depends

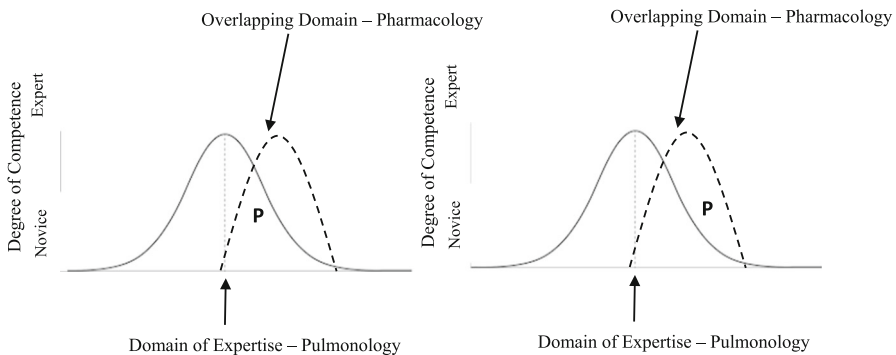


Fig. 4 .

on what P refers to in the scope of patient care and the relationship between the experts in the overlapping domains. Note that the domains overlap to a significant degree (unlike pharmacology and ventilation in Fig. 2). What this indicates is a large number of similarities in the structures of the problems each domain tasks itself with understanding and solving. If the pulmonologist sufficiently understands the structure of pharmacological evidence and information, the pulmonologist might justifiably reply, “That’s not right!” if the pharmacist were to claim not-P. The pharmacist should take the objection seriously. Of course, if the pharmacist persists in maintaining not-P for reasons grounded in their specialized expertise, they could also communicate this to the pulmonologist, who, in virtue of their understanding of pharmacology, has good reasons to trust the pharmacist.

An important difference between epistemic neighbors and those who cross domains under easements is that neighbors know enough about a domain to call “Bullshit!” when an expert is prevaricating. An interior designer who works with both clients and contractors knows enough about what contractors do such that, if a contractor tells a client something cannot be done, the designer can advise the client as to whether they’re being lied to.<sup>10</sup>

Of course, Ballantyne’s concern is a serious one. In cases where trespassing (not merely boundary crossing) does happen, the epistemic consequences are dire, both for novices and for social trust in experts. So, where do things go wrong? If the nature of expertise and the structure of domains explains justified boundary crossing, then boundary crossing that defies those structures is epistemically concerning. Imagine a hospital attorney who has been asked by a physician to weigh-in on a safety concern about a patient. The structure of this relationship dictates that the attorney can speak to all and any issues that fall within the overlap between their domains, even if that includes medical information. For example, the attorney may be able to speak authoritatively about death by neurologic criteria because these criteria are part of national standards and included in hospital policies which health care attorneys help to draft and vet. In this case, the attorney may comment authoritatively on death by neurologic criteria, given that brain death has a technical definition in policy. However, the attorney would be trespassing if she were to comment on medical issues falling outside the scope of that overlap, e.g., ventilator settings, amount of a pain medication, choice of sedative, etc.

“Epistemic neighborliness,” then, is the claim that domains can be nested inside one another or they can overlap, and that epistemic authority is better analyzed as a function of the degree of overlap and nature of the shared epistemic project than by whether experts stay within their respective boundaries. If one domain is nested in another, then, consistent with Ballantyne’s view, experts share skills and knowledge relevant for solving problems at least within the smaller of the domains. If domains overlap, then epistemic authority will be determined by the extent to which those domains overlap on the relevant problem. Problems of the “country” sort are different from problems of the “city” sort, but problem-solving on shared projects will require extensive, justified boundary crossing in both cases.

---

<sup>10</sup> Thanks to Gabriele Contessa (whose wife is an interior designer) for this example.

If I am right that expert domains are structured more like country and city neighbors than the Wild West, then boundary crossing *qua* boundary crossing is much less concerning than Ballantyne suggests. To be sure, the weaker the relationship between domains, the more concerns we should have. In fact, I think Ballantyne's conception of easements is especially appropriate in Epstein's outsider cases. There, experts from weakly related fields are offering suggestions from afar; they have little on-the-ground engagement with the project or those invested in it, and so crowd-sourcing management organizations like InnoCentive provide the necessary easement structure to facilitate that communication. Nevertheless, outsider cases are interesting precisely because they are not how experts typically coordinate their competencies to complete projects. My hypothesis is that epistemic neighborliness is the norm rather than the exception for cases of boundary crossing. Regardless, the relevant question for the novice is not whether an expert has crossed into another domain, but whether the condition under which the crossing took place justify the crossing. This leads to my final question: How does epistemic neighborliness help novices know when to trust experts?

## 5 Organizing councils of trust

Consider the case of Andrew Wakefield and his fraudulent 1998 publication linking the MMR vaccine to autism (Wakefield et al., 1998). Imagine you are a novice in 1999, and you have just heard about this paper; you are not an immunologist, physician, or researcher. You are considering whether to continue believing that vaccines are safe in light of this evidence. How might you appeal to experts to assess Wakefield's conclusion?

If you turned to an expert medical researcher, even one whose research is not in immunology, they might have pointed out that, while the results are interesting, this is only one study. And while single studies make headlines, the scientific community usually waits on further studies before vesting full confidence in a conclusion, a phenomenon we see often when it comes to studies touting the benefits of drinking a glass of red wine before bed, the effects of baby aspirin on people vulnerable to heart attacks, and even how much water to drink while running competitively (see, for example, Hutchinson, 2018, ch. 9). Therefore, you could have concluded that the connection Wakefield draws between the MMR and autism is at least weak and needs further support.

If you also reached out to an immunologist, they might have pointed out two things. First, Wakefield was not opposed to vaccines. He was in favor of *individual* measles, mumps, and rubella vaccines. He was arguing that the *combined* MMR vaccine had a contributing effect to autism. Thus, even if Wakefield's findings turned out to be credible, they would not have challenged the safety of vaccines generally. And second, the immunologist might have pointed out that Wakefield was also not an immunologist or pediatrician, that is, he was not an expert on the mechanisms or effects of vaccines. His credentials are as a gastroenterologist. To be sure, the domain of gastroenterology likely overlaps to some degree with immunology. But Wakefield did more than simply challenge an immunological claim that implicated his own expertise in the context of a shared project with immunologists. He *traded on* his expertise as a physician to speak



authoritatively *as* a researching immunologist. Wakefield unequivocally epistemically trespassed. In appealing to several experts in overlapping fields, you've organized a "council of trust." Even as a novice in immunology, you could have allayed your own fears regarding Wakefield's conclusion long before his paper was retracted in 2010 and long before an investigation revealed financial conflicts of interest (Rao & Andrade, 2011).

What about our family physician who wants to tell her patients that vaccines are safe? Can she do this without epistemic trespassing? I think the answer is yes. Her epistemic community includes the closely related domains of immunology, epidemiology, and public health. Her competence in medicine presumably confers on her the skills to read and understand the research findings on vaccines not just from those researchers, but from those who have statistical and demographic information on the impact of vaccines in communities. The family physician knows enough to know whom to trust regarding vaccinations. Given that the vast majority of members of the family physician's council attest to the safety of vaccines, the physician can authoritatively convey this information to her patients.

## 6 What is an epistemic council of trust?

What does an epistemic council of trust look like? The key features come partly from the definition of expertise and partly from the empirically supported benefits of boundary crossing, like those we find in Philip Tetlock's research (Tetlock & Gardner, 2015) and those we saw in Epstein's outsider cases (2019).

First, council members must be from diverse domains. Experts from the same domain can have a distorting effect on expert authority in numerous ways. They agree on how problems and solutions should be framed to outsiders, and these framings can be motivated by political interests, by a desire to promote a particular conceptual view (as in the case of the "new atheists" who were responding to pressures from organized religion on the issue of evolution, Ruse, 2009), or simply because the shared work presumes certain values [see how the case of Jhai McMath challenged expert consensus on the concept of death by neurologic criteria (Joralemon, 2016, pp. 67–74)]. Since consensus can distort expert authority, experts often engage with those outside their domains to spark progress. Tetlock found that, "Combining uniform perspectives only produces more of the same, while slight variation will produce slight improvement" (Tetlock & Gardner, 2015, p. 209). Thus, to assess whether that sort of boundary crossing is justified, the novice also needs perspectives from closely related domains.

Second, council members must be free to disagree. In explaining how his "superteams" did so well in competition, Tetlock says they fostered "minicultures" to combat groupthink, encouraging people to "challenge each other respectfully, admit ignorance, and request help" (207). In my work as an ethics consultant, we sometimes have to request that a second, independent physician review the plan of care for a patient in light of certain concerns about risk and harm. Too often, the second physician trusts the authority structure and defaults to giving the primary physician a pass: "I trust my colleague. I know they are a good doctor. I wouldn't contradict their plan of care." While this demonstrates professional courtesy and respect for the primary

physician's expertise, it undermines the epistemic and moral benefit of the independent review. The goal is to provide a check on the primary physician's judgment on this issue (not their expertise in general!) regarding one patient's care for the purpose of protecting the patient against physician overreach, medical paternalism, and other oversights common in medical practice. Thus, if a council is unwilling to disagree or press one another to give stronger reasons or more robust explanations, it will not be able to play its regulative role in helping novices identify trespassing.

Third, council members must be from neighboring, or "linked" domains (Nguyen, 2018, p. 5). The number of problems that are *not* solved by InnoCentive's crowdsourcing method (around two-thirds) forewarns caution when listening to experts from domains that are too far removed from the target domain. In such cases, InnoCentive's mechanism of request and review serves as a sort of easement, along the lines that Balantyne proposes. Non-experts submit suggestions that are reviewed by experts, and those experts decide whether to condone the boundary crossing, but only on the quality of the proposed solution, not on the non-expert's authority (presumably, they have little or no authority in that domain). Domains are neighbors, or linked, if expertise in one confers a sufficient degree of authority in another. If multiple domains overlap at different points, an expert in one domain may be able to productively engage with experts two or three domains away. Nguyen explains:

[S]ome fields are interwoven with other fields; thus, we may be able link up subtle fields with more obvious ones. For example, nuclear engineers rely on the results of particle physics, and nuclear engineering has some rather dramatic tests, whose failures are available to the inexpert. The evidence of functioning nuclear reactors and nuclear bombs leads me to trust nuclear engineers, and the nuclear engineers trust and depend on the work of the particle physicists. So, though I can't make any direct judgments about the reliability of particle physics for myself, I can connect it up to another field which I have some capacity to assess. (2018, p. 5)

This criterion follows from my three assumptions about expertise—the weaker you are placed in a domain, the weaker your authority to speak in that domain. But to the extent that you are well placed in a domain that is linked to another domain, you can use information in the neighboring domain to assess expertise or contribute productively across domain boundaries.

Thus, the closer to the target domain the boundary-crossing expert is, the more likely they have authority to address at least some of the questions and problems in the target domain. The degree to which a domain is related to another is a *prima facie* proxy for degree of expert authority in that domain.

## 7 Limitations on councils of trust

While helpful for identifying instances of trespassing, epistemic councils are not immune from all the problems associated with identifying and trusting experts. If, for example, an expert domain is on what Thi Nguyen (2018) calls a “cognitive island,” it will be difficult to form a functioning council. On Nguyen’s account, some expert domains have outcomes that are “obvious” to novices (they produce some result whose successfulness is assessable by the novice, such as the accuracy of an axe thrower). Some domains are linked in ways that I have described as epistemic neighbors in this paper. Some domains are both obvious and linked, but some are neither. Those that are neither obvious nor linked (that is, those that are “subtle” and “isolated” in Nguyen’s terms) sit far from the novice’s mainland on “cognitive islands.”

One example of a domain that is a plausible candidate for being on a cognitive island (at least for most of us) is topology in mathematics. While the general idea of topology is straightforward—the study of the properties of a geometric shape as it undergoes deformations—the mathematics involved is so complex that few experts in mathematics understand it well enough to teach it to novices. Unlike calculus or algebra, topology is a narrow specialty in mathematics, and as such, is weakly linked to other mathematical domains. Given that there are few domains of expertise related to topology to a strong degree, it would be difficult to formulate a council of trust sufficiently strong to determine whether a topologist has trespassed.

A second limitation on councils is motivation on the part of the novice. On some politically or emotionally charged issues, motivated reasoning leads us to cherry-pick experts based on our own interests, values, and biases. And even if we are vigilant enough to want to form a council of trust to help us form responsible beliefs, we may still fall prey to choosing members whose biases trend toward our own. For example, if we hold a partisan position on a topic in religious studies—for example, the historic Jesus—and we want to assess the merits of an expert on that issue, it is easy to find council members from variety of related domains—history, textual studies, biblical studies, classics, ancient languages, etc.—who share our preconceived notions about the topic.

This phenomenon is not only possible, it is to be expected. Thi Nguyen (2018) points out that we unavoidably choose experts (or, in this case, our council) based on our own sensibilities of who is sufficiently authoritative in a domain. But, “[i]f that sensibility is deeply flawed, then one will pick fellows, interlocutors, and other purportedly reliable advice-givers in a deeply flawed way. By following seemingly legitimate processes of corroboration and self-checking, one will only amplify one’s flaws” (16–17). Therefore, if we form a diverse council of experts, but we choose only people who share our biases, whether intentionally or because of motivated reasoning, our council will unjustifiably degrade the authority of any expert who doesn’t share our views.

And finally, councils are of little help when the expert domain is addressing novel or time-sensitive problems. In the case of SARS-CoV-2 in 2020, for example, while virologists and epidemiologists were experts on how viruses work, how they are transmitted, and how to mitigate their transmission, the SARS-CoV-2 virus was too new

for there to have been settled expert judgment on its distinctive features: Is it transmitted by air, droplets, or both? How much will mask-wearing help? In what contexts are masks most important? How deadly is the virus? How does it affect people with underlying health issues? Is age a factor in its severity? And yet, decisions had to be made about how to best protect public health. This led to great distrust in experts and political systems as people scrambled to understand the evidence supporting certain legally coercive measures. Yet, if the experts are themselves either unsure or divided regarding the evidence, then no council is likely to help the novice decide which experts have inappropriately crossed a domain.

This is not to say that councils were of no help during the pandemic. There were plenty of physicians and researchers who were trespassing in an egregious way in attempt to undermine the legitimacy of the scientific process. For these extreme cases, it was easy to look to respected epidemiologists, immunologists, respiratory care physicians, and others to understand which experts were defying the structures of their epistemic communities in vicious ways. Other cases were less clear, such as the degree to which governmental agencies need to “lock down” community activities. The point is simply that the epistemic benefits of councils of trust are limited in cases where the need for experts is novel.

I have attempted to illustrate the complexity of expert domains in order to show that boundary crossing among experts is more complicated and less controversial than Ballantyne suggests and to offer a justification for boundary crossing in terms of relationships among domains. Rather than presuming that boundary crossing constitutes epistemic trespassing, that is, that it is *prima-facie* problematic, novices should appeal to their epistemic communities for help determining whether an expert is speaking within the scope of their authority. They can do this by forming a council of trust that links authority from strong, specialized experts to the novice through a diverse group of the expert’s epistemic neighbors. This council’s insights can justify novices in identifying and trusting relevant experts.

## References

- Ballantyne, N. (2019). *Knowing our limits*. Oxford University Press.
- Barnes, B., & Bloor, D. (1982). Relativism, rationalism and the sociology of knowledge. In M. Hollis & S. Lukes (Eds.), *Rationality and relativism* (pp. 21–47). Basil Blackwell: Oxford.
- Cholbi, M. (2007). Moral expertise and the credentials problem. *Ethical Theory and Moral Practice*, 10(4), 323–334.
- Collins, H. (2014). *Are we all scientific experts now?* Polity Press.
- Collins, H., & Evans, R. (2007). *Rethinking expertise*. University of Chicago Press.
- DiPaolo, J. (2021). What’s wrong with epistemic trespassing? *Philosophical Studies*. <https://doi.org/10.1007/s11098-021-01657-6>
- Dreyfus, H. L., & Dreyfus, S. E. (1986). *Mind over machine: The power of human intuition and expertise in the era of the computer*. Free Press.
- Epstein, D. (2019). *Range: Why generalists triumph in a specialized world*. Riverhead Books.
- Gawande, A. (2009). *The checklist manifesto: How to get things right*. New York: Picador.
- Goldman, A. (2001). Experts: Which ones should you trust? *Philosophy and Phenomenological Research*, 63(1), 85–109.
- Herzberg, S., Hansen, M., Schoonover, A., Skarica, B., McNulty, J., Harrod, T., Snowdon, J. M., Lambert, W., & Guise, J.-M. (2019). Association between measured teamwork and medical errors: An observational

- study of prehospital care in the USA. *British Medical Journal Open*, 2019(9), e025314. <https://doi.org/10.1136/bmjopen-2018-025314>
- Hughes, A. M., Gregory, M. E., Joseph, D. L., Sonesh, S. C., Marlow, S. L., Lacerenza, C. N., Benishek, L. E., King, H. B., & Salas, E. (2016). Saving lives: A meta-analysis of team training in healthcare. *Journal of Applied Psychology*. <https://doi.org/10.1037/apl0000120>
- Hutchinson, A. (2018). *Endure: Mind, body, and the curiously elastic limits of human performance*. William Morrow.
- Joralemon, D. (2016). *Mortal dilemmas: The troubled landscape of death in America*. Routledge.
- Koppl, R. (2018). *Expert failure*. Cambridge, UK: Cambridge University Press.
- Moorman, D. W. (2007). Communication, teams, and medical mistakes. *Annals of Surgery*, 245(2), 173–175. <https://doi.org/10.1097/01.sla.0000254060.41574.a2>
- Morey, J. C., Simon, R., Jay, G. D., Wears, R. L., Salisbury, M., Dukes, K. A., & Berns, S. D. (2002). Error reduction and performance improvement in the emergency department through formal teamwork training: Evaluation results of the MedTeams project. *Health Services Research*, 37, 1553–1581. <https://doi.org/10.1111/1475-6773.01104>
- Nguyen, C. T. (2018). Cognitive islands and runaway echo chambers: Problems for epistemic dependence on experts. *Synthese*. <https://doi.org/10.1007/s11229-018-1692-0>
- Rao, T. S., & Andrade, C. (2011). The MMR vaccine and autism: Sensation, refutation, retraction, and fraud. *Indian Journal of Psychiatry*, 53(2), 95–96. <https://doi.org/10.4103/0019-5545.82529>
- Ruse, M. (2009). Why I think the new atheists are a bloody disaster. beliefnet.com. <https://www.beliefnet.com/columnists/scienceandthesacred/2009/08/why-i-think-the-new-atheists-are-a-bloody-disaster.html>
- Selinger, E. (2011). *Expertise: Philosophical reflections*. Automatic Press/VIP.
- Spinosa, C., Flores, F., & Dreyfus, H. L. (1997). *Disclosing new worlds: Entrepreneurship, democratic action, and the cultivation of solidarity*. The MIT Press.
- Tetlock, P. E., & Gardner, D. (2015). *Superforecasting: The art and science of prediction*. Crown Publishers.
- Turner, S. P. (2014). *The Politics of Expertise*. Routledge.
- Wakefield, A. J., Murch, S. H., Anthony, A., Linnell, Casson, D. M., Malik, M., et al. (1998). Ileal lymphoid nodular hyperplasia, non-specific colitis, and pervasive developmental disorder in children [retracted]. *Lancet*, 351, 637–641.
- Watson, J. C. (2023, forthcoming). Patient expertise and medical authority: Epistemic implications for the provider–patient relationship. *Journal of Medicine and Philosophy*.
- Watson, J. C. (2021a). *A history and philosophy of expertise: The nature and limits of authority*. Bloomsbury.
- Watson, J. C. (2021b). *Expertise: A philosophical introduction*. Bloomsbury.
- Watson, J. C. (2018). The shoulders of giants: A case for non-verificationism about expert authority. *Topoi*, 37(1), 39–53.

**Publisher's Note** Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Springer Nature or its licensor holds exclusive rights to this article under a publishing agreement with the author(s) or other rightsholder(s); author self-archiving of the accepted manuscript version of this article is solely governed by the terms of such publishing agreement and applicable law.