FWO ALGEPI PROJECT - T1.1 Glossary of Key Terms

Author: Emine Ozge Yildirim-Vranckaert (CiTiP-KUL)
Contributors: Adelaida Afilipoaie (imec-SMIT, Vrije Universiteit Brussel); Aina Errando (imec-SMIT, Vrije Universiteit Brussel); Heritiana Ranaivoson (imec-SMIT, Vrije Universiteit Brussel); Aaron Hyzen (UAntwerp-AMSoC); Steve Paulussen (UAntwerp-AMSoC); Hilde van den Bulck (UAntwerp AMSoC); Aleksandra Kuczerawy (CiTiP-KUL); Peggy Valcke (CiTiP-KUL); Bruno Lefevre (ULB-ReSIC); Louis Wiart (ULB-ReSIC); Raphael Tuor (UFribourg-Human-IST); Bruno Dumas (UNamur-NADI); Michelle Kulig (UFribourg-DCM); Manuel Puppis (UFribourg-DCM).

This document represents an initial output from the collaborative efforts of the FWO project on **Understanding Algorithmic Gatekeepers and Promoting Epistemic Welfare (ALGEPI).** Work package 1 (WP1) titled **'Conceptualising Epistemic Welfare and Algorithmic Gatekeepers'** is led by the KU Leuven Center for IT and IP Law. All participating consortium partners have been collectively assigned to contribute to Task 1.1 under WP1, which focuses on establishing normative theories underpinning epistemic welfare. Amongst various expected deliverables, this document serves as our preliminary contribution, offering a shared understanding of constitutive elements of epistemic welfare with a **glossary** of key terms in epistemic welfare.

Naturally, this document is subject to continuous updates and refinements as our consortium progresses with its research activities. The definitions provided below will be revised and enhanced to reflect our ongoing work and findings.

Epistemic Welfare refers to the conditions and capabilities necessary for individuals and groups to exercise their epistemic agency. These conditions mainly refer (but are not limited) to the equitable distribution of knowledge, and to the access to the tools allowing to produce and engage with such knowledge through transparent processes that are vigilantly evaluated, taking ethical considerations into account, for accuracy, fairness, and accountability to prevent biases and discrimination in knowledge acquisition. Capabilities allow individuals and groups to engage with, contribute to, and influence the processes of knowledge production, modification, and dissemination within specific epistemic communities or broader societal contexts proactively, deliberately, and autonomously. Knowledge transcends mere information by incorporating an individual's subjective perception and experiences.

Epistemic Agency refers to the capacity of individuals or groups to proactively, deliberately, and autonomously engage with, contribute to, and influence the

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processes of knowledge production, modification, and dissemination within specific epistemic communities or broader societal contexts. Drawing on Dotson's (2012) work, it involves the ability to persuasively utilize and, when necessary, revise shared epistemic resources, highlighting the authority and autonomy agents have in shaping their beliefs. Sosa (2013) extends this understanding by emphasizing the intentional quest for truth and the harmonious interplay between an agent's competences and the environment, underlining the significance of intentional actions in this process. Coeckelbergh (2022) further broadens the concept's scope in the context of democracy and technology, stressing the critical navigation and shaping of political beliefs in a world increasingly steered by technological advancements, particularly artificial intelligence. Thus, epistemic agency is best described as the proactive, deliberate, and autonomous oversight individuals exert over their belief structures, encompassing both individual and collective realms, deeply rooted within evolving sociotechnical and epistemological terrains.

- **Epistemic Accessibility** refers to the extent to which individuals and groups can readily access, comprehend, and utilize information and knowledge. In the field of computer science, epistemic accessibility involves the usable, easy to learn, effective, efficient and satisfying representation and processing of information in AI systems, ensuring that these systems are understandable and usable for all users (Sanchez et al. 2022). In human-computer interaction, it reflects in the design of digital interfaces that consider various human factors to make technology comprehensible and operable for a diverse range of users (Sonderegger et al. 2019).

- **Epistemic (Algorithmic) Transparency** refers to the ethical and clear disclosure of the processes, data, and methodologies behind algorithms. This transparency addresses several ethical concerns, such as the risk of inconclusive evidence due to reliance on correlation rather than causation, the problem of inscrutable evidence or opacity where users cannot access or understand the data and algorithms used, and the issues of misguided evidence leading to unfairness, discrimination, inaccuracy, and a lack of accountability in algorithmic decision-making (Mittelstadt et al. 2016). Additionally, in the economic literature, transparency is key to understanding the welfare effects of discrimination and the obligations related to it (Kraemer et al. 2017). Thus, epistemic transparency in the context of algorithms is about ensuring that these systems are used ethically and fairly, with an open, accessible, and accountable approach

that allows for understanding and critical scrutiny by all stakeholders involved.

- **Epistemic Agent** refers to an individual or an organization (i.e. media, online platforms) with the capacity to influence and manipulate elements within their knowledge environment, employing their material agency to assert control over background features. This concept underscores the proactive role individuals play in shaping their epistemic surroundings (Singh 2022), highlighting the spectrum of influence epistemic agents can exert,_from constructive contributions to detrimental impacts within knowledge production and dissemination.

- **Epistemic Fairness** refers to the principled distribution of knowledge, with a specific focus on its equitable sharing and dissemination, particularly in science communication (Medvecky, 2018). He underscores that "how knowledge is imparted fairly and equitably" is crucial, thereby intertwining fairness and justice with the domains of science and knowledge. Medvecky also introduces the concept of "distributive justice" in knowledge, explaining that in a context of scarce resources—where not everyone can obtain as much as they want or need—distributive justice provides criteria for determining equitable allocation. Furthermore, Medvecky addresses the issue of credibility, implying its essential role in establishing epistemic fairness. In computer science, achieving epistemic fairness via Machine Learning is encapsulated in "fair-ML," with Selbst et al. (2019) suggesting criteria to address ethical issues, encompassing fit to social context, impact predictability, robustness in fairness, accurate modelling and inclusive framing.

- **Epistemic Injustice** refers to the unjust distribution and access to knowledge, information, and the resources necessary for understanding and articulating one's experiences, rooted in identity-based prejudices and societal marginalization. As identified by Fricker (2007), this injustice manifests in two primary forms: testimonial injustice, wherein an individual's credibility is unduly devalued due to factors such as race or gender, and hermeneutical injustice, occurring when marginalized groups lack the conceptual tools to make sense of their experiences. Medvecky (2018) expands on this by framing epistemic justice as the fair and equitable distribution of knowledge, underscoring the importance of addressing these disparities. To counteract these injustices, Fricker proposes the cultivation of "epistemic virtues" such as open-mindedness, which

contribute to fairer knowledge practices and affirm the dignity of individuals as knowers.

- **Epistemic Trust** refers to the confidence in the accurate, reliable, and ethical dissemination and processing of information. In computer science, as highlighted by Sanchez et al. (2022), epistemic trust involves trust in the representation and processing of information in AI systems. In human-computer interaction, epistemic trust is about maximizing human factors related to the trust of the user in the system in digital system design (Sonderegger et al. 2019). In the broader societal context, epistemic trust also includes collective responsibility for managing information access and tackling issues like algorithmic biases and misinformation (Afsar et al. 2022). Furthermore, it distinguishes between the individual's responsibility for their epistemic health and a group's, such as a society's or a country's, collective responsibility in ensuring a healthy information ecosystem.

Epistemic Communities refers to a network or community "with recognized expertise and competence in a particular domain and an authoritative claim to policy relevant knowledge within that domain or issue area" (Haas, 1992). Both Price & Price (2023) and Cross (2012) have positioned a broader and more continuous notion of epistemic community that focuses on the fundamental knowledge and knowledge systems that underpin a community.

Epistemic Crisis refers to a profound disruption in the established methods and norms of generating, validating, and trusting knowledge within a society, particularly affecting democratic societies that rely on informed citizenry and transparent governance. This crisis is marked by a pervasive distrust in institutions, political figures, and media, as well as a shift towards emotional responses and subjective beliefs over rational analysis and objective facts, leading to a destabilized public sphere and an uncertain future for democratic processes. Dahlgren (2018) highlights that this crisis has been fuelled by decades of sophisticated deception by power elites, the decline of traditional journalism, the rise of alternative digital media, and the intensification of ideological echo chambers.

Epistemic Paternalism refers to the intentional act of intervening in individuals' knowledge acquisition and belief formation, often without their explicit consent, aiming to improve their epistemic standing. Elaborated by Goldman (1991), this concept manifests through various tactics including providing unsolicited information, withholding information, using deception, or implementing coercive

measures. Unlike traditional paternalism focused on practical benefits, epistemic paternalism centres on cultivating accurate beliefs and deep understanding, valuing knowledge improvements intrinsically. Bullock (2018) distinguishes between Eudaimonic Epistemic Paternalism, which relates epistemic improvements to overall well-being, and Strict Epistemic Paternalism, which prioritizes the intrinsic value of knowledge improvements, requiring genuine motivation for epistemic enhancement without causing overall harm. Practical examples span from legal evidence procedures and education to advertising regulations and medical treatments. In digital spaces, algorithmic gatekeepers, particularly social media platforms, exhibit epistemic paternalism by curating information to enhance users' knowledge, occasionally contradicting their preferences, as discussed by Rubel et al. (2021). While aiming to foster knowledge and societal well-being, epistemic paternalism can also challenge individual autonomy, highlighting the need for a balance between guided knowledge improvement and epistemic autonomy.

- **Epistemic Autonomy** refers to an individual's right to freely seek and understand knowledge without outside interference. It emphasizes the individual's right to not just learn, but to question and form beliefs without external pressure, as explained by Bullock (2018). Respecting this autonomy means valuing a person's ability to direct their own learning journey. This idea contrasts with epistemic paternalism, where there's intentional, sometimes non-solicited, intervention in a person's learning, believed to be for their own good. While epistemic autonomy stresses individual rights and consent, epistemic paternalism weighs the benefits of guided learning against potential rights violations. This raises questions about when, if ever, outside intervention is appropriate, and if it is, under which form.

- **Epistemic Personalisation** refers to the algorithmic processes allowing to tailor information delivery and presentation aiming to promote an individual's epistemic health. However, in ALGEPI, we also recognise the downsides of such personalisation, including, but not exhaustively, echo chambers, filter bubbles, data privacy concerns, bias in algorithms, over-reliance on algorithms, and manipulation and misinformation/disinformation. While such personalisation could promote epistemic paternalism, it also poses dangers to epistemic autonomy, highlighting the inherent importance of clarifying the line between the two.

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Epistemic Rights refer to the complex entitlements individuals have in relation to epistemic goods such as information, knowledge, understanding, and truth (Watson, 2018). These rights form the basis for justifying actions in acquiring, sharing, and using these goods and include the rights to information, to know, to hold true and justified beliefs, to understand, and to truth.

Epistemic Well-being refers to a person's "reasonably based sense that you'll be able to know what you want and need to know about the world in order for your life to go well," which encompasses three components: "access to truths; access to trustworthy sources of information; and opportunities to participate in productive dialogue." (Boyd, 2021). Reaching epistemic well-being requires striking a balance between eudaimonic aspirations,[1] emphasizing a meaningful life, and hedonistic tendencies,[2] which focus on pleasure-seeking. This balance is navigated while also considering the potential impacts on occupational health and personal well-being within the digital sphere (Quandt et al., 2022; Ryan & Deci, 2000; Almourad et al., 2021; Bodhi et al., 2022). In ALGEPI, we make a crucial distinction between epistemic well-being and epistemic welfare, the latter addressing broader societal concerns, values, and structures identified by communication practices, whereas the former is centred on individual knowledge empowerment.

[1] In this context, eudaimonic aspirations focus on acquiring knowledge and understanding for a meaningful, fulfilling life, beyond mere pleasure-seeking.
[2] In epistemic well-being, hedonistic tendencies refer to the pursuit of immediate pleasure and satisfaction in the process of acquiring and engaging with knowledge.

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