Who Exactly is an Expert? On the Problem of Defining and Recognizing Expertise

Pavol Hardoš[1][2]
The Institute of European Studies and International Relations, FSES, Comenius University Bratislava

Who Exactly is an Expert? On the Problem of Defining and Recognizing Expertise. The article tackles the problem of defining and identifying experts. The conceptual analysis of what it means to be an expert relies on existing scholarship in social epistemology and sociology of expertise. It draws a portrait of experts as deeply immersed in specialist habits and practices, whose truth-tracing testimonies, publicity, and standards of inquiry bestow on them a tentative, context-dependent epistemic authority. This definition of expertise is closely connected with the question of their recognition by the lay public, i.e. how experts can (and should) signal their reliability and trustworthiness. The signaling is made possible through the culture of responsibility present in scientific practices along with the institutionalization of certain features of 'epistemic vigilance'.
Sociológia 2018, Vol. 50 (No. 3: 268-288)

***Key words**: Social epistemology; sociology of expertise; scientific expertise; epistemic authority of science*

'I have a degree from Harvard. Whenever I'm wrong, the world makes a little less sense.' – *Frasier*[3]

Introduction

We cannot escape the necessity of relying on experts in various fields. By virtue of living in complex societies with extending divisions of labor, it is unavoidable that specialization plays an increasingly substantial role in our decision-making. It is therefore necessary to consider this growing complexity and our reliance on expert judgment.

The question of who an expert is may seem a simple one, but it is far from trivial. Both its immediate denotations, the definitional and the socio-inquisitive, pose a serious theoretical challenge. The answers to this simple question are varied and dispersed across multiple fields. The existing scholarship is not necessarily contradictory but rather complementary. This article attempts a synthetical reading of the question, offering a conceptual analysis and integrative framework for defining of expertise.

[1] Address: Pavol Hardoš, PhD., The Institute of European Studies and International Relations, Faculty of Social and Economic Sciences, Comenius University, Mlynské luhy 4, 821 05, Bratislava, Slovak Republic. E-mail: E-mail: pavol.hardos@fses.uniba.sk

[2] Acknowledgments: I would like to thank Janos Kis, Andres Moles, Zoltan Miklosi, and Kristína Kállay for their comments on an earlier version of the manuscript. The feedback from two anonymous reviewers improved the clarity of the manuscript and is gratefully acknowledged. All errors are my own.

[3] Frasier TV series, Season 2, Episode 12; 1995.

An analysis of expertise necessarily touches upon themes of the connection of expert knowledge and social power as well as the normative value of expertise, though it should be noted that these are not intended to be the primary focus of the analysis. Instead, the article should be seen as offering a survey of the concept of expertise, putting several traditions in dialogue, combining literatures from social epistemology, sociology of expertise, and social cognition studies. In doing so, the article will turn to the questions of who the experts are, what they can profess to know, and how we can recognize that what they say is worth listening to. This sequence of inquiries will also serve as the article's main structure.

Developing a clearer understanding of expertise is essential especially in the light of its place and influence in modern democratic societies. Most of us might sometimes expect that those with comprehensive knowledge have a relevant say in decision-making process on key matters. At this point, it would do to note a distinction between a social and an epistemic authority. Having social authority means to be positioned within an institutional hierarchy in a way that implies power to command (and a right to be obeyed), whereas an epistemic authority does not imply a direct relation to power. Instead, it merely indicates that some persons possess knowledge which makes it "worth paying extra attention to what they say concerning certain issues", so that in their area of expertise their "words are taken at face value", i.e., their "testimony is authoritative". (Mikalsen 2010) We sometimes grant social authority simply because of one's epistemic authority. We also delegate some authority to specialized bodies precisely because we expect them to be correct and make informed decisions. (Turner 2001; 2003)

However, this article is not primarily interested in the question of the normative import of expertise. The fact that expertise as a concept can also be deployed by would-be technocrats to de-politicize a contentious issue and silence political opposition with claims of extra-ideological objectivity (cf. Ezrahi 1995) is also outside this article's interest. Nor does it deal with counter-claims of the decline of expertise (Nichols 2017), or the surprising lack of efficacy of the 'expert political judgment' (Tetlock 2006) that further complicate the political landscape. The article's goal is much more modest and narrower: to help conceptualize what exactly an 'expert' is and how we can safely assign epistemic authority, i.e. whom should we listen to in a matter important to our decision-making.

Defining experts

The term expert can be traced to Latin *expertus*, the past participle of verb *experiri*: to try, to experience. (Partridge 2006: 1025) The dictionary definition suggests a specialist in a specific field, with particular skills or knowledge. An

expert is expected to be an epistemic authority. The term authority may in turn also seem fraught with difficulty. For Hannah Arendt, authority was a power relying neither on force nor on argument: authority is lost if it has to use force, and at the same time, it implies hierarchy and obedience. Persuasion and argument, on the other hand, imply a relation of equals. (Arendt 1961: 92-93)

Authority for Arendt rested on something outside of human reason and experience; it brooked no disagreement, it invited no rejoinders, it was simply to be obeyed – and since it was engendered by teleological doctrines, their waning with the advent of modernity has meant the weakening of authority as well (along with its pendants, tradition and religion)[4]. Yet we continue to employ the term even without any implications of a teleological hangover clouding our vocabulary. 'More than advice, less than command', is a popular but an ambiguous description of authority but captures the essence of a modern understanding, free of any teleological trappings. An authority is in a relation of superiority to another in a particular area. (Bayles 1987: 288) An expert is an epistemic authority, someone who is superior in a field of knowledge – she knows more about X than others.

But to answer the question who an expert is we need to go further than to reach for a dictionary, one must look at the social practices of obtaining and sharing knowledge. This section will look at how the question of defining an expert is approached by social epistemology and the sociology of expertise and demonstrate relevant definitional overlap between them.

Reliable information seeking is an important part of all human activity. Furthermore, it is conducted in a social environment for which the Cartesian ideal of an independent inquirer individually ascertaining all propositions on her own no longer suffices. Our modern and "deeply collaborative and interactive nature of knowledge seeking" makes it necessary for the individual epistemology to be supplemented with a social counterpart: 'a social epistemology'. (Goldman 1999: 4)

Alvin Goldman emphasizes how paths to knowledge can lead through interactions with other agents, how knowledge spreads within groups of agents, and even how collective and corporate entities such as juries and legislatures can be counted as knowing agents. His proposed 'veritistic' social epistemology studies how social institutions and practices promote knowledge, meaning "true belief". His basic reasoning is that social practices can have both positive and negative impact on the level of knowledge. The normative and evaluative prescription of his approach is that true belief is the one value which

[4] Arendt believed authority to be no longer a sustainable topic of debate since the basis for authority "has vanished from the modern world". (Arendt 1961: 91) This source of authority was "always a force external and superior to its own power; … (this) external force which transcends the political realm" was "made either not by man at all, as in the case of the law of nature or God's Commandments or the Platonic ideas, or at least not by those actually in power". (Arendt 1961: 97)

should be maximized, and institutions are evaluated based on their capability to foster true beliefs or decrease falsehood and ignorance. (Goldman 1999: 5)

Of course, he does not deny that other values have their relevant say when it comes to the appraisal of social institutions. He makes it explicitly clear that he considers veritistic social epistemology as a specialized field of inquiry that can tell us a lot about how institutions and practices impact knowledge, but this impact does not trump other potential values in other spheres. For example, in trail proceedings some information may be barred from the court because of values accorded to due process, even though that information might increase knowledge during the trail. (Goldman 1999: 6)

Goldman's veritism is similar in structure to utilitarianism in that it evaluates states of affairs based on how they promote or hinder one single value. In veritism 'knowledge' occupies the same role as utility or happiness does in utilitarianism – it is the only intrinsic, fundamental epistemic value. Consequently, practices or actions, rules and institutions, have only an instrumental veritistic value "insofar as they promote or impede the acquisition of fundamental veritistic value". (Goldman 1999: 87) This similarity in structure also opens the account to criticism similar to the one raised against utilitarianism[5].

The major objection to be raised is the insistence that there is more than one intrinsic value to be promoted by normative epistemology. For one, true belief, ignorance, and error seem to be slightly different things, and attempts to translate them into a single measurable magnitude run into difficulty, especially when we try to figure out where should ignorance and error be placed on this scale. (Coady 2012: 7) What is epistemically less valuable, error or ignorance? They are clearly not the same and probably should not be both accorded with a value of zero – but then which is worth more? Further complications can stem from the value of relevance, or how interesting the knowledge in question is[6]. Goldman acknowledges that not all truths are created equal in that they are not all equally worth knowing or promoting and that this is a complication (1999: 94-96)[7]. These complications may dampen some of the appeal of veritism,

[5] Coady (2012: 20-22), by analogy to Rawls (1971), attempts to build an 'epistemic difference principle', to show how a purely veritistic account does not take the distinctness of knowing agents seriously, promoting practices that can leave some agents utterly ignorant.

[6] Another complication might be the question about the value of knowledge's *provenance*. If true beliefs were the sole epistemic value worth promoting via a system of epistemic practices, then in this system there could be no principled objection against plagiarism. Plagiarism, when done properly, promotes true belief, but we find it objectionable and any normative epistemology worth its salt probably needs to treat it as such.

[7] Elsewhere (Goldman 2002) tries to sidestep the issue by redefining the high epistemic value as "truth-possession on topics of interest". (Goldman 2002: 61) Coady notes (2012: 19), Goldman could also attempt to portray the relevance of knowledge as another fact to be known about the world (i.e. a sort of meta-knowledge), though this would introduce subjective evaluations into the mix. True beliefs may be seen as differently relevant from person to person. Furthermore, interest itself is also a matter of degree – and how do we reconcile between practices that promote many only slightly interesting truths as opposed to a few very interesting ones?

which professed to help us treat "normative epistemology as a simple matter of promoting one quantifiable value". (Coady 2012: 19)

When it comes to defining expertise, veritism seems to be somewhat less controversial. Experts are simply people who possess a lot of correct information, know a lot about their field and have the "ability to generate new knowledge in answer to questions" [8]. (Goldman 2001: 91) It is to them we turn when we want to find correct answers to our questions. We could distinguish between skill expertise (master violinists, trapeze artists) and intellectual expertise, but it is the latter which, for Goldman, is epistemologically more interesting. Similarly, Joseph Raz defined expert (or theoretical) authority simply as someone who is "good at stating how things are". One can be an authority on medieval coins or quantum mechanics and as such he can "vouch for the reliability of particular information." His judgment is found to be "a particularly reliable guide as to how things are, independently of that judgment". (Raz 1990: 2)

In his earlier writing, Goldman offered the following definition: an expert is someone who "either (1) has true answers to core questions in the domain (i.e., believes or assigns high probability to these answers), or (2) has the capacity (usually through the possession of learned methods) to acquire true answers to core questions when they arise. Degree of expertise, then, is primarily a function of the candidate's question-answering power, i.e., how often he can form a belief in a correct answer as opposed to having either no opinion or an incorrect opinion". (Goldman 1991: 129) The first definition of an expert implies that with the possession of that piece of information a layman can also become an expert, that expertise is, in fact, fully transferable. However, this is not always the case, as expertise can give its possessor a positional and social advantage over the layperson.

It bears emphasizing that experts, as opposed to novices or laypersons, not only have more knowledge but have a situational ability to gloss and acquire new knowledge rather quickly. What truly differentiates them is not what and how they know or how they use this extra knowledge in decision-making, but their 'capacity for learning'. Their epistemic standpoint gives them the extra ability to learn and develop new concepts and new understandings in their domains. (Luntley 2009) Goldman seems to have realized this and he does make an important concession saying that "there are elements of skill or know-how in intellectual matters too, so the boundary between skill expertise and cognitive expertise is not a sharp one". (Goldman 2001: 91)

[8] This distinguishes them from *reputational* experts, who are believed by others to be objective experts. It is possible to be a real expert without having the reputation for it – for example nobody needs to know or even care about my extensive knowledge of Monty Python, but that does not make me any less of an expert on the matter. On the other hand, even though most real, bona fide experts are also reputational experts, not all reputational experts are real experts. As we shall see, the question how to correctly ascribe the reputation to a real expert is an important problem.

Coady (2012: 28-30) chastises Goldman for unnecessarily complicating the concept of expertise. Goldman insists that experts possess not only a comparatively superior amount of knowledge but must have attained a certain threshold of a "substantial body of truths in the target domain" (Goldman 2001: 91) to be counted as a real expert. On a purely conceptual level, this does seem like rather a vague component, which seems to have been inspired more by our current practices of bestowing credentials on an expert after passing an arbitrary set threshold.

However, Coady misses the mark in his criticism of Goldman's claims about the dispositional element of expertise. Goldman argues that possessing information is not the sole distinguishing feature of expertise, but that it also "includes a capacity or disposition to deploy or exploit this fund of information to form beliefs in true answers to new questions that may be posed in the domain". (Goldman 2001: 91) This disposition "arises from some set of skills or techniques that constitute part of what it is to be an expert" and as such is not purely cognitive. (Goldman 2001: 91) Coady believes this disposition to be merely a symptom and not a definitional feature of expertise. He proposes to imagine Jones, who due to some impairment is incapable of learning and answering new questions, but still possesses a swath of relevant information learned before his accident. He should still be considered an expert until such a time that his knowledge becomes outdated or common. (Coady 2012: 29-30) This seems wrong. In an important sense, Jones does cease to be an expert. The insistence that the expert is simply only someone who has information deprives the concept of its important social implications. By saying simply Jones is an expert because he knows that proposition p is correct will in equal terms make Smith an expert as soon as he learns p from Jones. By extension, simply having all true propositions freely and readily available in some world-wide databank could make anyone capable of reading & clicking a mouse an expert. What Coady essentially proposes is defining experts as walking encyclopedias, but that is a very limited view. Absorbing the encyclopedia article on lasers, complete with the latest findings, will not make me an expert on lasers.

Sociologists Harry Collins and Robert Evans (2007) offer a highly nuanced and perceptive analysis of expertise, which runs parallel with Goldman's account. Expertise exists on a continuum, and the most substantive expertise involves a genuine understanding and tacit knowledge, which cannot be gained without deep social immersion in the social groups who possess and produce the expert knowledge. Their 'periodic table of expertise' (Collins – Evans 2007: 14) follows the growth of specialized knowledge from popular 'back of the napkin' understanding, one that can become ubiquitous with proper general education, through knowledge gained by reading primary sources, toward specialist tacit knowledge, where they further distinguish between interactional

and contributory expertise. Knowledge is seen as wisdom-based or competence-based – it is not about what you can learn or recite, but what you can do[9].

Part of the specialist training then is in 'learning the ropes', being habituated into the specialist practices. To become an expert means interactive immersion with the specialist field, not only mastering all the primary source knowledge accumulated by experts in the past[10], but undergoing a process of 'enculturation'. After this the expert learns to 'talk shop' with other experts – gaining interactional expertise[11] – and then potentially learns how to contribute new knowledge in their domain. (Collins – Evans 2007: 23-24) On this view, expertise is a substantive quality that any person can possess, if they undergo the requisite training and enculturation in the specialist field[12]. While that might sound democratic, it in no way implies that anyone possesses some default expertise, that there is such a thing as 'folk wisdom' with contributions counted as equally valid as those of the experts. (Collins 2014)

When the 'sociology of scientific knowledge' grew as a field of study in the 1970s, it focused on how scientists arrive at their knowledge and how often enough they fail to take into account 'lay' knowledge, i.e. experience or contributions from the people without proper accreditation. (Collins – Evans 2002) One such exemplary study (Wynne 1992) concerned the Cumbrian sheep farmers and the government experts who were sent to help them contain the fallout on their pastures from the Chernobyl nuclear disaster in 1986. The government radiation experts' suggestions for dealing with the fallout on the pastures were impractical, whereas, as the sociologist found, the farmers had a much better understanding of what needed to be done. (Collins 2014: 40)

The unfortunate conclusion that someone might draw is that the accredited experts know less than they might admit and that the lay public possesses some 'lay expertise' of their own. This proverbial folk wisdom and common sense

---

9 It should be noted at this point that even though much of the discussion in this article concerns expertise in terms of scientific knowledge, the implication of both sociology of expertise and social epistemology is that expertise as a concept is not limited only to science proper. I thank an anonymous reviewer for suggesting this clarification.

10 A huge part of becoming an expert, probably familiar to anyone with their PhD, is learning what literature to ignore. As Collins and Evans note "it can be shown that what is found in the literature, if read by someone with no contact with the core-groups of scientists who actually carry out the research in disputed areas, can give a false impression of the content of the science as well as the level of certainty. Many of the papers in the professional literature are never read, so if one wants to gain something even approximating to a rough version of agreed scientific knowledge from published sources one has first to know what to read and what not to read; this requires social contact with the expert community. Reading the professional literature is a long way from understanding a scientific dispute" (2007: 22).

11 Interactional expertise is more important than it might sound – for example, it is the basis of 'peer review', since none of the reviewers can always be expected to be doing the same highly specialized research, but most specialist are conversant enough to know whether a specific research contribution can pass the muster. (Collins 2014: 72)

12 Moving one step further beyond the individual, sociologist Gil Eyal (2010) proposed to view expertise as a network connecting professionals, semi-professionals, their clients, technical devices, and institutional arrangements. Expertise can be viewed as practical mastery, but "it is always equipped mastery, contingent on devices and arrangements that determine how information, decisions, and attributions flow within a network". (Eyal 2010: 10)

make the focus on qualified experts in decision-making appear as illegitimate and unacceptable elitism. The indefinite inclusion of the larger populace in decision-making regarding highly technical issues beyond the educated elite has been characterized by Collins and Evans (2002) as an unfortunate dissolution of the boundary between the expert and the public. The mistake, as Collins and Evans see it, was in treating highly elite sheep farmers as ordinary 'laymen', when they were actually "members of an elite – the elite of experienced farmers". They were experts in terms of having firsthand experience and knowledge of the grazing habits of sheep and were therefore much more apt to understand the practical implications of the scientific advice that was to be acted upon. (Collins 2014: 40-41) Their contributory expertise, though lacking in scientific accreditation, was not a case of simple folk wisdom. The inability of some experts to recognize contributory though non-accredited expertise of different social groups can be unfortunate but treating this neglected group as if they were merely lay-people and consequently declaring expertise to be an illegitimate failure only exacerbates the accumulated misunderstandings. Simply put, we are not all experts now.

Identifying expertise: whom do you trust?

While the question of who should be counted as an expert can grow even more detailed and technical, the argument for the desirability of experts is much more straightforward. As Hardwig (1985) notes, it can be very rational to refuse to think for oneself if we have good reasons to believe we are epistemically inferior to someone else, i.e. an expert, and therefore defer to her epistemic authority. What Goldman called 'epistemic paternalism' (1991) then makes sense on epistemic grounds alone. The question of expertise is closely connected with the problem of testimony. Most of what we know, we know from relying on the word of others – testimony is truly ubiquitous. Most of what we know and take for granted, from our blood type to celestial mechanics, is also based on expert scientific testimony, without our first-hand knowledge or first-hand observation and verification. This article will not discuss the epistemology of testimony and the debate between reductionism and non-reductionism about whether accepting testimonies requires non-testimonial positive reasons (reductionism) or not. (But cf. Coady 1992; Lackey 2008; Lipton 1998) Instead, in what follows we will examine the question of when and why we should accept a testimony from an expert. How do we recognize an expert relevant in a particular field or domain? And how do we treat conflicting knowledge claims or disagreeing expert testimonies?

For much of what we know about the world we rely on others, on their work and testimony. We trust them and most of what we believe to be true we know from them. (Lackey 2008) The fact that I, writing this, am sitting in a town

called Bratislava, is something I know solely because of what others have told me. I have no independent means open to me to check, and while a conspiracy of cartographers is a highly unlikely event, my knowledge of my whereabouts rests on nothing else then the trust in others. Epistemology of testimony informs us that trusting others and learning from them, despite our fallibility, is an appropriate method of learning about the world and arriving at knowledge. We need to remember that knowledge is not certainty. What we call knowledge is justified beliefs that are very likely to 'track the truth' (if arrived at by an appropriate method). Knowledge presents our limited connection to reality, how we 'track the facts' of the world. (cf. Nozick 1981; Roush 2005)

Michael Strevens (2010) argues that our knowledge of the world is essentially mediated by others who come together to form a social network whose "principal epistemic material is scientific authority". What we accept as true knowledge rests on "trust in what scientists say", on the epistemic authority we attribute to them. (Strevens 2010: 295) More often than fear of fraud or dishonesty, what drives concerns about a presumptive knower's veracity is his or her level of competence. When it comes to 'proximal authority' in their field of study, the correct reflection, recognition and reporting of the patterns of phenomena, reliability and reproducibility of their findings, is what drives the scientists' reputation and bestows greater or smaller scientific authority. (Strevens 2010: 295) The authority is probably best assessed through calibration, both direct and indirect, a rough (back-)tracking of the reliability of the past pronouncements of scientists and others scientists' assessment of them. (Strevens 2010: 297-298)

Yet our (epistemic) trust is intertwined with our beliefs. What you know and "what you believe depends on who you believe (a)nd who you believe depends on what you believe". (Herzog 2006: 105) Our experience and prior beliefs matter greatly in how we assign epistemic authority to others. To an extent, the rationality of our beliefs (unlike truth itself, of course) is relative – it depends on what we believe already and how well something new fits within it. (Herzog 2006: 106) We assign epistemic authority to our communicators based on certain indications of trustworthiness. These are negotiated in our communicative practices and we as speakers and hearers share an epistemic responsibility to avoid any factors that could bias our judgment. Gloria Origgi (2008) highlights that these standards are adjusted continually as conversations go on and contexts and interests vary. Our epistemic responsibility is "a matter of adjusting our way of interpreting what other people say to epistemic needs"; we look for the information that is not only true but "relevant enough in a particular context to deserve our attention". (Origgi 2008: 42) Our stance of trust to epistemic authority is both tentative and contextually relative. Thus, when we assign someone an expert status, i.e., credit her as an epistemic

authority in a particular domain, we do so because of an interplay of contextual institutional and communicative cues that what she says has relevance to us.

Though justified and essential, this assessment of authority is not without flaws. For one, it is somewhat nebulous – scientific authority and reliability is not exactly quantifiable and determinate, merely a 'good enough, close enough' estimate placeholder. Furthermore, there is always a problem to find an adequate track record and details to form a reliable picture – often enough the calibration will rely only on proxies – a prestigious publication, grants and awards, good university, or a renowned supervisor. Finally, there are network problems: unbeknownst to the calibrator there are informal networks, and some second-order assessment of authority she will rely on can be poisoned by instances of back-scratching, or logrolling, i.e. motivational artifacts not tied to truth-regarding practices. (Strevens 2010: 299-302)

Of course, testimonial practices, ubiquitous as they may be, are not automatically or necessarily only truth-regarding and veritistically accurate. As Goldman notes, "(e)pistemic incompetence and private interest often lead to inaccurate, insincere, deceptive, or incomplete information." To assist correct recognition of reliable informers we have developed a set of 'indicator properties' signaling trustworthiness. However, as will be discussed in the penultimate section, even these indicators can be imperfect and have been in the past prone to track identity prejudices and bias. (Goldman 2010: 200) Thus, for example, being a gentleman in 18th century England was an automatic mark of being trustworthy (Shapin 1991; 1994), whereas whole segments of population lacked the requisite credibility simply because of their gender or social position. (Fricker 2007) Nevertheless, they are still better than nothing, clues and indicators of credibility, though fallible, are indispensable guideposts in our division of cognitive labor.

Identifying expertise: how to recognize an expert?

Today the task set before lay citizens is to be able to assess expert testimony relevant for democratic policy-making – even though they are often incapable of assessing the merits of the research itself. Expert-layperson relations bear the hallmark of the standard asymmetry of information (Goodwin 2010; Collins – Weinel 2011): a layperson requires expert opinion, but her lack of knowledge is also what makes her incapable of assessing the expert claims and trustworthiness.

"(P)rofessionals have power over lay principals by virtue of their expertise, functional indispensability, and intrinsic ambiguity associated with the services they provide. Such agency exchanges involve information asymmetry that is particularly severe, since principals do not possess the technical knowledge to evaluate the effort invested or the outcome accomplished (…) (T)his

knowledge asymmetry – arising from a difference in task-related knowledge – is distinct from the information asymmetry with which much of the mainstream literature is concerned. Not knowing *how* the agent does a job is distinctly different from and compounds the problem of not knowing *what* the agent does." (Sharma 1997: 768, emphasis in the original)

Yet, we as laypersons do listen to experts in various settings all the time and make these assessments despite our seeming lack of mental wherewithal to do so. Goodwin maintains that "the skill of judging trustworthiness is widely distributed; indeed, it's available to anyone who is willing to devote some time to practicing it in their everyday life". (Goodwin 2010: 141) Walton (1997: 223) suggests our assessment can be formalized if we ask the following critical questions to establish whether to rely on expert claims:

1. Expertise Question: How credible is E as an expert source?
2. Field Question: Is E an expert in the field that (assertion) A is in?
3. Opinion Question: What did E assert that implies A?
4. Trustworthiness Question: Is E personally reliable as a source?
5. Consistency Question: Is A consistent with what other experts assert?
6. Backup Evidence Question: Is E's assertion based on evidence?

These questions are a good starting point that gives the layperson means to assess the challenges of informational asymmetry in transactions with experts: the questions are aimed at both moral hazard (in this case: shirking – has the expert done his best in the principal's interest?) and adverse selection (in this case: who the relevant expert is?). (Goodwin 2010) When the lay public decides to rely on the expertise, they are not assessing the content of the claims, but "the trustworthiness of the purported expert". (Goodwin 2010: 141)

Goodwin further suggests focusing on methods that would enhance trust in expert/lay relations. The brunt of the difficulty should not lie with the lay public. Goodwin believes experts themselves have good reasons to make the transactions succeed. Experts should engage in "reputational bonding" and by committing themselves to the opinion they are giving – staking their reputation on it – they can give the layperson new reasons to trust them. Experts hence "have incentives to discover or create practical communicative means to signal their expertise in such a way that layfolk will be able to assess it with confidence". (Goodwin 2010: 142)

This recognition can be tied to recent advances in social cognitive psychology. Dan Sperber et al. (2010) discuss the psychological mechanisms of our individual 'epistemic vigilance' and argue that for epistemic vigilance to work at a population scale, a set of appropriate institutional and cultural practices need to be in place. Cognitive psychologists postulate that a default 'tentative trust' is part of our communicative reasoning. We are "disposed to critically examine communicated information only when circumstances

motivate" us to do so. (Sperber et al. 2010: 363) This vigilance then is by no means a blind trust, but neither is it automatic incredulity: received communications are guided by an expectation of relevance and comprehensibility and are assessed based on their content and source. In other words, we tend to accept what we hear, if the source is trustworthy and if we can make sense of the information (it does not conflict with prior beliefs too much). This filtering role of epistemic vigilance plays a key role in our face-to-face communications, but the underlying mechanisms "are not geared to filtering information transmitted on a large scale". (Sperber et al. 2010: 382) Therefore, it needs institutional buttressing at a population scale.

Institutional procedures, involving reputational rankings, certifications and sanctioning, and curating of background information, may provide better recognition of trustworthiness "than cumulative effect of spontaneous vigilance exercised by individuals". (Sperber et al. 2010: 382) Vigilance toward content is typically exercised through debate and argument, which can take various institutional forms, e.g., judicial institutions employ trials, cross examinations of witnesses and evidence, etc. In science, this institutional organization geared toward epistemic vigilance is probably the most elaborate and involves assessment of observational and theoretical claims via "social processes such as laboratory discussion, workshops, conferences, and peer review in journals (…) assessed through rankings". (Sperber et al. 2010: 383) These social mechanisms are to a considerable extent "articulations of psychological mechanisms linked through extended chains of communication and … institutional patterning" ultimately resulting in a complex and formidable "distributed epistemic assessment system". (Sperber et al 2010: 383) A distributed cognitive system such as science then warrants our belief – adopting a stance of tentative reliance and trust in its testimonies is well within the scope of our epistemic vigilance.

In other words, there is the possibility of following certain indicators signaling expert trustworthiness and reliability. Anderson (2011) offers one set of such criteria of second-order judgment of expert claims, along with their honesty and epistemic responsibility[13]. First, the simplest way to assess an expert claim is through a hierarchy of expertise: from laypersons, through people with various science degrees and up to doctoral degrees, to scientists who are active in the field in question, are widely recognized by their colleagues, cited and published, up to the top of the field, who "have taken leading roles in advancing theories that have won scientific consensus or opened up major new lines of research, or in developing instruments and

[13] See Goldman (2001) for a similar set of criteria, emphasizing their previous track record. Also, see De Winter – Kosolosky (2013) for a fruitful discussion of the concept of epistemic integrity in scientific research and Grinnell (2013) for an examination of research integrity in everyday practice of science.

methods that have become standard practice" and won awards and other prestigious positions. The higher the putative expert is on this scale, the more we have a reason to listen to their testimony about the issues in her domain. It is relatively easy to apply these criteria, since all the required information are usually readily available online. (Anderson 2011: 146-147)

Secondly, when judging the experts' honesty, there are several factors to look for that might discredit or severely impinge on the reliability of their testimony. The list proposed by Anderson is not by any means exhaustive and some of it can be hard to come by. However, there are clear-cut cases, such as evidence of a conflict of interest[14] (e.g., funding by a vested interest), evidence of academic dishonesty, plagiarism, incorrect citations, data cherry-picking, misquoting, misusing statistics, faking experiments, as well as misrepresenting the arguments of opponents, or making false accusations of dishonesty. (Anderson 2011: 147)

Finally, there are factors which might indicate evasion of accountability, and thus can be symptoms of epistemic irresponsibility. There is the evasion of peer-review, the failure to share one's data, to reveal one's methods and procedures, and the general failure to submit one's research findings to the scrutiny of his peers in the relevant publications. There is also the dialogical irrationality of repeating refuted claims without providing new evidence and advancing 'crackpot theories' in domains outside of their area of expertise, or even willingly associating with other known crackpots. (Anderson 2011: 147-148)

Further complications and distinctions

The problems are compounded for the lay person when experts seem to disagree. The first thing open to examination is whether there exists a consensus of experts on the issue. The very fact that there seem to be two people with PhD degrees disagreeing on a matter is not that problematic. As Ben Goldacre noted, "(t)here are few opinions so absurd that you couldn't find at least one person with a PhD somewhere in the world to endorse them for you". (Goldacre 2009: 97) Consensus is in place when the "vast majority of diverse inquirers converge on certain conclusions". Then it is best for the layperson to suspend her judgment and "accept the consensus even in the face

[14] See Wilholt (2009) for the defense of the notion of preference bias as an epistemic shortcoming in research and the need for conventional scientific standards for trust maintenance in research community. At the same time, Zenker (2011) makes a compelling case why the *conflict of interest* objection to expert arguments has no purchase. Either we can also show the experts to be wrong on the merits of their propositional content and a *circumstantial ad hominem* does not add anything to our argument or relying on alleged conflict of interest alone does not suffice to discredit expert authority. Even if motivations of the experts can be successfully established "one would still need to demonstrate – presumably by raising arguments – that self-interested, or interest-conflicted, arguers have somehow let themselves be led astray in particular cases. (…) (N)othing seems to be gained from 'insight into interests' that could not also be treated by showing, for the particular case, that another standpoint is equally well or better supported". (Zenker 2011: 367-368)

of a handful of dissenting scientists". (Anderson 2011: 149) The scientific consensus on a given topic can best be identified by examining the survey articles in the peer literature, consensus statements and reports of the leading scientific organizations in the field, or even in reputable encyclopedia articles and university textbooks. (Anderson 2011: 149)

Of course, the consensus may not always be readily apparent or even to be had at all. The issue of disagreement between epistemic peers has received a lot of attention in the literature. (Goldman 2001; Matheson 2005; Kelly 2011; Coady 2006; Coady 2012) It is not unimaginable that a policy-relevant question is also a fountain of bitter and acrimonious scientific disagreement between epistemic peers. But apart from assiduously applying the suggested criteria of identifying the correct experts, as suggested by Anderson (2011) and Goldman (2001), there seems little to do for the lay person in this scenario, except for 'going by the numbers' – i.e., following the side in the argument with the superior numbers in the relevant expert community[15]. (Coady 2006, 2012)

When discussing expertise, it should be remembered that knowledge has an inherently social nature and cannot be completely divorced from socio-economic relations and situations. Knowledge, and even an appearance of knowledge, can be a 'social power' – an expert, or anyone who is perceived as knowledgeable is someone who has reliable and credible indicators of such epistemic authority. Miranda Fricker (1998, 2007) noted the possibility of an 'epistemic injustice' – when the structures of prevailing social power influence unduly the norms of credibility which govern the perception of competence and trustworthiness. This social power can thus bring about "a mismatch between rational authority and credibility – so that the powerful tend to be given mere credibility and/or the powerless tend to be wrongly denied credibility". (Fricker 1998: 170) The point is that social and cultural context can govern and limit how one's competence and trustworthiness are rated and society's 'background injustice' can be translated into an epistemic inequality as well. The point is, fair epistemic practices should not simply be assumed. The 'norms of credibility' designed to define expert competence and trustworthiness need to be subject to our epistemic vigilance as well, so that a bias against a particular social group goes unnoticed.

It is also useful at this point to contrast the notion of an expert with that of a public intellectual who is usually understood as an arbiter of public values and an influencer in political discourses. (cf. MacLean et al. 1990) When we think of an intellectual as being an expert, we perceive her in this status "as a possessor of a specialized range of practically effective knowledge – the

[15] It should be noted that there is disagreement on this particular solution in the expert epistemology community, with Goldman (2001) and others arguing against it. See Coady (2012: 38-46) for an illuminating analysis.

intellectual in (her) role as a 'professional' or 'expert' to be consulted in relation to projects directly relevant to (her) own field of knowledge". (Levy 1990: 126-127) The intellectual is authorized by her specialist knowledge, but if she starts pontificating outside of her field of specialty, she loses much of the status. It is of no use for her if she is also rhetorically gifted, i.e., a specialist in the use of words, since her "forays outside (her) own specialized field of knowledge are of no more cognitive value than anyone else's". (Levy 1990: 127) If she is convincing (or charismatic) in her public pronouncements, we may conclude, pace Dworkin's distinction between impact and influence (2000: 191), that the intellectual may have more *influence* than the average person in shaping the political discourse, however her direct *impact* on it is subject to the same political procedures as everyone else's. In general, we would not just listen to any expert – we would, for example, consult an architect about the structural integrity of a proposed building project, or a plumber on the clogged water pipe, but we would not give either of them a special hearing when it comes to judging the country's immigration policy.

When it comes to pronouncements on morals and judgments of values, we justifiably tend to be even more skeptical. Intuitively, we feel discomfort with the very notion of moral experts, i.e. people who have a greater claim to more and better moral knowledge or judgment than us. (Driver 2006: 629) This is not because it would imply a suspension of our autonomy – for one thing all trust implies a suspension of autonomy to some degree. Plus, it need not run against autonomy as such to submit to an expert judgment (be it a reasoning or an aesthetic expert) – we may have a higher order reason and make an autonomous decision to submit based on the expert's reliability. (Driver 2006: 635-636; also cf. Hardwig 1985; Goldman 1991) However, moral experts, unlike reasoning experts and even aesthetic experts, have a harder time providing markers of their reliability. Not only is it harder for them to show they are truly disinterested, impartial, and reliable (Driver 2006: 639), but the nature of their expert claim holds a greater sway over one's life which places a further burden on their credibility that seems almost impossible to overcome. A similar point has also been raised by Cholbi (2007) who points to an insurmountable problem of providing accurate and reliable credentials of their putative expertise. Indeed, with the notable exception of Peter Singer (1972: 117), who argued that moral philosophers can think full-time about moral issues and are trained to think and argue logically about moral concepts, the idea that there are objective 'moral experts', i.e. people who have more knowledge and better answers about moral truths, is met with almost universal rejection. (Archard 2011; Driver 2006; Cholbi 2007)

Finally, it should be noted that some of the skepticism over experts by lay public can be driven by incorrect labeling of experts, simply misrecognizing

that what is an expert by reputation is not a true expert at all. Being skeptical of someone's putative expertise on a subject can be a healthy thing; however, it is not good to let it lead us to skepticism over expertise as such. More generally, someone may feel skeptical of relying on experts because it feels elitist – it implies someone's opinions are more valuable. But this is an error, though one with an impressive pedigree, committed by no lesser figure than the iconoclastic philosopher of science, Paul Feyerabend.

Feyerabend is known for his skeptical attitudes toward scientific expertise as such and his suspicions about the role of expert scientists in the public sphere. (Feyerabend 1978, 1993) In his prescriptions (1978) he prioritized democratic politics over any exalted status of expert authority. Feyerabend's worry about experts' propensity for dogmatization of their views along with their increasing relevance for policy development has led him to the espousal of institutional mechanisms that let laypersons judge expert views and research agendas. He went as far as suggesting that "elected committees of laymen must examine whether the theory of evolution is really as well established as biologists want us to believe", or that they should "examine the safety of all nuclear reactors in each individual case and must be given access to all the relevant information" or investigate whether "people's minds are properly judged by psychological tests" (1978: 96-97).

The problem with Feyerabend's account and similar accounts is that they "romanticize laypeople and their capacities". (Selinger 2003) Selinger argues that, while most critics have focused on Feyerabend's straw man views of experts, his biggest failing lies in his reliance on "an exaggerated view of the epistemic capacities of laypeople". (Selinger 2003: 360) Feyerabend bases his views of the epistemic capacities of laypeople on anecdotes about outsiders recognizing specialist mistakes (in the context of expert witness cross-examination), the relative ease with which army medics achieved their medical skills in several months long army trainings, or even self-deprecating bon mots of Bohr or Einstein describing themselves as mere dilettantes. All of these are selective and hardly illustrate anything about actual capacities of laypeople. Lawyers may not be experts, but neither do they try to establish truth – they work in an adversarial institutional setting; they are themselves experts in exposition of fallacies and rhetorical weak points. It is also highly doubtful that army medics trained for combat situations have expertise and a skill-set comparable with physicians trained for many years. (Selinger 2003: 366-369) Because he never considered experts as anything more than an arrogant interest group, he committed the 'superman fallacy' of ascribing the general cognitive aptitude that comes with expertise to basically anyone. (Selinger 2003: 372)

Indeed, some people's opinions do matter more, because they know more about the subject, but there is nothing necessarily elitist about recognizing this

fact. We are all experts and novices about different fields and subjects. (Coady 2012: 31) For example, I am the preeminent expert when it comes to knowing my mental states, all around me are novices in this regard, and even though they may not share my enthusiasm about the subject, should they desire more information, they will hardly find anyone whose opinion on this matters more than mine. We are all experts and novices in turns at different subjects – it is only that some are experts in the fields which others find highly relevant. However, bestowing the title of expertise on someone does not go against the principle of equal worth and make him a better human being, automatically deserving of more respect.

Conclusion

In attempting to answer the question of who an expert is the article relies on both social epistemology and sociology of expertise. We have seen that social epistemology and sociology of expertise have converged on a definition of experts that necessitates an integration of the social component into the definition. For Goldman and other epistemologists, the expert is more than a sum of knowledge she carries around in their head – their definition also focuses on a set of skills and know-how in answering new questions in their domain. These skills are necessarily socially embedded and here the literature on the sociology of expertise from the science and technology studies provides some necessary fleshing out of what this entails. Collins and Evans have thus posited expertise as existing on a continuum of a set of competences learned though the habituation and enculturation into specialist socially recognized knowledge-generating practices.

Secondly, the article discussed the importance of testimonial trust when accepting expert pronouncements. We trust people as experts because of institutionally embedded trackers of their reliability – we trust contextually and only tentatively. This moves us to the question of how do we as individual knowers recognize that someone is an expert worthy of our trust. As laypeople we are in no position to assess their claims on their merit. As research on social cognition points out, as knowers we possess enough epistemic vigilance to be able to recognize trustworthy members of a distributive cognitive system through second-order judgments – though not without institutional and cultural practices encouraged by the community of experts. The responsibility for easier identification then lies with experts themselves and their ability to signal reliability and trustworthiness at a populational scale: this credible signaling implies a distributed assessment system of expert production, i.e. a system we have come to label ‘science’.

Finally, the article considered several important distinctions and problems associated with recognizing expertise, such as expert disagreement, the

possibility of epistemic injustice, the distinction between public intellectuals, moral experts, and scientific experts, as well as the issue of outright skepticism over expert judgments in a public sphere.

In a nutshell, the article showed that experts can be understood in the first approximation simply as more knowledgeable or educated individuals, but ones situated in an institutional context of specific cognitive practices. Experts are holders of specialized knowledge usually (but not exclusively) produced by academic research, who (can) provide relevant cognitive input into our decision-making. More specifically, scientific experts can lay claim to epistemic authority only through their involvement in scientific practices. Since science, epistemologically considered, is a set of cognitive practices aimed at discovering the truth (Goldman 1999; Ziman 1991), it has certain epistemic authority, but not because it possesses true knowledge.

Most philosophers of science adhere to a view termed 'convergent realism', which would postulate that scientific practices are progressing toward true knowledge. Even though our current state of knowledge might not be the final truth, we are getting better and better at getting closer and closer to it. To paraphrase Goldman (1999: 247): scientific practices simply fare the best out of all possible rival practices in answering the sort of questions science usually seeks to answer, i.e. it is comparatively superior. Expertise then is merely the personalized embodiment of this superiority. At the same time, we must remember that the relevant expertise is defined by the questions we ask and that the scope of relevant expertise is not determined by who wears a white lab coat, but how the person is involved in practices of cognitive labor.

Pavol Hardoš *is a lecturer at the Institute of European Studies and International Relations, Faculty of Social and Economic Sciences, Comenius University in Bratislava. His research interests focus on democratic theory, political representation, and the political aspects of social epistemics.*

REFERENCES

ANDERSON, E., 2011: Democracy, Public Policy, and Lay Assessments of Scientific Testimony. Episteme 8, No. 2, pp. 144-164.

ARCHARD, D., 2011: Why Moral Philosophers Are Not and Should Not Be Moral Experts. Bioethics 25, No. 3, pp. 119-127.

ARENDT, H., 1961: What is Authority? In: Arendt, H. (ed.): Between Past and Future: Six Exercises in Political Thought. New York: The Viking Press, pp. 91-142.

BAYLES, M., 1987: The Justification of Administrative Authority. In: Pennock, J. R. – Chapman, J. W. (eds.): NOMOS XXIX: Authority Revisited. New York & London: New York University Press, pp. 287-301.

CHOLBI, M., 2007: Moral Expertise and the Credentials Problem. Ethical Theory and Moral Practice 10, No. 4, pp. 323-334.

COADY, C. A. J., 1992: Testimony: A Philosophical Study. Oxford: Oxford University Press, 315 pp.
COADY, D., 2006: When Experts Disagree. A Journal of Social Epistemology 3, No. 1-2, pp. 68-79.
COADY, D., 2012: What To Believe Now: Applying Epistemology to Contemporary Issues. Chichester: Wiley-Blackwell, 202 pp.
COLLINS, H., 2014: Are We All Scientific Experts Now? Cambridge: Polity Press, 140 pp.
COLLINS, H. – EVANS, R., 2002: The Third Wave of Science Studies: Studies of Expertise and Experience. Social Studies of Science 32, No. 2, pp. 235-296.
COLLINS, H. – EVANS, R., 2007: Rethinking Expertise. Chicago: The University of Chicago Press, 160 pp.
COLLINS, H. – WEINEL, M., 2011: Transmuted Expertise: How Technical Non-Experts Can Assess Experts and Expertise. Argumentation 25, No. 3, pp. 401-413.
DE WINTER, J. – KOSOLOSKY, L., 2013: The Epistemic Integrity of Scientific Research. Science and Engineering Ethics 19, No. 3, pp. 757-774.
DRIVER, J., 2006: Autonomy and the Asymmetry Problem for Moral Expertise. Philosophical Studies 128, No. 3, pp. 619-644.
DWORKIN, R., 2000: Sovereign Virtue. Cambridge (MA): Harvard University Press, 511 pp.
EYAL, G., 2010: How Parents of Autistic Children Became "Experts on Their Own Children": Notes toward a Sociology of Expertise. Journal of Sociology 54, pp. 3-17.
EZRAHI, Y., 1995: Technology and the Illusion of the Escape from Politics. In: Ezrahi, Y. – Mendelsohn, E. – Segal, H. (eds.): Technology, Pessimism, and Postmodernism. Amherst: University of Massachusetts Press, pp. 29-37.
FEYERABEND, P., 1978: Science in a Free Society. London: Verso, 221 pp.
FEYERABEND, P., 1993: Against Method. 3rd Edition. London: Verso, 279 pp.
FRICKER, M., 1998: Rational Authority and Social Power: Towards a Truly Social Epistemology. Proceedings of the Aristotelian Society, New Series 98, pp. 159-177.
FRICKER, M., 2007: Epistemic Injustice: Power and the Ethics of Knowing. Oxford: Oxford University Press, 188 pp.
GOLDACRE, B., 2009: Bad Science. London: HarperCollins, 352 pp.
GOLDMAN, A., 1991: Epistemic Paternalism: Communication Control in Law and Society. The Journal of Philosophy 88, No. 3, pp. 113-131.
GOLDMAN, A., 1999: Knowledge in a Social World. Oxford: Oxford University Press, 407 pp.
GOLDMAN, A., 2001: Experts: Which ones should you trust? Philosophy and Phenomenological Research 63, pp. 85-110.
GOLDMAN, A., 2002: Pathways to Knowledge: Private and Public. Oxford: Oxford University Press, 240 pp.
GOLDMAN, A., 2010: Systems-Oriented Social Epistemology. In: Gendler, T. S. – Hawthorne, J. (eds.): Oxford Studies in Epistemology. Volume 3. Oxford: Oxford University Press, pp. 189-214.

GOODWIN, J., 2010: Trust in Experts as a Principal-Agent Problem. In: Reed, C. – Tindale, C. (eds.): Dialectics, Dialogue and Argumentation: An Examination of Douglas Walton's Theories of Reasoning and Argument. London: College Publications, pp. 133-143.
GRINNELL, F., 2013: Research Integrity and Everyday Practice of Science. Science and Engineering Ethics 19, No. 3, pp. 685-701.
HARDWIG, J., 1985: Epistemic Dependence. The Journal of Philosophy 82, No. 7, pp. 335-349.
HERZOG, D., 2006: Cunning. Princeton: Princeton University Press, 208 pp.
KELLY, T., 2011: Peer Disagreement and Higher Order Evidence. In: Goldman, A. – Whitcomb, D. (eds.): Social Epistemology: Essential Readings. Oxford: Oxford University Press, pp. 183-217.
LACKEY, J., 2008: Learning from Words: Testimony as a Source of Knowledge. Oxford: Oxford University Press, 308 pp.
LEVY, D., 1990: Politics, Technology and the Responsibility of Intellectuals. In: MacLean, I. – Montefiore, A. – Winch, P. (eds.): The Political Responsibility of Intellectuals. Cambridge: Cambridge University Press, pp. 123-142.
LIPTON, P., 1998: The Epistemology of Testimony. Studies in the History and Philosophy of Science 29, No. 1, pp. 1-31.
LUNTLEY, M., 2009: Understanding Expertise. Journal of Applied Philosophy 26, No. 4, pp. 356-370.
MACLEAN, I. – MONTEFIORE, A. – WINCH, P. (eds.), 1990: The Political Responsibility of Intellectuals. Cambridge: Cambridge University Press, 312 pp.
MATHESON, D., 2005: Conflicting Experts and Dialectical Performance: Adjudication Heuristics for the Layperson. Argumentation 19, pp. 145-158.
MIKALSEN, K. K., 2010: Testimony and Kant's Idea of Public Reason. Res Publica 16, No. 1, pp. 23-40.
NICHOLS, T., 2017: The Death of Expertise. Oxford: Oxford University Press, 252 pp.
NOZICK, R., 1981: Philosophical Explanations. Cambridge, MA: The Belknap Press of Harvard University Press, 764 pp.
ORIGGI, G., 2008: Trust, Authority and Epistemic Responsibility. Theoria 61, pp. 35-44.
PARTRIDGE, E., 2006: Origins: A Short Etymological Dictionary of Modern English. London: Routledge, 992 pp.
RAWLS, J., 1971: A Theory of Justice. Cambridge, MA: The Belknap Press of the Harvard University Press, 623 pp.
RAZ, J., 1990: Introduction. In: Raz, J. (ed.): Authority. New York: New York University Press, pp. 1-19.
ROUSH, S., 2005: Tracking Truth: Knowledge, Evidence, and Science. Oxford: Clarendon Press, 248 pp.
SELINGER, E., 2003: Feyerabend's Democratic Critique of Expertise. A Journal of Politics and Society 15, No. 3-4, pp. 359-373.

SHAPIN, S., 1991: “A Scholar and a Gentleman”: The Problematic Identity of the Scientific Practitioner in Early Modern England. History of Science 29, pp. 279-327.
SHAPIN, S., 1994: A Social History of Truth: Civility and Science in Seventeenth-Century England. Chicago: University of Chicago Press, 483 pp.
SHARMA, A., 1997: Professional as Agent: Knowledge Asymmetry in Agency Exchange. The Academy of Management Review 22, No. 3, pp. 758-798.
SINGER, P., 1972: Moral Experts. Analysis 32, No. 4, pp. 115-117.
SPERBER, D. – CLÉMENT, F. – HEINTZ, C. – MASCARO, O. – MERCIER, H. – ORIGGI, G. – WILSON, D., 2010: Epistemic Vigilance. Mind & Language 25, pp. 359-393.
STREVENS, M., 2010: Reconsiderng Authority: Scientific Expertise, Bounded Rationality, and Epistemic Backtracking. In: Gendler, T. S. – Hawthorne, J. (eds.): Oxford Studies in Epistemology. Volume 3. Oxford: Oxford University Press, pp. 294-330.
TETLOCK, P., 2006: Expert Political Judgment: How Good Is It? How Can We Know? Princeton: Princeton University Press, 344 pp.
TURNER, S., 2001: What Is the Problem with Experts? Social Studies of Science 31, No. 1, pp. 123-149.
TURNER, S., 2003: Liberal Democracy 3.0: Civil Society in an Age of Experts. London: SAGE Publications, 168 pp.
WALTON, D., 1997: Appeal to Expert Opinion: Arguments from Authority. University Park: Pennsylvania State University Press, 281 pp.
WILHOLT, T., 2009: Bias and Values in Scientific Research. Studies in History and Philosophy of Science 40, No. 1, pp. 92-101.
WYNNE, B., 1992: Misunderstood Misunderstanding: Social Identities and Public Uptake of Science. Public Understanding of Science 1, No. 3, pp. 281-304.
ZENKER, F., 2011: Experts and Bias: When is the Interest-Based Objection to Expert Argumentation Sound? Argumentation 25, pp. 355-370.
ZIMAN, J., 1991: Reliable Knowledge: An Exploration of the Grounds for Belief in Science. Cambridge: Cambridge University Press, 197 pp.