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Experts communicate invaluable information for lay publics' personal and civic decision-making. Expertise is present everywhere in contemporary societies and influences the way we vote, eat, take care of our health and move freely (or not) in our cities. It is thus crucial that our trust in experts is reliable and grounded on a rational basis. But how do lay publics decide which experts to trust when they lack the competence to evaluate the information provided? What additional information is available and how do we use it to assess expertise? This special issue explores social indicators of trust, or cues in our social environment that provide supplementary information that people consciously and unconsciously use to decide which experts to trust.

'Social indicators' are best known as an area of study in sociology that originated in the 1960s as a quality of life assessment tool in the United States. At the time, the most popular definition was that published by the United States Department of Health's *Toward a Social Report* which defined social indicators as 'a statistic of direct normative interest which facilitates concise, comprehensive and balanced judgments about the condition of major aspects of a society.' (1969, 97) This definition was quickly criticized for being too restrictive (Sheldon and Freeman 1970) and was subsequently broadened to include components of a social system model 'including sociopsychological, economic, demographic, and ecological' dimensions (Land 1971, 323). These components can be accumulated into a time-series and can therefore be aggregated or disaggregated for the purpose of monitoring the social system, 'helping to identify changes and to guide intervention to alter the course of social change' (Ferriss 1988, 601).

There is a diverse array of social indicators to be measured. For example, education levels, public perceptions of corruption, household income, suicide rates and charitable donations are all social indicators that help to understand the state of society. As a consequence of their breath, throughout their five decades of study, the "social indicators movement" has generated philosophical, methodological and empirical studies leading to improvements in social measurement, reporting, accounting and gauging of well-being (Ferriss 1988). The literature has considered different topologies and various social realities reflecting understanding of phenomena that are increasingly complex, interrelated, interactive and dynamic. For example, in the face of change, uncertainty and risk, normative, descriptive and predictive questions about how to establish and measure sustainable well-being are becoming an area of increased attention (Land and Michalos 2018).

Our socio-epistemological account of social indicators examines the selection of social cues by lay publics as opposed to researchers. We consider structural cues like hierarchical organisation, conversational signs like the confidence of interlocutors, and reputational cues like an expert's influence which lay publics' use to inform their epistemic vigilance, or constant low-level monitoring of testimony (Sperber et al. 2010). What sociological social indicators of well-being and socio-epistemological social indicators of trust have in common — besides attention to publics, their diversity, and experience in the world— is that both types of indicators share an important relationship to trust. Traditional social indicators investigate trust as an indicator of well-being (Bäck and Christensen 2016; Awaworyi, Churchill, and Mishra 2017), while the forthcoming works show how lay publics use social indicators to decide which experts to trust.

In both the original approach to social indicators of trust and ours, thin or generalized trust is regarded as the beliefs people hold about how others, particularly those they do not know, will act towards them (Uslaner 2002; Delhey and Newton 2005; Nannestad 2008). It can range from harm at worst to taking the interests of others into account at best (Delhey and Newton 2003). Generalized trust has the pragmatic value of acting as glue to facilitate and sustain social ties between increasingly diverse individuals and groups, for example, to help them overcome collective problems (Fukuyama 1995). Thus, generalized trust is taken to be an indicator of social cohesion, societal function and social capital (Putnam 2000).

Higher levels of generalized trust also correlate with individual and societal level benefits. For individuals, it is associated with better financial and educational outcomes, more civic engagement, and better health (e.g. Putnam 2000; Delhey and Newton 2003; Nakhaie and Arnold 2010; Dauner et al. 2015;). On a societal level, generalized trust coincides with lower crime rates, more economic growth, and more effective governance (e.g., Knack and Keefer 1997; Ritzen et al. 2000; Messner et al. 2004). Because generalized trust is crucial to the social and economic prosperity of individuals, communities and democratic functioning, it deserves to be understood in terms of how it can be fostered and maintained (Sturgis et al. 2012).ⁱⁱ

Trust engages our emotions, cognitive abilities and social competences whether we are aware of it or not. The need for trust is also ubiquitous. We believe more than we can ever fully verify or be informed about, so we trust that experts will provide us reliable information. The inter and intrapersonal dimensions of trust, and the conditions under which we extend trust, are increasingly being discussed by psychologists, sociologists, communicators and philosophers. In the philosophical literature, much of the interest in trust stems from Annette Baier's (1986) work 'Trust and Antitrust'. Here trust is articulated as a triadic relationship where a trustor (A) trusts the trustee (B) regarding some object, action, task or service (C) (236). A trusts B with respect to C where only the trustworthiness of B is a characteristic property. Though the trustworthiness of A might also be considered on moral and epistemic grounds, the cognitive evaluative tools that A uses to decide to trust B will be the focus of the following works.

Baier's account of trust has prompted further research investigating the relationship between trust and reliance (Holton 1994; Wilholt 2013; Koskinen 2018; John 2020). After all, we (A) similarly rely on the relied (B) regarding some object, action, task or service (C). However, Baier underscores the normative dimensions of trust arguing that it generates different kinds of expectations, reactive attitudes and commitments compared to reliance. For instance, feelings of betrayal occur when trust is broken in contrast to the mere disappointment which one feels when the

relied upon does not come through. Trust distinguishes itself from reliance by emphasising a sense of goodwill towards the trustor (Holton 1994), putting the trustor in a vulnerable position from which to morally appraise the trustee. This is not to say that trust and reliance are entirely separate entities as most philosophers view trust as a species of reliance but, with some separation between the two, we are able to explore examples of reliance without trust and trust without reliance.

By investigating how social indicators of trust apply to experts, this work examines the moral and epistemic reasoning that go into trust as it pertains to expertise. Epistemic trust is a disposition to believe that (B) will give us true information (C) in a situation where we are cognitively or socially vulnerable to the risk of false information (Origgi 2004). In other words, lay public community stakeholders (e.g. citizens, policy makers) have a disposition to believe that experts will provide them with reliable information because as non-experts they are in a epistemically vulnerable position. This is not to say that lay publics must trust passively: given their diverse knowledges and experiences, lay publics can (in some cases) access evidence to evaluate experts' beliefs. However, it is difficult (if not impossible) to do this for all one's beliefs.

The epistemic asymmetry between experts and lay publics with respect to trust is especially evident for trust in scientific experts. Trust in scientific experts is based on a degree of epistemic dependence. In general, lay publics lack all or some of the premises from which experts reason to their conclusions, are in an epistemically inferior position to assess the support between expert premises and conclusions, and are ignorant of many or most counter-arguments (Hardwig 1986, 96). Then from a political perspective, there is an unresolved tension between the need for science advice and the disregard for that advice in democratic policy-making (Gluckman and Wilsdon 2016) as well as ongoing debate about the appropriate normative position of science advisors within democratic governance (Douglas 2021).

Scientific experts have specialized training and knowledge which allows them to assess evidence in attempt to establish truth. Part of their knowledge comes from holding more true beliefs or relying on a higher degree of true propositions and fewer beliefs in false propositions. Expert knowledge can also include an awareness of what other experts think about these propositions, an understanding of primary and secondary questions in the domain, and a set of skills or methods to apply this knowledge to new questions (Goldman 2001, 91-92)iv. However, deciding to trust an expert does not decide which expert to trust. Where possible, experts can provide direct argumentative justification (or premises for epistemic beliefs) to support public evaluations of their trustworthiness. But given that this is not always possible, and assuming that there can be good reasons for believing experts besides factual reasons related to evidence, indirect argumentative justification including 'second-order' reasoning, is also used to determine which experts to trust.

Foundational work by Hardwig (1985), Goldman (2001) and Anderson (2011) aims at establishing second-order criteria through which publics can evaluate indicators of expert trustworthiness. Hardwig (1985) argues that these indicators can be used because it can be rational for lay publics not to 'think for themselves' and defer to experts. Goldman's (2001) argument-based evidence relies on five possible sources of trust in experts: arguments, agreement with consensus, appraisals by 'meta-experts', track-records, and interests or biases which can have second-order social cues. And Anderson (2011) puts forward, any lay person with basic instruction and an internet connection can evaluate an expert's competence and honesty to make up their mind about the expert's trustworthiness.

Though the indicators Hardwig (1985), Goldman (2001) and Anderson (2011) mention differ somewhat, epistemic authority (e.g. accreditation, recognition in the field), honesty (e.g. disclosing conflicts of interest), agreement with scientific consensus and epistemic responsibility (e.g. accountability to a community of inquirers, the peer-review process) are considered by the authors as 'epistemic' indicators. That is, these indicators rely on the cognitive abilities of publics to draw inferences from indirect information about the experts which can make a significant difference in the overall justification for accepting the truth of expert claims. What Hardwig (1985), Goldman (2001) and Anderson (2011) provide with their epistemic criteria is close to derivative authority generated from lay peoples' reasons for thinking that the source is in a good position to make the claim. In other words, that experts have enough knowledge to know the truth. However, people may not be familiar with scientometric indicators, like the number of citations or the H-index, and so they rely on other second-order indicators because in our interactions with experts we want to establish more than truth: we want to establish trust. That publics engage in trust relations with experts beyond the search for truth, can also help to explain the strong moral and emotional reactions that a breach of trust provokes in them.

Second-order social indicators of trust contribute to and are the product of social capital. Though defining social capital continues to be both a priority and a challenge (Ziersch et al. 2005, Sabatini 2015), it is referred to as all the 'features of social life' including networks, norms and values as well as the trust that allows people to act together to pursue common goals leading to behavioural outcomes (Coleman 1990; Putnam et al. 1993; Portes 1998). For example, levels of volunteering, membership in organisations and entertainment with friends and relatives can serve as indicators of social capital (Costa and Kahn, 2003). Social capital is a multidimensional construct operating at community and individual levels, though it primarily displays its effects at the micro-level or scale of individuals (Sabatini and Sarracino 2019). Social indicators of trust operate throughout and connect the frontiers of the micro, meso and macro-levels. They can be used by individuals to appraise specific experts at the micro-level during one-on-one interactions (e.g. patient-doctor conversations). The collective experiences of lay persons can be grouped for network analysis to monitor social patterns at the meso-level (e.g. particular groups being more distrustful experts). And because social indicators inform and are informed by social, political and economic forces at the macro-level (e.g. institutional affiliation or position in a hierarchy), their ubiquity spans society.

Studies in social capital have found that in the years preceding the social networking revolution, indicators of social capital, including face-to-face interaction and social trust, had declined in many democratic countries (Putnam 2002; Costa and Kahn 2003; Sarracino 2010; Bartolini et al. 2013). This is coupled with the finding that all forms of trust significantly decrease with participation in online networks (Sabatini and Sarracino 2019). In an online context, where people decide whom to trust based on second-order indicators, people are known to use the number of Twitter followers, the amount of likes a Facebook post gets, or what goes viral as indicators (however imprecise) of an expert's influence and subsequently as a social indicator of trust.

This special issue is dedicated to broadening our understanding of trust in experts through the examination of social indicators of trust as structural and cognitive reflections of social capital. Structural social capital concerns people's behaviours like their social participation in formal and informal interpersonal interactions. Cognitive social capital is made up of people's perceptions and

subsequent decisions to extend trust which can promote pro-social behaviour (Uphoff 2000). Our authors engage questions of cognition and structure by considering a broad spectrum of indicators of trust that challenge our social capacities to navigate information embedded in complex social institutions as well as our accompanying social, moral and emotional judgements. The articles in this collection begin by analyzing social indicators of trust from a theoretical perspective by questioning boundaries, investigating relationships, enabling expert-identifying mechanisms, distinguishing types of trust, finding logic in distrust and arguing for the necessity of social values. The second half the issue focuses on how indicators manifest and are applied in practice. This part begins with a historical account followed by an investigation of the structure of independent and political institutions which brings us to a short exploration of social indicators of trust in the context of the COVID-19 pandemic.

Our theoretical discussion begins with **Gloria Origgi**'s work critiquing the boundary between epistemic and social trust as represented by social indicators of trust. Origgi argues that non-epistemic indicators (like reputation or values) can rationally contribute to our trustful attitudes in a reasonable way different from merely believing the truth. However, Origgi also recognizes that non-epistemic social indicators are fragile, and stresses the need to avoid particular biases when deferring to such indicators in order to decide which experts to trust.

Matthew Bennett proposes a further distinction between epistemic and recommendation trust. The major difference between the two being that one is based on belief and the other on action, the latter having more demanding conditions. In response, Bennett argues that more is needed when lay publics are asked not only to believe experts but to act on their recommendation because they need to establish whether the recommendation aligns with what is important to them.

In an examination of compatibility amongst types of trust between experts and lay publics, **T.Y. Branch** investigates the role and communication of values in science as social indicators of trust. By following the history of the value-free ideal in a Western context throughout science education and communication, Branch argues that this predominant ideal's restriction and presentation of mostly epistemic values is antithetical to establishing 'enhanced' epistemic trust, where scientists take lay publics' non-epistemic values into consideration in response to inductive risk.

Ben Almassi's work engages the philosophically rich space between belief formation and testimonial utterances, emphasizing the ethics of trust realized through goodwill and responsiveness. Like many of the authors in this special issue, he avoids reducing trustworthiness to reliability, arguing that explicitly relational views are relevant for both personal relationships as well as expert trustworthiness. Almassi urges us to consider affectively positive, neutral and negative dimensions that can make a difference for expert trustworthiness.

Further in terms of expert trustworthiness, the traditional view is that status is a proxy for competence and service-oriented-intention. But under a more skeptical account, status can be seen as an indicator of collective egoism and not a sign of trustworthiness. Status distrust has in response been seen as a manifestation of irrationality. **Hugh Desmond** argues in favour of logical 'status distrust', especially as lay publics with lesser epistemic status are objectively in a more vulnerable position than those with a higher status. Desmond proposes that experts should place greater emphasis on demonstrating trustworthiness instead of taking it for granted.

To close our theoretical discussion, **Charles Lassiter** attributes the risk of misidentifying experts and endorsing false beliefs (at least some of the time) to the malfunctioning of culturally evolved mechanisms in faulty epistemic contexts. This can occur without lay publics actually having failed any epistemic obligations. Lassiter identifies three background conditions (success criteria, property identification and causal connection) which when satisfied, enable expert-identifying mechanisms to function properly. If any of them fail, the likelihood of identifying a non-authority as authoritative is increased.

After conceptualising the possibilities of social indicators of trust in experts, we take a more applied approach with Ákos Szegöfi and Christophe Heintz who pick-up on the importance of culturally evolved mechanisms and investigate how they can apply to institutions. Szegöfi and Heintz explore how epistemic vigilance can be outsourced in a historical context by examining newspaper presses as social institutions. They argue such institutions have evolved to evaluate the epistemic value of communicated information and adopt the psychological capacities of epistemic vigilance. Motivating factors for this include people's preference for accurate and reliable information, their ability to assess these communications as well as contingent historical factors that make it worthwhile (or not) to maintain institutions of epistemic vigilance.

In a Nordic cultural context, **Torbjørn Gundersen** and **Cathrine Holst** explore how publics assess the trustworthiness of science advice mechanisms where scientists are expected to inform public policy making. Gundersen and Holst argue that the possession of relevant expertise, justified moral and political considerations, as well as proper institutional design are all conditions for trustworthy science advice. The authors conclude that science advisory committees are trusted without being entirely trustworthy, and even if science advice is not entirely trustworthy, its surroundings help to make it so.

Lastly, in a turn towards contemporary developments, we conclude with analyses of social indicators as they pertain to the work produced by scientific experts during the COVID-19 pandemic. To begin, **Tarun Kattumana** explores the role of social indicators with respect to vaccine hesitancy. Kattumana does this by examining how trust intersects the '5C model' comprised of convenience, complacency, confidence, context, and communication. Kattumana shows that experts view the decision to vaccinate as a question of confidence in science whereas vaccine hesitant individuals see it in terms of trust. Kattumana proposes two social indicators used to assess experts in this case: (i) expert reaction to hesitant concerns and (ii) the loss of freedom in relation to vaccine requirements.

Carlo Martini, Monica Consolandi, Davide Battisti and Federico Bina investigate some of the problems that knowledge brokers face when communicating in times of crisis. For example, communicating scientific information during an emergency involves greater responsibility because of the immediate risks of communicating false positive or negative information. In a case study of Italian scientist-communicators, Martini et al. recount the experiences of scientists during the pandemic and how their role as trustworthy expert (or knowledge broker) was perceived during this exceptional time.

In conclusion, trust in experts is not blind trust. Nor is trust in experts mere reliance on epistemic credentials. Trust in experts is established through the evaluation of social information that surrounds the experts, their commitments, values, relationships, institutions and circumstance. In

this sense, our evaluation of an expert is neither purely epistemic nor purely individualistic: rather it takes place in a rich social context which we are dependent on. This special issue furthers the understanding of non-experts' decisions about whom to trust by providing an introduction on how lay publics use social indicators to trust. We do so from theoretical and practical angles as well as descriptive and normative positions. We enlarge the traditional epistemic dimensions of the expert-novice problem to capture second-order indicators of trust in order to further contextualise, and even humanize, trust in experts. Though our survey of social indicators of trust in experts could not possibly cover all relevant and deserving dimensions of study, we are confident it will spark further questions and make robust interdisciplinary connections in a communal attempt to understand how social indicators of trust can and should manifest.

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¹ The first international academic journal *Social Indicators Research* published its introductory volume in 1974. The number of articles the journal publishes each year has grown almost 18 times since its debut - 18 articles were published in 1974 compared to 314 articles in 2019 (Kumar et al. 2022).

^{II} Part of what still needs to be investigated with respect to generalized trust is the unresolved 'chicken-and-egg' problem. Causal questions remain unanswered in most theories and empirical findings (Delhey and Newton 2003). In effect, whether conceptually or empirically, when we study trust and another variable, the causal relationship between them remains unclear.

iii Goldman (2001) makes a distinction between exoteric statements which are accessible to laypublics and semantic/epistemic esoteric expert statements which are not accessible. Goldman also makes the assumption that most expert statements are esoteric or not accessible but notes that the epistemic status of statements can change and become accessible.

^{iv} Anyone with thorough knowledge of the existing evidence and differing views of those in the field might also be deserving of the expert title, albeit in a weaker sense.