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Epistemic Humility and the Social Relevance of Non-Knowledge

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In their paper, Parviainen, Kosiki, and Torkkola (2021) take as their point of departure the epistemic paradox of the need for scientific knowledge for evidence-based political decision-making in situations when science has no answers. This ties in with the observation that “making decisions under unavoidable ignorance requires new forms of justification, rationality, legitimation and monitoring consequences” (Parviainen, Koski and Torkkola 2021, 2). Parviainen, Kosiki and Torkkola (2021) identify Finland’s management of the coronavirus pandemic as an example of this kind of decision-making situation. The continuous transformation of non-knowledge into knowledge is the central process underlying political decision-making during the pandemic and other crisis situations.

Based on their observations of Finnish politicians’ and government’s decision-making at the beginning of the coronavirus pandemic, the authors suggest and develop the theoretical concept of epistemic humility. Epistemic humility characterizes political decision-making that recognizes non-knowing as a central condition. Such decision-making takes into account the diversity of spheres that can be affected by the consequences of decisions and it is sensitive to the non-linearity of those consequences (Parviainen, Koski and Torkkola 2021, 9).

The concept of epistemic humility is related to a core issue that has been raised in ignorance studies: how decisions can be taken when sound knowledge is not available. The term provided by Parviainen, Kosiki, and Torkkola (2021) describes and conceptualizes phenomena that have been discovered and described by several authors who studied decisions taken in spite of ignorance (Böschen and Wehling 2004; Böschen et al. 2004b; Collingridge 1980; Böschen et al. 2010; Bleicher 2012; Gross and Hoffmann-Riem 2005; Gross 2018).

For my reply to the authors’ conceptual suggestion, I have selected four points that I believe have the potential to be further developed. These points are:

- Dynamics of non-knowledge—intentionality and politization;
- Epistemic humility between overconfidence and epistemic arrogance—a field of tension;
- Scope of epistemic humility—individual attitudes, strategies of collective decision-making, or both?;
- ‘Back stage’, ‘front stage’—where non-knowledge can, must be, and is acknowledged.

For each of these points I will outline how I understand the authors’ idea and then present my own thoughts and indicate further directions for conceptual development, supported by references to the respective research.

Dynamics of Non-Knowledge—Intentionality and Politization

At the core of epistemic humility is a consideration of scientific non-knowledge (or experts' non-knowledge) about phenomena and developments (e.g. the spread of the SARS-CoV-2 virus) and about the consequences of political decisions (e.g. attempts to limit the spread of the virus). The taxonomy suggested by Beck and Wehling (2012) as well as the stages of knowns and unknowns used by Parviainen, Koski and Torkkola (2021, 6) refer to scientific non-knowledge and its dynamics and transformations into knowledge. Epistemic humility is about dealing with the stages and dynamics of scientific non-knowledge in political decision-making. Epistemic humility is, however, also about the non-knowledge of political decision-makers. The assumption is that normally politicians intentionally ignore knowledge and remain in the state of non-knowledge in order to avoid the risk of being blamed (Parviainen, Koski and Torkkola 2021, 8).

Epistemic humility, in turn, enables the development of a regime of futurity that allows politicians and others to be prepared for future criticism. It is assumed that such regimes expand the political playing field and prevent politicians from being blamed for decisions taken under the condition of ignorance (Parviainen, Koski, and Torkkola 2021, 8). These considerations are related to the study of ignorance in three ways.

First, the phenomenon of blaming hints at the constitutive role that ignorance plays in society. The constitutive role of non-knowledge in society as well as its positive and negative perceptions have long been discussed in sociology with regard to diverse phenomena, such as secrets (Simmel 1908; Moore and Tumin 1949; Mair, Kelly, and High 2012), professional specialization, privacy, and trust (Bammer and Smithson 2008; Smithson, Bammer, and the Goolabri Group 2008), forgotten knowledge (e.g. Douglas 1995), or the right not to know such as in the context of genetic diagnoses (e.g. Wehling 2006). Given the constitutive role of non-knowledge, it would be important to study the extent to which other related effects and phenomena are relevant for epistemic humility. Like, for instance, how trust relates to epistemic humility—is it a condition or consequence?

Second, the constitutive role of non-knowledge relates to the diversity of structures and mechanisms that underly the non-knowledge of politicians. Intentionality of non-knowing is just one of them (Beck and Wehling 2012; Parviainen, Koski and Torkkola 2021). With regard to epistemic humility, it would be important to distinguish more precisely the reasons for this ignorance. In terms of blaming and attributing responsibility, it makes a difference if

- a) Someone was not interested in knowing something (e.g. because of professional interests) (Parviainen, Koski, and Torkkola 2021, 7);
- b) Knowledge was actively denied (Parviainen, Koski, and Torkkola 2021, 7);
- c) Someone was convinced that they knew something but in effect did not know (Haas and Vogt 2018, 19), or;
- d) Knowledge did partly exist but it was not available due to organizational structures, processes, and routines (e.g. Dedieu, Jouzel, and Prete 2018).

Several authors have pointed to the fact that people might have good reasons for not wanting to increase their knowledge (e.g. Mair, Kelly, and High 2012; Stewart 2018). As such, the further development of the concept of epistemic humility must also take into account the reasons behind a person's ignorance.

Third, Parviainen, Kosiki, and Torkkola (2021) identified the temporality and rhythm of knowledge production as the central frame for epistemic humility and suggest that it drives decision-making in times of crisis such as the COVID-19 pandemic. The underlying assumption is that experts (scientists) actively transform non-knowledge into knowledge, define research questions and adapt them to the changing situation. Politicians follow this rhythm in their decision-making (Parviainen, Koski, and Torkkola 2021, 6). Within this understanding, non-knowledge seems to be free from intentions other than a desire to react to emerging questions and new insights—at least in times of crisis. Many authors, however, have shown that non-knowledge is politicized. The rhythm of the dynamic between non-knowledge and knowledge is shaped by interactive processes including diverse expert and non-expert (e.g. political) positions (Böschen and Wehling 2010; Böschen et al. 2010; Hess 2015, 2016; Stocking and Holstein 1993).

It has to be expected that the rhythm of the transformation of non-knowledge, also in moments of crisis, is politicized within expert systems and in the interaction between expert systems and other societal systems, such as policymaking. Diverse individuals and institutions categorize non-knowledge as 'partly-known', 'unable-to-know', or any other stage of non-knowledge in an interactive process. Such categorization sets priorities for the knowledge creation process (e.g. Gross 2007; Bleicher 2012; Böschen et al. 2004a; Böschen et al. 2010; Gross and Bleicher 2013) and also defines which non-knowledge will be maintained (Frickel et al. 2010; McGoey 2012).

The rather optimistic view presented by epistemic humility concerning the will to transform non-knowledge into knowledge could be challenged by an analysis of pandemic-related research from different countries. Analyzing the topics and volume of research on the COVID-19 emergency and political decision-making could reveal how policy shapes the dynamics of non-knowledge transformation in times of crisis, and it could form the foundation for further development of the concept of epistemic humility.

Epistemic Humility Between Overconfidence and Epistemic Arrogance—A Field of Tension

Parviainen, Kosiki, and Torkkola (2021) argue that epistemic humility is characterized by the specific way in which individuals relate the rationality of their own beliefs to experts' knowledge. They differentiate it from two other attitudes found in the relationship between decision-makers' and experts' knowledge and non-knowledge: the attitude of overconfidence in scientific facts on the one hand and epistemic arrogance on the other hand (Parviainen, Koski, and Torkkola 2021, 9). Together, these three attitudes form a field of tension. *Overconfidence* in expert knowledge "is considered a form of cognitive bias in the sense that it can obstruct people from recognizing intuition" (Parviainen, Koski, and Torkkola 2021, 9). Exclusively trusting scientific facts and disregarding one's own intuition becomes a problem

when scientific knowledge does not yet exist or when scientific knowledge is ambivalent, as is the case with the COVID-19 pandemic (Parviainen, Koski, and Torkkola 2021, 10).

Epistemic arrogance, in turn, is described as a mental condition that prevents decision-makers from viewing their ideas as wrong, particularly when experts refer to evidence that contradicts their ideas (Parviainen, Koski, and Torkkola 2021, 9). The authors argue that this attitude supports ignorance of information or ideas that contradict or disprove the person's own perceptions and interests. *Epistemic humility* does not place too much trust in science in moments when scientific knowledge is uncertain, nor does it place undue importance on the ideas and perceptions of individuals.

When scientific knowledge is uncertain or not yet available, epistemic humility considers personal intuition, non-scientific knowledge, and non-knowledge as resources for decision-making. Epistemic humility does not reject experts' knowledge and continuously question the knowledge, perceptions, and interests of individual politicians. This attitude is delineated and distinguished from overconfidence and epistemic arrogance through its proactive approach towards one's own and experts' non-knowledge (Parviainen, Koski, and Torkkola 2021).

The concept of epistemic humility requires more clarity at this point. It is important to establish the point at which confidence in expert advice or reliance on one's own beliefs and knowledge becomes *overconfidence* or *epistemic arrogance*. A first step in this regard could be a more explicit examination of the relationship between *overconfidence* and *epistemic arrogance* on the one hand, and the rhythm of knowledge production on the other. The problematic aspect of *overconfidence* seems to be related to stages of unknowing in the rhythm of knowledge production, when expert knowledge is not or only insufficiently available: not-yet-known, will-be-known, unable-to-know, unable-ever-to-know (Parviainen, Koski, and Torkkola 2021, 6). Problematic aspects of *epistemic arrogance* are related to the 'known' or at least 'partly-known' stages, when proven expert knowledge does exist but is not sufficiently taken into account by decision-making individuals.

Linked in this way, it becomes clear that an assessment of the state of knowledge and non-knowledge forms the basis for judging the appropriateness of each attitude in a certain moment. However, the stage of (non-) knowledge in a particular situation cannot be determined by an individual; instead, it is an interactive process carried out by people who have diverse professional backgrounds and interests (e.g. Böschen et al. 2010; Stocking and Holstein 1993). Thus, further development of the concept of epistemic humility should take into consideration the dynamics of assessing the state of knowledge and non-knowledge, and the relevance of that state with regard to decision-making. This is especially important, because uncertain or inconclusive scientific knowledge can be considered a form of non-knowledge that is normal and widely visible in the coronavirus pandemic (Schultz and Ward 2021), but that is not well covered by the taxonomy of non-knowledge and knowledge applied by Parviainen, Koski, and Torkkola (2021). The stages not-yet-known, will-be-known and partly-known do not seem to cover situations in which different scientific disciplines provide different answers, i.e. different knowledge, about the same phenomenon, thereby potentially creating uncertainty around decision-making and its consequences.

Epistemic Humility—Individual Attitude, Collaborative Decision-making Strategy, or Both?

According to the authors, epistemic humility refers primarily to an epistemic attitude that can underlie individuals' decision-making in crisis situations. This attitude is characterized by the specific way in which individuals relate to “the truth or rationality of their own beliefs compared to experts' knowledge on the subject matter” (Parviainen, Koski, and Torkkola 2021, 2). Individuals with this attitude acknowledge the limits of their knowledge and of expert knowledge, they are aware that their non-knowledge can cause danger and harm, and they accept and tolerate unknown, uncertain, ambivalent, or uncontrollable dimensions as relevant considerations in decision-making processes (Parviainen, Koski, and Torkkola 2021, 9). Epistemic humility is understood as a proactive attitude that allows individual political leaders to reflectively deal with disagreement and to be open to alternative views on contested subjects (Parviainen, Koski, and Torkkola 2021, 10).

The authors also use the term epistemic humility to describe the collective endeavor of political decision-making that actively recognizes non-knowing as a central condition. Within this understanding, epistemic humility takes into account the diversity of spheres that can be affected by the consequences of decisions, and is sensitive to the non-linearity of those consequences (Parviainen, Koski, and Torkkola 2021, 9). In the context of Finland's policies for tackling the coronavirus pandemic, the authors identified two major strategies that allowed for collective decision-making based on the attitude of epistemic humility.

First, the Emergency Powers Act was used in a reflexive way that involved a continuous re-evaluation of the available knowledge and consequent readjustments to the decisions taken (Parviainen, Koski, and Torkkola 2021, 7). Second, the government “focused on anticipating and assuming potential errors in crisis management” (Parviainen, Koski, and Torkkola 2021, 8).

In line with other authors (e.g. Bleicher 2012; Kuhlicke 2018; Lau 2009), Parviainen, Koski, and Torkkola (2021) argue that blame is an important aspect when it comes to decision-making in conditions when not everything is known (ignorance) and, they argue, as a collective decision-making mode epistemic humility can prevent or at least minimize the risk of individuals being blamed (Parviainen, Koski, and Torkkola 2021, 7). This hints at the crucial relationship that exists between individual attitudes and collective decision-making: It is the government's reflexive use of the Emergency Powers Act and the anticipation of potential crisis management errors that enables the prime minister to openly acknowledge non-knowledge in media statements (Parviainen, Koski, and Torkkola 2021). Thus, the individual's attitude of epistemic humility is bolstered by a framework that allows for such an attitude.

The relationship between these two dimensions is, however, not explicitly discussed by Parviainen, Koski, and Torkkola (2021) and it is worth specifying. What are the connections between individual attitudes and collective decision-making strategies characterized as epistemic humility? How are they interrelated? How do they influence one another? Under what conditions can individual attitudes of epistemic humility influence collective decision-

making? Can individual epistemic humility affect collective decision-making that is not based on epistemic humility?

Frameworks that enable decision-making despite ignorance could be tied in with research that has already revealed the structural conditions that facilitate decision-making based on an open acknowledgement of non-knowledge. That research highlighted elements such as:

- 1) Clear agreements about context-specific reasons that can be used to justify decisions made despite non-knowledge;
- 2) A shared understanding about the conditions under which failures—or unfavorable developments—are considered unavoidable;
- 3) Active awareness-raising about non-knowledge within the group of decision-makers (e.g. establishing routines such as regular discussions about knowledge gaps);
- 4) Strategies for correcting decisions (e.g. time limits on legislation) (e.g. Bleicher 2012; Bleicher and Gross 2016, 2011);
- 5) Being aware of minor changes and divergences that might indicate unfavorable developments (Weick and Sutcliffe 2007), and;
- 6) Continuous involvement of actors representing diverse interests and views related to the issue at hand (Gross and Hoffmann-Riem 2005; Gross 2018).

There has not yet been enough research on the influence of individual attitudes on the configuration and formation of frameworks that enable decision-making despite ignorance or with an attitude of epistemic humility. It could be worth linking this with research on leadership styles in management and policy (Parviainen, Koski, and Torkkola 2021; Stewart 2018) in order to study this relationship and strengthen the explanatory value of the epistemic humility concept in this regard.

‘Back Stage’, ‘Front Stage’—Where is Epistemic Humility Relevant?

Parviainen, Koski, and Torkkola (2021) developed the concept of epistemic humility based on an analysis of public statements and announcements made by the Finnish prime minister. The analysis revealed that at press conferences the prime minister more freely acknowledged non-knowledge related to the governments’ decisions than was the case in government documents. In such documents, decisions were supported with the available knowledge. The authors further show that over time non-knowledge became less visible in the prime minister’s public appearances (Parviainen, Koski, and Torkkola 2021, 7). These observations led me to consider whether the concept of epistemic humility should distinguish between ‘back stage’ and ‘front stage’ political action.

The ‘back stage’ and ‘front stage’ metaphor was invented by Erving Goffman (1956) and has been taken up by various researchers. It has been used in studies of political issues, such as the mingling of formal, visible policymaking and the “less visible interventions of ‘informal’

agents” (Arts and van Tatenhove 2002, 64), or the mutual influence between the audience-oriented, ‘front stage’ performance of political roles and the ‘back stage’ communication that is usually concealed from the public (Berrocal 2014). The approach of Steven Hilgartner (2000) could also provide inspiration in this regard, as he used the ‘back stage’ and ‘front stage’ metaphor to reveal processes of concealing and opening in the making of scientific knowledge and expert advice. If this metaphor was applied to the communication of non-knowledge and the related justification of decisions taken in spite of ignorance, it could enrich the further development of the concept. Related questions could include: Does epistemic humility apply to ‘back stage’ as well as ‘front stage’ and does it apply differently to each? Is epistemic humility a concept and attitude that characterizes a specific form of policy communications? What allows or impedes politicians to adopt such an attitude in public appearances or ‘back stage’ with other politicians and experts? How are ‘back stage’ and ‘front stage’ epistemic humility interrelated and how does this relate to questions about responsibility and blame?

Epistemic Humility—A Concept For Crises: What If the Crisis Never Ends?

Epistemic humility provides a conceptual answer to the question: How can decisions made in the face of unavoidable ignorance be justified and legitimized? The concept, as defined by Parviainen, Kosiki, and Torkkola (2021), focuses specifically on crisis situations and takes into account the post-crisis future. Management strategies that have been identified and framed by the authors as expressions of epistemic humility—notably, the anticipation of management errors—take into consideration the fact that questions regarding responsibility will be raised and have to be answered after the crisis (Parviainen, Koski, and Torkkola 2021, 9-8). This means that an important framework condition for epistemic humility is an intersubjectively defined ‘End’ to the crisis situation. The End-of-crisis definition will be politically and socially negotiated, and it could be a specific challenge for epistemic humility.

Research related to ecological design and the implementation of new technologies provides examples of how such Endpoints can be defined. It reveals some of the strategies and approaches that can be used to specify the end of the period during which it is acceptable to make decisions on the basis of incomplete information. Here are just a few examples: temporally limited contracts e.g. for the right to use natural resources such as groundwater for innovative energy technologies (Bleicher and Gross 2016), or the definition of a specific runtime for ecological restoration projects (Bleicher 2012; Bleicher and Gross 2011).

It would be important to further investigate how the End of a crisis situation is (and can be) defined in the political arena. A comparative analysis of the policies related to the COVID-19 pandemic in different countries could deliver valuable insights in this regard, as well as help to answer many of the other questions I have raised here. It seems to be an appropriate field of study for the purpose of defining the concept of epistemic humility in greater detail.

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