SHAPING THE AI TRANSFORMATION: THE AGENCY OF RELIGIOUS AND BELIEF ACTORS

Policy Paper

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List of acronyms

AI	Artificial Intelligence
COMECE	Commission of the Bishops' Conferences of the European Union
EC	European Commission
FBOs	Faith-Based Organisations
FRT	Facial Recognition Technology
NGOs	Non-Governmental Organisations
ODIHR	Office for Democratic Institutions and Human Rights of OSCE
OSCE	Organization for Security and Co-operation in Europe
RBAs	Religious or Belief Actors
SDGs	Sustainable Development Goals
UNESCO	United Nations Educational, Scientific and Cultural Organization

EXECUTIVE SUMMARY

In recent years, religious or belief actors (RBAs) have made their voices heard in debates over the ethics of artificial intelligence (AI) and in AI-related policy-making processes aimed at regulating AI development and deployment in accordance with fundamental rights and freedoms. At the same time, RBAs' interactions with AI technologies increasingly go beyond the voicing of ethical concerns and human rights advocacy in the field of AI governance. To various extents, diverse RBAs employ, adapt, invest in and sometimes contribute to the development of AI. In this way they become agents in the AI lifecycle, often entering into partnerships with other public and private stakeholders.

The manifold interactions of RBAs with AI technologies instantiate a more general phenomenon: the interaction between (non)-religion and various processes of social, technological, legal and political innovation. Building upon the European Commission's commitment to developing an AI ecosystem characterised by both (scientific and technological) excellence and (justified societal) trust, the actual and potential contributions of RBAs to AI innovation at the technological and governance levels can be spelled out in terms of the key concepts of engagement and agency. From this conceptual basis a series of recommendations ensues. The recommendations, which aim to guide future interactions between RBAs and AI in societally beneficial ways, are addressed to RBAs, policymakers and researchers in the fields of AI and religion.

Regarding the role of RBAs in AI-related policy-making:

− Decision makers designing national and international policy-making processes on AI should enhance existing and/or establish new consultation channels with RBAs.

− Consultations with RBAs should not be limited to high-level leaders, institutionalised actors and formal organisations, but also involve minority actors, women, LGBTQ+ persons and youth within the respective communities.

− Collaboration among different RBAs and between RBAs and other stakeholders, both governmental and non-governmental, should be strengthened with the aim of enhancing policies and advocacy on the ethics and governance of AI, in particular with regard to the protection of sensitive data and the prevention of bias and discrimination.

− RBAs should be heard not only regarding their assessments of the ethical implications of AI, but also as stakeholders in, and contributors to, the AI innovation life cycle.

Regarding religious literacy and AI literacy:

– Governmental and non-governmental actors should promote initiatives aimed at enhancing religious literacy and awareness of (non)-religious diversity among policy-makers, AI developers, businesses and other stakeholders.

– Conversely, AI-literacy among RBAs should be fostered because RBAs might use AI-involving technologies without being fully aware of the opportunities such technologies offer or the risks they pose.

– RBAs should be encouraged to consider how their interactions with AI-technologies often go beyond ethics or human rights advocacy. Processes of critical reflection upon, and taking stock of, RBAs' diverse involvements with AI technologies should be promoted.

– RBAs should consider taking on the responsibility to act as (formal or informal) educators on AI in their communities, promoting the responsible use of digital technologies and raising awareness of the ethical and social implications of AI according to shared values of freedom, dignity, equality and respect.

Regarding research and knowledge production:

– Strengthening the evidence base on how RBAs engage with AI can contribute to shaping future AI research, development and deployment in beneficial, responsible and trustworthy ways.

– Future research should address a series of so far under-researched issues, including but not limited to

  - RBAs' use of AI-involving technologies;

  - RBAs-related (mis)use of data-driven surveillance mechanisms;

  - RBAs' contributions (and resistance) to the design, development and implementation of trustworthy AI;

  - AI-related collaborations and partnerships among RBAs as well as between RBAs and other civil society actors;

  - RBAs-related implications of AI for different areas of sustainable development such as health, child protection, economy and social cohesion;

  - data-driven approaches to studying religion and belief.

INTRODUCTION

Great hopes and expectations are placed on artificial intelligence (AI) technologies, and large amounts of money are invested in AI research and development both by governments and private actors[1]. AI is widely regarded as having the potential to radically transform the lives of individuals, groups and societies for the better. Moreover, many expect that AI technologies will play a decisive role in mitigating the destructive impact of climate change on the biosphere, providing us with important tools for achieving the Sustainable Development Goals (SDGs) and shaping the post-2030 Agenda[2]. For instance, they may help predict and tackle some of the effects of climate change on ecosystems and habitats, improve agriculture, support the eradication of hunger, and increase the quality of people's health[3].

At the same time, the widespread use of AI systems raises a number of concerns. Existing AI technologies exhibit several features that pose serious threats to the protection of the fundamental rights of individuals and groups – including religious or belief citizens and communities. Such features include the opacity, unpredictability, bias and partially autonomous behaviours of AI systems[4]. It is for this reason that political institutions – including national governments, EU bodies and international organisations – have started to develop guidelines and regulations for the development of ethically legitimate AI technologies[5].

While policy actions are increasingly directed towards clear and feasible solutions that strike an evidence-based and legitimate balance between the opportunities and challenges posed by AI technologies, academic debates regarding the interaction between

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[1]   In this document the expression "development" is used for both "development aid/work/assistance/efforts (for/with/in countries, regions etc.)" and "development of AI systems". In this last respect, see the European Commission's selection of funded projects that use AI technology, 2021, https://digital-strategy.ec.europa.eu/en/news/eu-funded-projects-use-artificial-intelligence-technology.

[2]   R. Vinuesa et al., *The Role of Artificial Intelligence in Achieving the Sustainable Development Goals*, in "Nature Communications", 11 2020, 233.

[3]   "AI for Good" initiative, https://aiforgood.itu.int; 2030 Vision "AI and the Sustainable Development Goals: the State of Play", SustainAbility, 2019, https://www.2030vision.com/news/artificial-intelligence-the-potential-for-good.

[4]   AlgorithmWatch, *Automating Society*, Report. Bertelsmann Stiftung, 2019 and 2020, https://automatingsociety.algorithmwatch.org/wp-content/uploads/2020/12/Automating-Society-Report-2020.pdf.

[5]   See the European Commission's White Paper on AI, 2020, https://ec.europa.eu/info/sites/info/files/commission-white-paper-artificial-intelligence-feb2020_en.pdf; the European Commission's recent proposal for AI regulation, 2021, https://digital-strategy.ec.europa.eu/en/library/proposal-regulation-european-approach-artificial-intelligence; UNESCO's first draft of the Recommendation on the Ethics of Artificial Intelligence, 2020, https://unesdoc.unesco.org/ark:/48223/pf0000373434.

religion and AI often engage with either AI-utopian or AI-dystopian scenarios. The discussion focuses either on transhumanist ideas concerning 'singularity' [6] and technology-driven human enhancement or on apocalyptic visions of individuals and societies entirely subdued by malicious and omnipotent AI agents. Yet, while such hypothetical narratives are certainly interesting in their own right, what they depict is far removed from the actual capabilities of today's AI-powered agents and the scientific knowledge that drives them, as well as from the challenges related to AI factual implementation in society.

More pressing is the task of exploring how religious or belief actors are involved in the use and development of AI technologies, both in their practices and through their participation in debates and policy-making processes. As social actors who often enjoy a high degree of trust and societal embeddedness, they are (both as a matter of fact and potentially) important interlocutors for researchers and policy-makers alike when it comes to understanding the ways in which the development and regulation of AI can serve the needs of local communities, address the risks and limitations of current technologies, and make AI a meaningful component of the global effort for sustainable development.

This paper is an attempt to facilitate dialogue and cooperation between religious or belief actors and other stakeholders in the area of AI technologies. In the first section (Process), we present the steps leading to the conceptualisation and formulation of this paper. Building on our previous work on religion and innovation, the second section (Background) presents our conceptual framework, clarifies the adopted terminology and defines the paper's scope and main objectives. The third section (Engagement) offers an overview of the actual and potential engagement of religious or belief actors with AI, with 'engagement' understood both in terms of partnership with other stakeholders in the area of AI technologies and participation in processes that shape AI development, use and regulation. The fourth section (Agency) delineates the actual and potential space for action of religious or belief actors in all phases of the life cycle of AI with a view to highlighting and strengthening their agency.

We conclude with a set of recommendations centred around the idea that constructive dialogue among different stakeholders requires mutual learning and understanding, contextualisation and diversification in AI development. We suggest that the AI agency of religious or belief actors should be acknowledged and strengthened.

The appendix contains a list of relevant documents from our Center, as well as a list of consulted actors, experts and organisations.

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[6]   The term 'singularity' is commonly used to refer to a hypothetical point in time when AI systems will have outperformed human intelligence not just within specific domains – as is already the case today – but across the board.

1. THE PROCESS

The present paper has developed out of six years of action research at the Center for Religious Studies of Fondazione Bruno Kessler (FBK-ISR). The process leading up to it was initiated in 2016 by the adoption of FBK-ISR's mission of advancing the critical understanding of the multi-faceted relationship between religion and innovation and exploring ways to improve their interaction in contemporary societies[7]. The mission statement was then operationalised in the Center's strategic plans for 2016-2018[8] and, with a focus on the interactions between religion and AI, for 2019-2021[9]. The 2019-2021 "Religion and innovation. Gearing up for the AI revolution" strategic plan was motivated by the awareness that AI technologies are in the process of changing the workings of human societies, an awareness that also grounds FBK's 2018-2027 overall strategy "Future Built on Artificial Intelligence"[10].

FBK-ISR's mission was further articulated in the 2019 position paper "Religion and Innovation: Calibrating Research Approaches and Suggesting Strategies for a Fruitful Interaction"[11], which framed our tri-dimensional, triangular understanding of the interaction between religion and innovation and contextualised the Center's work on religion and innovation with a view to the agency of religious or belief actors in the pursuit of the United Nations 2030 Agenda for Sustainable Development. Our position paper proposed 11 recommendations addressed to researchers, policy-makers, journalists, private and public actors whose work (sometimes unwittingly) engages with the relation between religion and innovation[12].

Between 2018 and 2019 we held the workshop and lecture series "Religion and Innovation" which brought together scholars of religion and digital culture with researchers in social innovation, semiotics, media and legal studies[13]. Following up on this initiative,

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[7]   For FBK-ISR's mission statement see https://isr.fbk.eu/en/about-us/mission.

[8]   In Italian: https://isr.fbk.eu/wp-content/uploads/2017/10/2016_11_03_PS_versione_web.pdf.

[9]   https://isr.fbk.eu/en/about-us/strategic-plan.

[10]   https://www.fbk.eu/en/about-fbk/piano-strategico-2018-2027-fbk-2/.

[11]   https://isr.fbk.eu/wp-content/uploads/2019/03/Position-Paper.pdf; see also our 2019 booklet FBK-ISR, *Religion and Innovation at FBK*, https://isr.fbk.eu/wp-content/uploads/2019/09/Booklet_ISR_eng-1.pdf.

[12]   For the 2030 Agenda see https://www.un.org/sustainabledevelopment/development-agenda/. In 2020, FBK-ISR coordinated a successful application of the entire Fondazione Kessler to become a member of the Germany-based International Partnership on Religion and Sustainable Development (PaRD): https://www.partner-religion-development.org. For the 11 recommendations proposed in our position paper, see pp. 33-35, link in the above note.

[13]   https://isr.fbk.eu/en/events/religione-e-innovazione-workshop-and-lecture-series-2018.

from September 2020 until April 2021 we hosted the webinar series "Artificial Intelligence and Religion: AIR2020/21", co-organised with FBK's Centers working in the field of information and communication technology[14]. The biweekly webinars explored current interactions between research and innovation in artificial intelligence (AI) on the one hand, religious communities, institutions, practices, precepts, beliefs, and rites on the other. The series included talks of renowned speakers from AI, religious studies, anthropology, economics, legal studies, philosophy, and sociology. Its multidisciplinarity brought the richness and complexity of the research topic 'AI and Religion' into full relief, highlighting the role of religious vocabulary in popular AI narratives and techno-utopian or dystopian visions of the future of humanity, the involvement of religious actors in shaping current debates over AI governance, the impact of AI technologies on freedom of religion or belief, the value alignment problem for AI with regard to religiously grounded values, as well as the use of big data in research on religion, belief and society.

Alongside our focus on academic research, we have contributed to debates over AI governance and policies. In 2020 the Center participated in the public consultation on the White Paper "Artificial Intelligence: A European Approach to Excellence and Trust", launched by the European Commission on 19 February 2020, and the UNESCO public consultation on the ethics of AI. The preparation of our response paper to the EU consultation, "Engaging Religious and Belief Actors in the European Approach to Artificial Intelligence", involved extensive exchanges with religious or belief actors, representatives of EU institutions, AI entrepreneurs and academics working in the study of contemporary forms of religion[15]. In addition to the response paper, FBK-ISR has produced two reports: "Religious or Belief Actors and the European Commission's White Paper on Artificial Intelligence"[16] authored by Margherita Galassini and, relatedly, "Mapping Religious Nones in 112 Countries: An Overview of European Values Study and World Values Survey Data (1981-2020)"[17] authored by Dominik Balazka.

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[14] Please see https://air2020.fbk.eu for a documentation of the series, including links to videos of all episodes.

[15] See https://isr.fbk.eu/en/about-us/response-to-the-european-commissions-public-consultation-on-the-white-paper-on-artificial-intelligence for our response to the EU consultation, and https://isr.fbk.eu/en/news/detail/fbk-isrs-contribution-to-unescos-public-online-consultation-on-the-ethics-of-ai for FBK-ISR's response to the UNESCO consultation.

[16] M. Galassini, *Religious or Belief Actors and the European Commission's White Paper on Artificial Intelligence*, 2021, https://isr.fbk.eu/wp-content/uploads/2021/03/Religious_or_Belief_Actors_and_the_European_Commission_s_White_Paper_on_Artificial_Intelligence.pdf.

[17] D. Balazka, *Mapping Religious Nones in 112 Countries: An Overview of European Values Study and World Values Survey Data (1981-2020)*, 2020, https://isr.fbk.eu/wp-content/uploads/2020/07/Mapping-Religious-Nones-in-112-Countries-Report.pdf.

The drafting of the present paper has benefitted from a second round of consultations with religious or belief actors and experts in the fields of religion and AI (see the list of consulted actors and experts in the appendix) as well as from our active research EU funded projects (DIG4FUTURE, INGRID, PROTECTOR, etc.) and the research and action of FBK as a whole.

2. KEY CONCEPTS AND DEFINITIONS

The first part of this section presents some key working definitions, in particular for 'AI', 'religious or belief actors', 'engagement' and 'excellence and trust in AI' (2.1). The second part delineates key methodological considerations about bias in the fields of big data and artificial intelligence (2.2). In the third part we elaborate on our conceptual framework around the interaction between religion and innovation, explaining how we apply our triangular model to AI, religion and belief (2.3).

2.1 Working Definitions

2.1.1 Who are Religious or Belief Actors

Our use of the expression 'religious or belief actors' draws upon the adoption of the expression 'religious or belief communities' by the Office for Democratic Institutions and Human Rights (ODIHR) of the Organization for Security and Co-operation in Europe (OSCE) in its work on freedom of religion or belief[18]. We adopt the term 'actors' instead of 'communities' in order to highlight and strengthen their agency (see FBK-ISR 2019a and 2020).

Also according to the ODIHR-OSCE, and international human rights law more generally, our understanding of 'religious or belief actors' is "not limited in its application to traditional religions and beliefs or to religions and beliefs with institutional characteristics or practices analogous to those traditional views"[19]. Covering "theistic, non-theistic and atheistic beliefs"[20], it allows us to take a wide range of actors into consideration, including but not limited to: religious leaders, authorities and community members (high-level religious leaders as well as lay leaders, women and youth groups within religious communities etc.) as well as local, national and international faith and/or belief-based organisations.

While this account of religious or belief actors may be open to criticism in view of how it uses the term 'religion'[21] and with regard to the inclusion of expressly atheistic, agnostic

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[18]   Marco Ventura, the director of our Center from 2016 to 2021, in the same period was a member of the panel of experts on freedom of religion or belief of ODIHR/OSCE.

[19]   OSCE/ODIHR, *Guidelines on the Legal Personality of Religious or Belief Communities*, 2014, pp. 9-10, https://www.osce.org/odihr/139046.

[20]   *Ibidem*.

[21]   T. Asad, *Genealogies of Religion: Discipline and Reasons of Power in Christianity and Islam*, Baltimore, Johns Hopkins University Press, 1993; J. Casanova, *Public Religions in the Modern World*, Chicago - London, The University of Chicago Press, 1994; T. Mazusawa, *The Invention of World Religions: Or How European*

or nonreligious actors[22], it is in line with relevant international policy documents[23]. Appealing to this established usage, we employ the term in a non-essentialist and inclusive way and encourage the involvement of minority religious groups as well as non- and weakly-institutionalised religious or belief actors in policy-making processes around AI. Henceforth, we will use "RBAs" as shorthand for "religious or belief actors".

2.1.2   How we use the Term 'Artificial Intelligence'

We use 'artificial intelligence' as an umbrella-term to refer to a range of different but interrelated and functionally overlapping digital technologies, including systems for automated reasoning and planning, machine learning, machine translation, conversation, machine (sensory) perception and motion. What these diverse technologies have in common is that they contribute to the development of artificial agents: software agents or, in the case of robots, embodied agents that are able to gather and respond to stimuli (data), learn from their environments, perform tasks, produce outputs, and achieve goals in (instrumentally) rational ways. Overall, we adopt the definition of artificial intelligence suggested in 2019 by the European Commission's High-Level Expert Group on AI:

"Artificial intelligence (AI) systems are software (and possibly also hardware) systems designed by humans that, given a complex goal, act in the physical or digital dimension by perceiving their environment through data acquisition, interpreting the collected structured or unstructured data, reasoning on the knowledge, or processing the information, derived from this data and deciding the best action(s) to take to achieve the given goal"[24].

Examples of AI systems being employed today include systems for automated stock trading, biometric recognition of individuals, playing chess, recidivism forecasting, predictive policing, medical image analysis, content moderation on social media platforms,

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Universalism was preserved in the Language of Pluralism, Chicago - London, The University of Chicago Press, 2005; D. Chakrabarty, *Provincializing Europe: Postcolonial Thought and Historical Difference*, New Edition, New Jersey, Princeton University Press, 2007.

[22]   T.J. Coleman III - J. Jong, *Counting the Nonreligious: A Critical Review of New Measures*, in A.L. Ai - P. Wink - R.F. Paloutzian - K.A. Harris Cham (eds), *Assessing Spirituality in a Diverse World*, Cham, Springer, 2021, pp. 87-116; L. Lee, *Recognizing the Non-Religious: Reimagining the Secular*, Oxford, Oxford University Press, 2015; R. Cipriani - F. Garelli (eds), *Sociology of Atheism*, in "Annual Review of the Sociology of Religion", Leiden, Brill, 2016.

[23]   Apart from OSCE/ODIHR 2014, other international policy documents which use the expression 'religious or belief actors" include: https://www.europarl.europa.eu/at-your-service/en/be-heard/religious-and-non-confessional-dialogue/events; OCSE/ODIHR, *Freedom of Religion or Belief and Security: Policy Guidance*, 2019, https://www.osce.org/odihr/429389.

[24]   European Commission, *A Definition of AI: Main Capabilities and Disciplines*, 2019, p. 6, https://www.aepd.es/sites/default/files/2019-12/ai-definition.pdf.

personalised advertising, credit card fraud detection, conversation and automated translation. The systems employed for these tasks are narrow – as opposed to general – AI systems in that they are highly domain-specific and thus not comparable to the versatile and flexible intelligence of human beings. However, within the narrow confines of the tasks for which they are programmed, they often outperform human agents in accuracy and speed. Such performance may be ethically problematic if biases are embedded in the training data, as illustrated in the next section.

Technological innovation can occur in response to societal needs and challenges. Conversely, processes of social and cultural innovation can be triggered by the uptake and diffusion of novel technologies. Innovations in AI are therefore often inextricably linked to the social contexts in which they are envisaged, realised and adopted: they gain their societal, political and economic significance within the social fabric, including its religious components[25].

For this reason, we deliberately use the expression 'artificial intelligence' in a broad sense which, in addition to denoting the various technologies mentioned above, also covers the manifold narratives, interpretations and imageries of AI which circulate in public debates and popular culture and contribute to shaping perceptions of, and attitudes towards, AI technologies in societies.

2.1.3   How we use the Term 'Engagement'

We use the term 'engagement' in two ways. First, as 'partnership', to describe how RBAs and other stakeholders collaborate in the field of AI; second, as 'participation', referring to the various ways in which RBAs participate in shaping and using AI-based technologies. The second meaning is intended to cover the following aspects, in line with our understanding of AI as described above:

−   adoption and deployment of AI-involving technologies in religious practices, for communication purposes and outreach,

−   participation in public debates on AI ethics, regulation and policies,

−   contribution to the development of AI-involving technologies,

−   interpretations of the significance, meaning and societal impact of AI-involving technologies,

−   education and training in the field of AI literacy and, more generally, digital literacy.

Our use of 'engagement' thus encompasses the diverse ways in which the term has been used in debates and policies around the societal roles of RBAs with regard to, e.g.,

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[25]   See Recommendation 9 of our position paper, https://isr.fbk.eu/wp-content/uploads/2019/03/Position-Paper.pdf, p. 35.

interreligious dialogue and collaboration aimed at sustaining peace[26], religious actors' contributions to humanitarian interventions[27] and to development work in general[28].

2.1.4 How we use the Terms 'Excellence' and 'Trust'

Throughout this paper a key point of reference is the European Union framework on human-centric AI, in particular its core-idea of an 'ecosystem of excellence and trust in AI'[29]. However, our ambition is to make sense beyond the European Union and Europe itself. Against the backdrop of the Center's and, more generally, Bruno Kessler Foundation's long-standing involvement in European AI-related research and innovation, we acknowledge the international value of the EC's two-pronged model, which emphasises the need for an effort both at the level of trust (ethics, regulation, law) and at the level of excellence (research and innovation; business).

At the same time, our participation in international debates on AI and religion (see section 1) has convinced us that a global and inclusive approach can help question and potentially improve the European framework. Thus, in sections 3 and 4, we discuss examples that are not confined to the European context, but are key to developing a better understanding of the actual and potential roles played by RBAs in the field of AI.

2.2 Big Data and Bias

Today, one of the main resources fueling the development of AI is the widespread availability of large and unstructured data collections – known as big data[30] – used to train advanced algorithms and build complex models. To learn, AI relies on the availability of

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[26]   See, for instance, the summary report S. Berry - F. Petito, *Interreligious Engagement and Sustainable Peace*, 2018, https://www.ispionline.it/sites/default/files/pubblicazioni/interreligious_engagement_report-finallogo_def.pdf.

[27]   http://agendaforhumanity.org/sites/default/files/resources/2017/Jul/SS11-Religious-Engagement.pdf.

[28]   K. Marshall, *Religious Engagement in Development Work: a Continuing Journey*, in A. Heuser - J. Koehrsen (eds) *Does Religion Make a Difference? Religious NGOs in International Development Collaboration*, Baden-Baden, Nomos, 2020.

[29]   European Commission, *Building Trust in Human-Centric Artificial Intelligence*, 2019, https://ec.europa.eu/jrc/communities/sites/default/files/ec_ai_ethics_communication_8_april_2019.pdf.

[30]   For an overview of the concept, its main advantages and limitations, see D. Boyd - K. Crawford, *Critical Questions for Big Data: Provocations for a Cultural, Technological, and Scholarly Phenomenon*, in "Information, Communication & Society", 15, 2012, 5, pp. 662–679; D. Lazer - J. Radford, *Data ex Machina: Introduction to Big Data*, in "Annual Review of Sociology", 43, 2017, pp. 19-39; L. Resnyansky, *Conceptual Frameworks for Social and Cultural Big Data Analytics: Answering the Epistemological Challeng*e, in "Big Data & Society", 6, 2019, 1, pp. 1-12; D. Balazka - D. Rodighiero, *Big Data and the Little Big Bang: An Epistemological (R)evolution*, in "Frontiers in Big Data", 3, 2020, pp. 1-13.

a massive and constantly growing amount of data generated online. However, the characteristics of these training datasets can have severe social consequences. For this reason, a careful reflection about an ethical use of AI in contemporary societies requires also a critical understanding of big data. It is not by accident that in its white paper on AI, the European Commission confirms the will to pursue "a coordinated European approach on the human and ethical implications of AI as well as a reflection on the better use of big data for innovation"[31]. From nowcasting to algorithmic decision-making, from medical applications to leisure, the increased availability of large data collections is profoundly influencing society. It is sufficient to think, for example, about the role that contact-tracing technologies and human movement data are playing in the containment of the COVID-19 pandemic[32].

However, when the data used to train AI is biased, there is the risk of replicating pre-existing social issues in a digital form[33]. Due to algorithmic opacity and limited access, the task to promptly identify problematic outcomes is far from trivial. Over the years, researchers have assessed the existence of biases based on geographical origin[34], gender and ethnicity[35], and age[36]. Other studies lament, for example, the lack of coverage of transgender and non-binary subjects in training data[37].

Despite the scientific community's awareness of these limitations, the challenge they pose is still unsolved. Indeed, among specific sub-groups of the general population the possibility of being underrepresented, misrepresented or not represented in the data

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[31]   European Commission, *On Artificial Intelligence – A European Approach to Excellence and Trust*, White Paper, 2020, p. 1, https://ec.europa.eu/info/sites/default/files/commission-white-paper-artificial-intelligence-feb2020_en.pdf.

[32]   J. Zhang et al., *Changes in Contact Patterns Shape the Dynamics of the COVID-19 Outbreak in China*, in "Science", 368, 2020, 6498, pp. 1481-1486; G. Cencetti et al., *Digital Proximity Tracing on Empirical Contact Networks for Pandemic Control*, in "Nature Communications", 12, 2021, pp. 1-12.

[33]   A. Paullada et al., *Data and Its (Dis)contents: A Survey of Dataset Development and Use in Machine Learning Research*, 2020, https://arxiv.org/pdf/2012.05345.pdf.

[34]   S. Shankar et al., *No Classification Without Representation: Assessing Geodiversity Issues in Open Data Sets for the Developing World*, in M. De-Artega - W. Herlands (eds), *Machine Learning for the Developing World. NIPS 2017 Workshop Proceedings*, 2017, pp. 1-5, https://arxiv.org/pdf/1711.08536.pdf.

[35]   J. Boulamwini - T. Gebru, *Gender Shades: Intersectional Accuracy Disparities in Commercial Gender Classification*, in *Proceedings of the 1st Conference on Fairness, Accountability and Transparency*, 81, 2018, pp. 77-91; A. Chander, *The Racist Algorithm?*, in "Michigan Law Review", 115, 2017, 6, pp. 1023-1045.

[36]   A.S. Garcia de Alford - S.K. Hayden - N. Wittlin - A. Atwood. *Reducing Age Bias in Machine Learning: An Algorithmic Approach*, in "SMU Data Science Review", 3, 2020, 2, pp. 1-19.

[37]   M.S. Lee - L.N. Guo - V.E. Nambudiri, *Towards Gender Equity in Artificial Intelligence and Machine Learning Applications in Dermatology*, in "Journal of the American Medical Informatics Association", 2021, ocab113.

used to shape the intelligence of systems increasingly governing our everyday life is real[38].

Religious and non-religious identities play an important part in the unfolding of today's social tensions. According to a report published by the Pew Research Center[39] in 2016 social hostilities involving religion were classified as either "high" or "very high" in 54 countries. This number rises to 88 when also a "moderate" level of hostility is considered. Similarly, the latest report of Humanists International[40] claims that, as far as freedom of expression is concerned, non-religious subjects encounter "grave" or "severe" discrimination in 69 countries around the world.

While gender, age, geographical origin, ethnicity, and other characteristics of the population occupy a relevant role in the ongoing debate on AI ethics, very little is known about potential biases related to religious and non-religious worldviews. More research is therefore necessary to assess whether, to what extent, and under which conditions these characteristics do or do not affect the outcomes of algorithms. On one side, this presupposes a critical assessment of the position occupied by RBAs within the training datasets. On the other, following the growth of non-religious preferences in Europe[41] it requires a broader understanding of the very notion of belief. In other words, data needs to be problematized. Adopting the metaphor of "broken data"[42] datasets can be conceptualized as standing in need of critical evaluation, processing and repair. Since political actors, journalists, and other data outsiders tend to rely on an inflated understanding of data quality[43] this conceptual transition paves the way for a more realistic and more attentive approach to the problem. As Sara Hooker rightly points out[44], bias can occur at any stage of the process. In fact, data is not the only source of bias. In this sense, it is important to keep in mind that by itself better data is not sufficient to guar-

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[38]   B. Lepri et al., *Fair, Transparent, and Accountable Algorithmic Decision-making Processes: The Premise, the Proposed Solutions, and the Open Challenges*, in "Philosophy and Technology", 31, 2018, 4, pp. 611-627.

[39]   Pew Research Center, *Global Uptick in Government Restrictions on Religion in 2016*, 2018, https://www.pewforum.org/2018/06/21/global-uptick-in-government-restrictions-on-religion-in-2016.

[40]   Humanists International, *The Freedom of Thought Report*, 2020, https://fot.humanists.international.

[41]   L. Lee, *Secular or Nonreligious? Investigating and Interpreting Generic 'Not Religious' Categories and Populations*, in "Religion", 44, 2014, 3, pp. 466-482; R.T. Cragun - K. McCaffree, *Nothing Is Not Something. On Replacing Nonreligion with Identities*, in "Secular Studies", 3, 2021, 1, pp. 7–26D.

[42]   S. Pink - M. Ruckenstein - R. William - M. Duque, *Broken Data: Conceptualising Data in an Emerging World*, in "Big Data & Society", 6, 2018, 1, pp. 1-13.

[43]   J. Baldwin-Philippi, *Data Ops, Objectivity, and Outsiders: Journalistic Coverage of Data Campaigning*, in "Political Communication", 37, 2020, 4, pp. 468-487.

[44]   S. Hooker, *Moving Beyond "Algorithmic Bias is a Data Problem"*, in "Patterns", 2, 2021, 4, pp. 1-4.

antee a fair outcome. Nevertheless, building better rather than just bigger training datasets is one of the necessary steps forward on the way towards trust and excellence in AI, in Europe and beyond.

From this perspective, to build an "ecosystem of trust" and an "ecosystem of excellence"[45] is, among other things, a way to embed fairness in the algorithmic processes surrounding us. However, fairness requires a culture of transparency and accountability. This necessity is further reinforced by the private nature of big data. Largely concentrated in the hands of a small number of private companies, big data has considerably reshaped the power dynamics involved in the process of knowledge discovery[46]. The problem at hand is not just how to actually establish a virtuous circle of trust and excellence, but also how to preserve it in the long run. The ability of political actors to define a normative framework capable of promoting the critical understanding of data, transparent and comprehensive evaluation processes, and fair outcomes will be crucial. Regarding RBAs, this requires a deeper understanding of the interplay of various political, technological and socio-cultural factors mediating the relationship between AI and this peculiar type of userbase.

2.3 Religion and Innovation

Our approach in this paper is guided by the idea that interactions between religion and AI can be usefully understood as instantiating a more general phenomenon, i.e., the interaction between religion and various processes of innovation. We thus build upon the conceptual framework on religion and innovation presented in our 2019 position paper[47] and further developed in subsequent work[48]. Based on a broad understanding of innovation which covers social, cultural, political, legal, economic, business and technological transformation processes, and appealing to an inclusive, non-essentialist, understanding of religion or belief (see sec. 2.1.1 above), we distinguish between three aspects of the interaction between religion and innovation:

Innovation in Religion: this concerns the ways in which RBAs adopt, employ, practice, interpret and assess innovation within their diverse religious frameworks.

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[45]   European Commission, *On Artificial Intelligence – A European Approach to Excellence and Trust*, White Paper, 2020, p. 1, https://ec.europa.eu/info/sites/default/files/commission-white-paper-artificial-intelligence-feb2020_en.pdf.

[46]   D. Balazka - D. Rodighiero, *Big Data and the Little Big Bang: An Epistemological (R)evolution*, in "Frontiers in Big Data", 3, 2020, pp. 1-13.

[47]   https://isr.fbk.eu/wp-content/uploads/2019/03/Position-Paper.pdf.

[48]   B. Rähme, *Religion and Innovation: Charting the Territory*, in *Handbook of Alternative Theories of Innovation*, ed. by B. Godin - G. Gaglio - D. Vinck, Cheltenham - Northampton, Edward Elgar Publishing, 2021.

Religion in Innovation: this refers to the ways in which RBAs contribute to various innovation processes in the society at large, i.e., to the agency of RBAs within social, economic, technological etc. innovation.

Religion of Innovation: this denotes the various ways in which (technological, social, cultural etc.) innovation has itself turned into a field of practice and belief that resembles religious patterns, including firm beliefs, rites and community bonds.

INNOVATION IN RELIGION

How is innovation being understood, experienced and practised within re-ligious traditions and communities of faith or belief?

RELIGION IN INNOVATION

How do religious traditions and communities of faith or belief contribute to innovation in the areas of culture and society, science and technology, politics and the law?

RELIGION OF INNOVATION

Has the vocabulary of innovation itself become a rhetorical vehicle for quasi-religious discourses? Has innovation itself turned into a belief system and become a sort of religion?
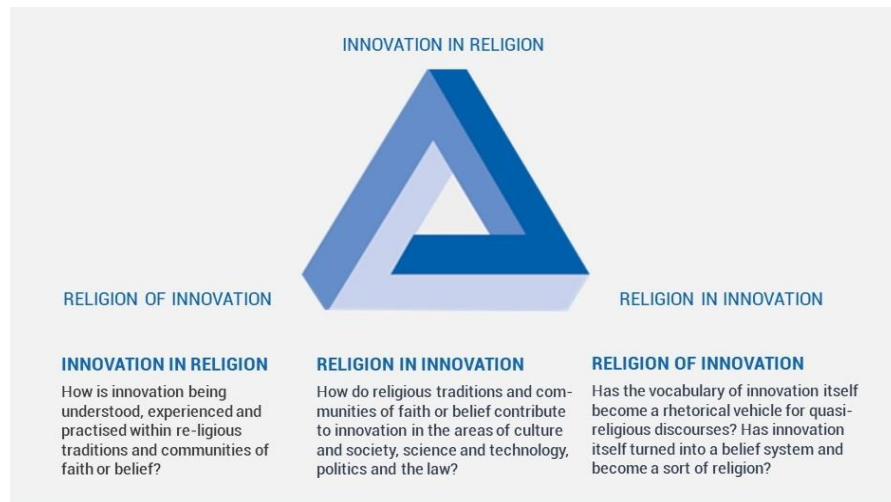
Fig. 1: *The triangle of religion and innovation.*

The threefold conceptual framework can be straightforwardly adapted to the case of religion and (innovation in the field of) AI:
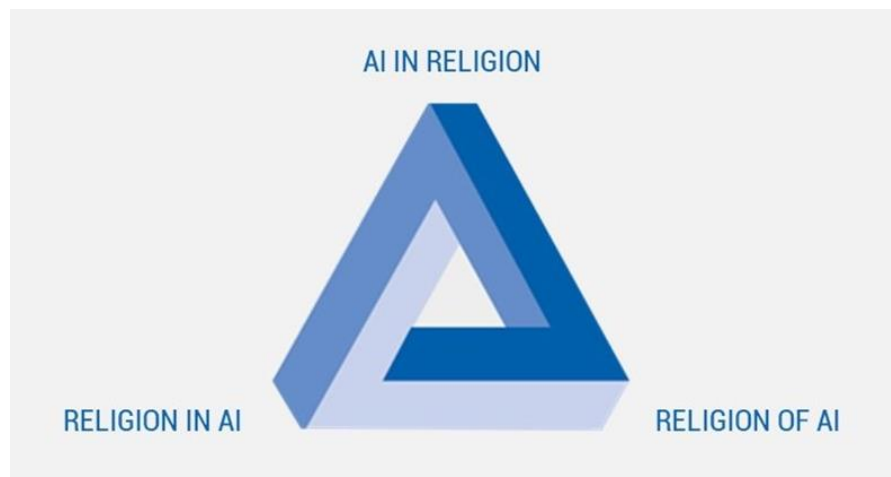

Fig. 2: *The triangle of religion and AI.*

The angle *AI in Religion* regards the manifold ways in which religious communities and, more generally, RBAs interact with AI-involving technologies in their life and for their purposes.

Religion in AI is about the ways in which RBAs shape the development of AI technologies and, more generally, contribute to the creation and dissemination of knowledge and awareness of AI – be it through participation in debates over AI governance and ethics, financial investments in AI-involving technologies or, more directly, by contributing to the development of AI systems which respond to the specific needs of RBAs (see below sections on engagement and agency).

The angle *Religion of AI* of our model finally regards the ways in which AI technologies are serving as screens for the projection of religious or quasi-religious hopes, fears, beliefs and practices, as can be witnessed in influential techno-utopian or techno-dystopian ideologies such as transhumanism or dataism[49].

As in the case of religion and innovation, we do not intend the distinction between the three aspects of the interaction between religion and AI as a neat and clear-cut categorization. The three aspects can and do overlap in any given context. Moreover, they can be interrelated through motivational and causal links. If, for instance, RBAs set up educational programmes for young people that aim at creating AI literacy (Religion in AI), and if they drive older generations towards a safe AI transition, then this may lead to a more informed and competent employment of AI-technologies by RBAs in the medium or long term (AI in Religion). Conversely, if RBAs adopt and employ existing AI systems (AI in Religion), then the experience and analysis of the limits or shortcomings of those systems as tools for enhancing the actors' agency may lead to an active contribution to the development and design of new systems which are more apt to their purposes, needs and values (Religion in AI).

We thus propose the threefold distinction as an analytical tool which can help comprehend the different kinds of engagement of RBAs with AI technologies and with other AI actors in a way that is both differentiated enough to do justice to the complexity of the relevant phenomena and integrated enough to provide a holistic view. At the same time, we see the triangle as a useful tool to guide strategies for the engagement of religion or belief actors with partners (engagement as partnership) and with AI technologies (engagement as participation).

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[49]   R. Geraci, *Apocalyptic AI: Visions of Heaven in Robotics, Artificial Intelligence, and Virtual Reality*, New York, Oxford University Press, 2010; B. Singler (ed), *Special Issue: Artificial Intelligence and Religion*, in "Implicit Religion", 20, 2017, 3, pp. 215-318; T. Kimura, *Robotics and AI in the sociology of religion. A human in imago roboticae*, in "Social Compass", 64, 2017, 1, pp. 6-22; B. Singler, *Blessed by the Algorithm: Theistic Conceptions of Artificial Intelligence in Online Discourse*, in "AI & SOCIETY", 35, 2020, 4, pp. 945-955; G. Trovato - H. Weng - A. Sgorbissa - R. Wieching (eds), *Special Issue: Religion in Robotics*, in "International Journal of Social Robotics", 13, 2021, 4, pp. 537-862.

3. THE ENGAGEMENT

In this section, we use the term 'engagement' to describe the relationship between AI technologies, AI stakeholders and RBAs. As explained in section 2, first, we consider engagement as partnership among different actors, i.e. we look at how RBAs collaborate with other, governmental and non-governmental, stakeholders in the field of AI technologies (3.1).

Since research on these types of engagement is still scarce, and because we understand technological development as part of a wider development framework[50], we draw on the literature on religious engagement in the field of sustainable development[51].

Then we focus on engagement as participation, i.e., we examine the different ways in which RBAs engage with AI technology design, development, implementation, education etc. through the analysis of different sources and examples (3.2)[52].

While providing a descriptive frame of reference, the term "engagement" is also meant to express a policy-oriented invitation to awareness and mobilisation. If mutual engagement of RBAs and AI partners, as well as RBAs' engagement with AI technology, are undoubtedly already a reality, they also need to be further acknowledged, recognised and developed.

Continuing on this line of reasoning, section 4 will emphasise the agency of RBAs as a space for action that these actors need to be aware of and responsible for. At the same time, governments and AI stakeholders in general need to acknowledge and encourage the agency of RBAs in appropriate ways.

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[50]   See IF20 Working Group on Research and Innovation for Science, Technology and Infrastructure, https://www.g20interfaith.org/research-and-innovation-for-science-tech-and-infrastructure/#consulting.

[51]   E.g. World Humanitarian Summit, *Religious Engagement: The Contributions of Faith Communities to our Shared Humanity". Special Session Summary*, 2016, http://agendaforhumanity.org/sites/default/files/resources/2017/Jul/SS11-Religious-Engagement.pdf.

[52]   Here we draw on the use of the term 'engagement' to highlight the need for more and better interaction between RBAs and policy makers and stakeholders in the context of the joint effort for sustainable development and the advancement of human rights, and freedom of religion or belief in particular: F. Petito - M.T. Scott, *Encounter, Dialogue, and Knowledge: Italy as a Special Case of Religious Engagement in Foreign Policy*, in "The Review of Faith & International Affairs", 13, 2015, 2, pp. 40-51.
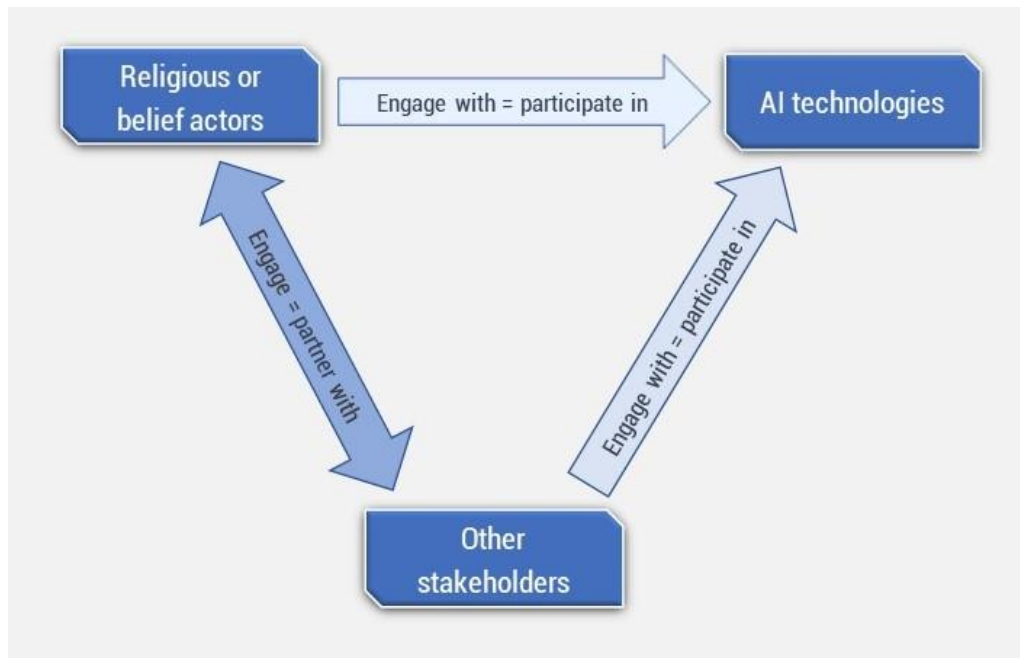
Fig. 3: *Engagement with partners + Engagement with AI technologies.*

3.1. Engaging with Partners

One point frequently emphasised in the literature on partnerships with RBAs in development work is that these actors are particularly valuable because of their embeddedness in local communities. As Marshall[53] summarises, RBAs often enjoy the trust of community members. They are active in delivering services such as healthcare and education, can mobilise networks and direct funding towards goals of common interest, including the support of the most vulnerable groups. Furthermore, the involvement of RBAs is key to the pursuit of a differentiated and context-sensitive approach to development, for different cultures in different geographical areas.[54]

Research has also indicated problematic aspects in partnerships between religious and non-religious actors. For instance, RBAs have sometimes been engaged in ways that

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[53]   K. Marshall, *Religious Engagement in Development Work: a Continuing* Journey, in A. Heuser - J. Koehrsen (eds), *Does Religion Make a Difference? Religious NGOs in International Development Collaboration*, Baden-Baden, Nomos, 2020.

[54]   See, e.g. PaRD, V*oices from Religions on Sustainable Development.* Bonn, BMZ, 2016, https://www.partner-religion-development.org/fileadmin/Dateien/Resources/Knowledge_Center/Voices_from_Religions_on_Sustainable_Development_April2017_3rd_edition.pdf.

can be described as merely instrumental to the pursuit of agendas which, ultimately, threaten their diversity and autonomy[55]. Partnerships with RBAs have also been reported as potentially aggravating inequalities within religious communities by placing too much weight on religious leadership, which is often male[56]. Moreover, there have been debates around RBAs' (perceived) attempts at proselytising[57] and pushing their own political agendas through development partnerships[58].

To clarify our understanding of 'engagement as partnership' between RBAs and other stakeholders, we refer to Haustein and Tomalin who, with regard to the SDGs framework, claim that there is a need to consider local civil society actors in general, and religious actors in particular, as legitimate development partners, in the interest of a "stronger commitment to a radical democracy of sustainable development that can still signify a common cause and aspiration for a better future even when disagreements and differences in the values, trajectories, and measurements of development come to the fore."[59] Thus, as illustrated in Figure 4, we see collaboration between RBAs and other actors as a two-way process, in which different material and immaterial resources (financial assets, networks, knowledge, influence and trust within communities) are mobilised by different stakeholders.

Fig. 4: *The bidirectional nature of engagement as partnership.*

[55]   B. Jones - M.J. Petersen, *Instrumental, Narrow, Normative? Reviewing recent work on religion and development*, in "Third World Quarterly", 32, 2011, 7, pp. 1291-1306. See also I. Haustein - E. Tomalin, *Religion, Populism, and the Politics of the Sustainable Development Goals*, in "Social Policy and Society", 20, 2021, 2, pp. 296-309

[56]   A. Karam, *What to Avoid in Religious Engagement*, Berkeley Forum of the Berkeley Centre for Religion, Peace & World Affairs, Georgetown University, 2016, https://berkleycenter.georgetown.edu/responses/what-to-avoid-in-religious-engagement.

[57]   C. Lynch - T.B. Schwarz, *Humanitarianism's Proselytism Problem*, in "International Studies Quarterly", 60, 2016, 4, pp. 636-646.

[58]   See B. Bompani, *Religion and development: Tracing the Trajectories of an Evolving Sub-Discipline*, in "Progress in Development Studies", 19, 2019, 3, pp. 71-185.

[59]   J. Haustein - E. Tomalin, E., *Religion, Populism, and the Politics of the Sustainable Development Goals*, in "Social Policy and Society", 20, 2021, 2, p. 307.

If 'engagement as partnership' is of high value in development in general, it is also key to building and sustaining AI systems that can serve the needs of local communities and for which a sense of ownership and trust can be developed. RBAs of different traditions are already working in this direction by actively engaging other stakeholders in the field of AI, including (inter)governmental actors and businesses. Such initiatives are often directed at the development and distribution of tools that allow for customised, remote and digitalised religious practices[60]. Yet the actual and potential involvement of RBAs with AI can go beyond narrowly defined religious practices. A clear example is the fact that RBAs are beginning to create partnerships with civil society actors, (inter)governmental institutions and businesses at the level of advocacy and policy-making. In this vein,

− the Pontifical Academy for Life of the Roman Catholic Church has partnered with IBM, Microsoft, the Italian Ministry of Innovation and FAO in signing the "Rome Call for AI Ethics"[61];

− there are ongoing efforts to build interreligious partnerships and alliances with non-religious actors to promote awareness of the risks posed by the use of AI in automated warfare[62], protect the right to privacy[63] and safeguard communication rights in general[64];

− RBAs have entered into a dialogue on AI technologies with the European Union by participating in the European Commission's public consultation on the 2020 White Paper on AI[65] as well as the Dialogue with churches, religious associations or communities, philosophical and non-confessional organisations on "Artificial Intelligence: Ethical Concerns"[66] promoted by the European Parliament.

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[60]   E.g.   https://www.vox.com/future-perfect/2019/9/9/20851753/ai-religion-robot-priest-mindar-buddhism-christianity; https://gulfnews.com/uae/dubai-launches-worlds-first-artificial-intelligence-fatwa-service-1.67466584; https://qz.com/india/1066718/the-robots-are-coming-for-one-of-hinduisms-holiest-ceremonies.

[61]   https://www.romecall.org.

[62]   Soka Gakkai International, Pax Christi Northern California and the World Council of Churches, *Interfaith Statement on Killer Robots: A Plea for Preserving our Shared Humanity*, 2021, https://sgi-ouna.org/joint-interfaith-statement-on-killer-robots.

[63]   European Civic Forum, *Open letter For a Europe that cares for all – during the COVID-19 pandemic and beyond*, 2020, https://civic-forum.eu/publications/open-letter/for-a-europe-that-cares-for-all.

[64]   https://waccglobal.org/what-you-need-to-know-about-ai-and-your-communication-rights.

[65]   In her report for FBK-ISR, M. Galassini presents and analysis of the contributions of RBAs to the White Paper consultation, https://isr.fbk.eu/wp-content/uploads/2021/03/Religious_or_Belief_Actors_and_the_European_Commission_s_White_Paper_on_Artificial_Intelligence.pdf.

[66]   European Parliament, *Artificial Intelligence: Ethical Concerns*, 2019, https://www.europarl.europa.eu/at-your-service/files/be-heard/religious-and-non-confessional-dialogue/events/en-20190319-programme.pdf.

While such initiatives often have limited impact and/or are perceived as socially conservative efforts, we will argue in section 4 that the European framework on human-centric AI, though failing to adequately address some aspects of the engagement of civil society in general, and RBAs in particular, does provide a starting point for reflecting on a more nuanced, more agency-focused engagement of RBAs as legitimate and key partners in the development of AI technologies, in Europe and beyond.

3.2 Engaging with AI Technologies

Research concerning this field has mostly focused on how RBAs use AI technologies in their activities at individual and collective levels. In fact, RBAs do not represent an exception to the digitalisation trend that has characterised the last decades[67]. A growing number of AI-based tools facilitate the participation of groups or individuals in virtual gatherings, remote observance and other rituals. Several RBAs are experimenting the use of AI-involving technologies in preserving and disseminating their scriptural and cultural heritage[68]. Furthermore, researchers are beginning to employ AI- and data-driven technologies in the study of (non)-religion[69].

In the context of orthopraxis, i.e., the correct execution of practices and rituals, AI-involving tools, often developed and marketed in collaboration with private businesses, are gaining acceptance. This is the case for prayer or devotional apps which assist individuals in tracking their spiritual lives or help with the right way to engage in prayers or rituals like Ramadan[70] or Shabbat observance[71]. There are attempts to build AI-powered robots to respond to community members' specific needs. For instance, the humanoid robot Veldan is programmed to teach Quranic prayers to children[72], while the theomorphic robot SanTO helps elderly Catholics in reciting their daily prayers[73]. AI-powered robots are also used in daily temple practices such as funerals, as in the case

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[67]   See, for example, Apostolato Digitale: https://www.apostolatodigitale.it.

[68]   https://www.talmud.it/?lang=en; https://bibleproject.com.

[69]   R. Reed Randall, *A.I. in Religion, A.I. for Religion, A.I. and Religion: Towards a Theory of Religious Studies and Artificial Intelligence*, in "Religions", 12, 2021, 6, p. 401; D. Balazka - D. Houtman - B. Lepri, *How Can Big Data Shape the Field of Non-Religion Studies? And Why Does It Matter?*, in "Patterns", 2, 2021, 6, pp. 1-12.

[70]   https://gulfnews.com/uae/dubai-launches-worlds-first-artificial-intelligence-fatwa-service-1.67466584.

[71]   https://jewishaction.com/religion/jewish-law/the-next-frontier-in-jewish-law-artificial-intelligence.

[72]   https://english.alarabiya.net/life-style/2014/02/25/Iranian-teacher-builds-robot-to-teach-prayer.

[73]   https://www.vox.com/future-perfect/2019/9/9/20851753/ai-religion-robot-priest-mindar-buddhism-christianity.

of the robot Buddhist monk Pepper[74]. They can function as spiritual authorities, as in the case of Mindar, a robot programmed to give a daily sermon from the Heart Sutra, and support other mechanical tasks in rituals, as in the case of the aarti Hindu ritual performed by a mechanic arm[75]. Moreover, robots have been entrusted with blessing rituals, as in the case of the Bless U-2 robot, which so far has offered its services to more than 10,000 people from all over the world[76].

Other significant examples regard the ways in which today's digital communication tools have enabled ceremonies and observances to be streamed online. As in other fields, the COVID-19 pandemic has led to an increase in the use of tools that have AI components for remote religious or belief practices[77]. Religious or belief-motivated technological interactions of this kind are leading to the creation of new community figures and professional profiles, such as online missionaries and spiritual coaches, in addition to consolidating the standing of virtual churches which enable the online participation of believers who cannot attend in-person events.

A further example is the use of AI-driven facial recognition technologies (FRTs) to trace community members' attendance to religious gatherings[78].

Education is also a key domain for engagement as participation. The benefits of a wide range of AI applications on education are increasingly recognised, from personalised tutoring and facilitated student/tutor matching systems to educational chatbots or virtual reality simulations[79]. The role of RBAs in the innovation and implementation of these tools seems to be gaining ground. Emerging work on the intersection between education studies and science and technology studies indicates the potential of this domain reporting, for example, positive effects of the use of robots in teaching perceived by Iranian students attending Islamic courses[80]. Another relevant example is the wide acceptance among Christian groups in Vietnam, of the adoption of AI applications

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[74] https://www.japantimes.co.jp/news/2017/08/16/business/pepper-the-robot-to-don-buddhist-robe-for-its-new-funeral-services-role. In this regard, also see FBK-ISR's webinar with Erica Baffelli, which was part of our series "Artificial Intelligence and Religion" (https://air2020.fbk.eu): https://www.youtube.com/watch?v=gGP4vMHDxJc.

[75] https://qz.com/india/1066718/the-robots-are-coming-for-one-of-hinduisms-holiest-ceremonies.

[76] https://www.theguardian.com/technology/2017/may/30/robot-priest-blessu-2-germany-reformation-exhibition.

[77] https://liberalarts.du.edu/news-events/all-articles/qa-world-religions-adapt-covid-19-through-virtual-practice.

[78] https://evangelicalfocus.com/science/5088/brazilian-churches-start-to-introduce-facial-recognition-in-their-services.

[79] W. Holmes - M. Bialik - C. Fadel, *Artificial Intelligence in Education*, in *Promises and Implications for Teaching and Learning,* Center for Curriculum Redesign, 2019.

[80] M. Alemi - A. Taheri - A. Shariati - A. Meghdari, *Social Robotics, Education, and Religion in the Islamic World: An Iranian Perspective*, in "Science and Engineering Ethics", 26, 2020, 5, pp. 2709-2734.

in religious education[81]. Moreover, RBAs' educational activities can offer training to members of their communities, including children and youth, on technical as well as ethical aspects of AI[82]. In the light of these and similar findings it can be expected that the spectrum of involvement of RBAs in the use of AI-based technologies in the educational field could become broader and more pronounced in the near future. This would in turn contribute to combining technological and religious education and thus counteract the increasing separation of knowledge on religion and culture from knowledge on science and technology[83].

3.3 Engaging Issues

RBAs also have a role to play in creating a more nuanced understanding of AI technologies and their implications for societies and the environment[84]. Some leading initiatives highlight ways in which members of diverse traditions and communities can provide important insights into the values and principles that can underpin the development, implementation and regulation of AI technologies[85]. Some of these insights are included in documents such as the German Protestant Church's "10 Commandments for the Digital Age"[86] and the "Vienna Manifesto for Digital Humanism"[87]. Crucially, contributions from non-Christian RBAs, e.g. the "Indigenous Protocol and AI Position Paper"[88], Yaqub Chaudhary's Muslim perspective on the ethics of digital technologies[89],

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[81]   K. Tran - T. Nguyen, *Preliminary Research on the Social Attitudes toward the AI's Involved Christian Education in Vietnam: Promoting AI Technology for Religious Education*, in "Religions", 2021, 12, 208.

[82]   https://www.ekd-digital.de/religionspaedagogisches-material;   https://www.wirsindpaten.de/gegen-rassismus; https://www.unicef.org/eca/reports/faith-action-inter-religious-action-protect-rights-children-affected-migration.

[83]   W. Sumarni et al., *The Urgency of Religious and Cultural Science in STEM Education: A Meta Data Analysis*, in "International Journal of Evaluation and Research in Education (IJERE)", 9, 2020, 4, p. 1045.

[84]   E.g.   https://www.churchofscotland.org.uk/__data/assets/pdf_file/0011/79760/Artificial-Intelligence-SRT-report-22.2.21WEB.pdf; https://www.jubilee-centre.org/artificially-intelligent-ebook.

[85]   https://religiousfreedomandbusiness.org/faith-belief-ai.

[86]   https://www.oikoumene.org/news/german-protestant-church-publishes-10-commandments-for-the-digital-age.

[87]   https://dighum.ec.tuwien.ac.at/dighum-manifesto.

[88]   https://spectrum.library.concordia.ca/986506.

[89]   M.Y. Chaudhary, *Initial Considerations for Islamic Digital Ethics*, in "Philosophy and Technology", 33, 2020, pp. 639-657.

Hongladarom's views on Buddhist ethics of AI and robotics[90], and Zvi Harry Rappaport's reflections on Jewish ethical perspectives on robotics and AI[91] effectively respond to the need to decolonize our understanding of AI[92].

The engagement of RBAs vis-à-vis critical aspects of AI regards, for instance, issues concerning privacy and the exposure of sensitive data, human rights breaches connected to surveillance, and the societally divisive phenomenon of hate speech.

Religious minorities have become targets of AI-based surveillance mechanisms, as in the case of the Uyghurs in Xinjiang and other religious groups in China[93]. They are often victims of hate speech and scapegoating through digital media, phenomena that have become more frequent during the COVID-19 pandemic[94]. However, it must not be ignored that this also concerns non-religious minorities, as can be witnessed by the misuse of digital technologies against atheists in Arab countries. In fact, in 2016 several Facebook accounts of Arab atheists were shut down[95]. Interestingly, recent studies have shown that religious or belief communities might be specifically targeted by disinformation campaigns[96].

At the same time, religious or belief groups have contributed to the spread of hate speech, conspiracy theories and disinformation through social media, including on COVID-19 vaccination[97].

There have been calls to increase collaborations with RBAs in initiatives aimed at countering online hate speech and discrimination[98]. One example in this field is the AHA!

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[90]   S. Hongladarom, *The Ethics of AI and Robotics: a Buddhist Viewpoint*, Lanham, Lexington Books, 2020.

[91]   Z.H. Rappaport, *Robotics and Artificial Intelligence: Jewish Ethical Perspectives*, in C. Nimsky - R. Fahlbusch (eds), *Medical Technologies in Neurosurgery* (Acta Neurochirurgica Supplements, vol 98), Wien - New York, Springer, 2006.

[92]   http://lcfi.ac.uk/projects/ai-narratives-and-justice/decolonising-ai.

[93]   https://www.bbc.com/news/technology-57101248; https://www.brookings.edu/testimonies/technological-surveillance-of-religion-in-china.

[94]   https://edition.cnn.com/2020/07/30/uk/online-anti-semitism-intl-scli-gbr/index.html; https://edition.cnn.com/2020/08/06/europe/muslims-coronavirus-england-islamophobia-gbr-intl/index.html.

[95]   N. Kazaal, *The Cultural Politics of Religious Defiance in Islam: How Pseudonyms and Media can destigmatize*, in "Communication and Critical/Cultural Studies", 14, 2017, 3, pp. 271-287.

[96]   https://predictiontechnology.ucla.edu/specific-targets-of-disinformation-christians-and-hispanic-voters.

[97]   https://www.washingtonpost.com/technology/2021/02/16/covid-vaccine-misinformation-evangelical-mark-beast.

[98]   https://sojo.net/articles/religious-groups-are-targets-disinformation-they-can-also-help-stop-it; https://www.kaiciid.org/news-events/features/covid-19-fuels-hate-speech-against-religious-and-ethnic-communities.

(Awareness with Human Action) project[99], funded by the European Union, and implemented by a consortium that includes the Network of Religious and Traditional Peacemakers, World Faiths Development Dialogue (WFDD), Islamic Relief Worldwide (IRW) and the King Abdullah bin Abdulaziz International Centre for Interreligious and Intercultural Dialogue (KAICIID). The project aims at preventing conflict in South Asia by tackling stigmatisation, discrimination and hate speech against minority groups, "primarily targeting religious leaders, and women and youth leaders as community influencers"[100]. Similarly, in Germany, Wir Sind Paten, an initiative connected to the Central Council of Muslims in Germany, organises blogger workshops[101] for youth with and without a migrant background to counter the spread of hate speech and fake news.

Still with regard to engagement as partnership and participation in the areas of monitoring surveillance and combating hate speech, some RBAs address discrimination in the field of AI systems development and, more broadly, in the tech industry. For example, they contribute to the diversification of AI developers by providing marginalised groups, including members of religious minorities[102], with training opportunities in coding and other IT skills[103]. This responds to UNESCO's recommendation to take "into consideration the specific needs of different age groups, cultural systems, different language groups, persons with disabilities, girls and women, and disadvantaged, marginalized and vulnerable populations"[104]. Moreover, some RBAs actively seek ways to use AI technologies to respond to global and local challenges. For instance, Finn Church Aid is exploring the potential of blockchain to make cash distributions for refugees more cost effective, transparent and trustworthy[105]. Similarly, Islamic Relief is developing ways to use digital technologies to support the inclusion of people with disabilities[106]. Some RBAs organise hackathons to find innovative ways to tackle global and/or local issues and to promote investments and collaboration with research institutions and businesses, with a special focus on youth participation[107]. In September 2021, a conference hosted by the World Council of Churches and the World Association for Christian

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[99]   https://www.peacemakersnetwork.org/our-work/peace-support/aha.

[100]   *Ibidem*.

[101]   https://www.wirsindpaten.de/gegen-rassismus.

[102]   https://www.skillspire.net/our-founder.

[103]   https://www.unhcr.org/neu/31551-codecreate-by-finn-church-aid.html; see also https://global-compactrefugees.org/article/codecreate-finn-church-aid.

[104]   UNESCO, *First Draft of the Recommendation on the Ethics of Artificial Intelligence*, 2020, p. 8, https://unesdoc.unesco.org/ark:/48223/pf0000373434.

[105]   https://www.solita.fi/en/customers/how-blockchain-can-increase-trust-and-transparency-in-humanitarian-aid.

[106]   https://www.islamic-relief.org/inclusion-dignity-disabilities.

[107]   https://kingdomcode.org.uk; http://optictechnology.org/index.php/en/news-en/143-vhack-news-en.

Communication brought together different actors to reflect on the ways in which AI and other digital technologies can provide opportunities for RBAs and other stakeholders to foster inclusion and social justice[108]. Another telling example is the blog and podcast initiative *allthingsnew.tech*, which engages entrepreneurs, technologists and innovators in conversations about how their work relates to Christian teachings[109].
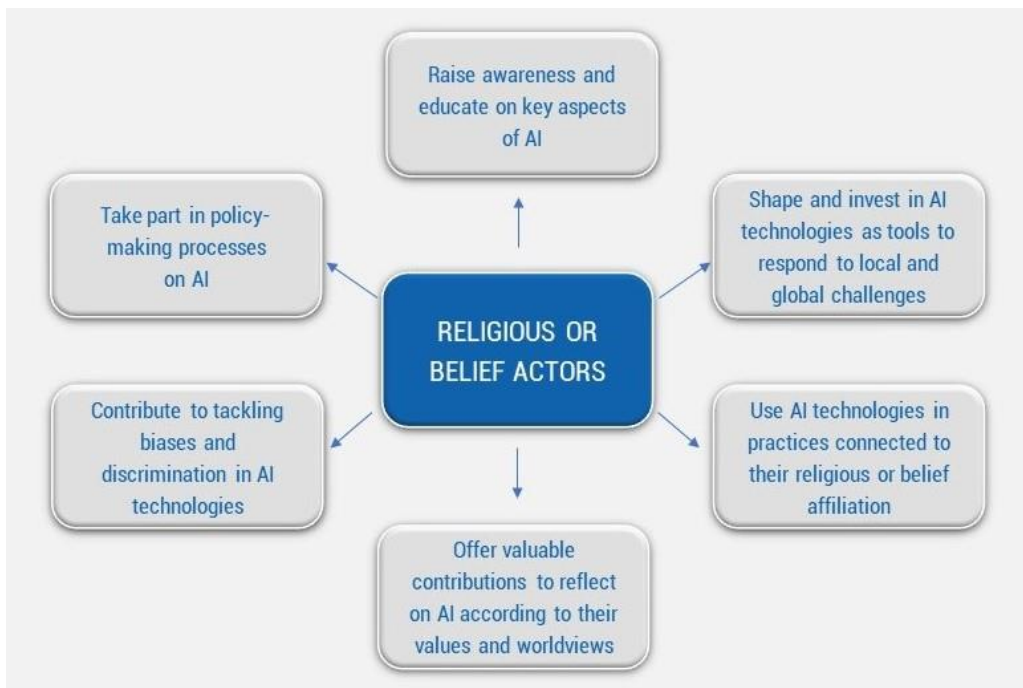

Fig. 5: *The multiple dimensions of 'engagement as participation'.*

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[108]   Symposium "Communication for Social Justice in a Digital Age", World Council of Churches (WCC) and World Association for Christian Communication, 2021, https://www.oikoumene.org/events/communication-for-social-justice-in-a-digital-age.

[109]   https://allthingsnew.tech.

4. AGENCY

This section analyses RBAs' engagement in terms of agency throughout the AI life-cycle, from design to application. As anticipated, we will take the European Union framework on human-centric AI based on an 'ecosystem of excellence and trust in AI' as our reference, for Europe and beyond.

The examples and considerations presented in the preceding section on engagement justify the conclusion that, as far as AI is concerned, RBAs should not be relegated to the role of end-users or merely subsumed under the category of 'members of the wider society'. Rather, there are good reasons for considering them key stakeholders and potential or actual agents throughout the AI life-cycle. Sub-Section 4.1 looks at the role of RBAs in building an ecosystem of trust, whereas sub-Section 4.2 focuses on their role in building an ecosystem of excellence in AI.

4.1 Religious or Belief Actors' Role in Building an Ecosystem of Trust

In 2019, the EU High-Level Expert Group on AI issued the "Ethics guidelines for trustworthy AI." The Guidelines identify seven requirements for achieving trustworthy AI:

1   human agency and oversight – including fundamental rights;

2   technical robustness and safety – including resilience to attack and security, fall back plan and general safety, accuracy, reliability and reproducibility;

3   privacy and data governance – including respect for privacy, quality and integrity of data, and access to data;

4   transparency – including traceability, explainability and communication;

5   diversity, non-discrimination and fairness – including the avoidance of unfair bias, accessibility and universal design, and stakeholder participation;

6   societal and environmental wellbeing – including sustainability and environmental friendliness, social impact, society and democracy;

7   accountability – including auditability, minimisation and reporting of negative impact, trade-offs and redress[110].

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[110]   High Level Expert Group, *Ethics Guidelines for Trustworthy AI, Report*, Brussels, European Commission, 2019, p. 14, https://digital-strategy.ec.europa.eu/en/library/ethics-guidelines-trustworthy-ai.

These requirements apply differently to each group of stakeholders, i.e., to developers, deployers, end-users and the wider society. Given the points outlined in the previous sections of this paper, the inclusion of RBAs as end-users and part of the wider society group in this list of stakeholders is fairly straightforward. The same holds for the idea of RBAs as participants and partners in debates over ethics, values and principles for AI. This alone makes them key actors since, according to the Ethics Guidelines, *all stakeholders* should be "involved throughout the AI system's life cycle" and need to be "aware of and trained in trustworthy AI"[111].

At the same time, as will be discussed in section 4.2, RBAs can also be key partners in making sure that "end-users and the broader society" are "informed about these requirements and able to request that they are upheld"[112]. In fact, there is evidence that some RBAs are already engaging in the provision of formal and informal education on AI technologies and ethics, including for vulnerable and marginalised groups, in awareness-raising initiatives on key AI-related issues such as privacy protection and automated warfare, as well as in policy-making processes for AI regulation (see section 3.1). This suggests that two-way literacy processes – i.e., knowledge sharing between RBAs and other stakeholders, on AI-related technical, regulatory and ethical issues – can be key to fostering human-centric, trustworthy AI. In this context, we therefore see the combination of literacy on religion or belief and digital literacy as crucial.

Some RBAs can also be considered "deployers" and, more generally, agents of AI technologies in their different phases, from design to application. The Ethics Guidelines define deployers as "public or private organisations that use AI systems within their business processes and to offer products and services to others"[113]. As illustrated in detail in section 3.2, through their individual members and/or communities, RBAs actively design, adopt, adapt, interpret, shape, use and develop AI technologies in multiple ways[114], including the provision of specific services and products. The identification of RBAs not only as "end users" and members of the "wider society", but also as agents within AI life-cycle, from design to application, has significant implications on the type of involvement that they can have in what the EU High-Level Expert Group calls "realising trustworthy AI." In particular, it means that, if they are involved in these activities, they should engage in assessment processes to achieve trustworthy AI, as outlined by

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[111]   *Ibidem*, p. 24.

[112]   *Ibidem*, p. 14.

[113]   *Ibidem*.

[114]   C. Helland, *Online Religion as Lived Religion: Methodological Issues in the Study of Religious Participation on the Internet*, in "Online: Heidelberg Journal of Religions on the Internet", 1, 2005, 1, pp. 1-16; H.A. Campbell, *Digital Religion: Understanding Religious Practice in New Media Worlds*, London - New York, Routledge, 2013; H.A. Campbell, *Digital Ecclesiology: A Global Conversation, Digital Religion Publications* (Network for New Media, Religion & Digital Culture Studies), 2020, open access: https://oaktrust.library.tamu.edu/handle/1969.1/188698; G. Evolvi, *Blogging My Religion: Secular, Muslim, and Catholic Media Spaces in Europe*, Abingdon - New York, Routledge, 2018.

the High-Level Expert Group's "Assessment List for Trustworthy Artificial Intelligence (ALTAI) for self-assessment"[115] and, in general, by the EU's proposed regulation on AI[116]. In fact, as envisaged by the High-Level Expert Group, "deployers" of AI technologies should "ensure that the systems they use and the products and services they offer meet the requirements"[117] for trustworthy AI. As we will see in the following section, this may also be expected to lead to RBAs' taking on an active part in building an ecosystem of AI excellence.

One important issue in connection with AI-related education and training regards the question of how to deal with shortcomings in transparency. Recent research suggests that, on its own, increasing the technological transparency of AI-systems and data sets is not sufficient to mitigate data-related risks[118]. Indeed, transparency has to be complemented by assistance in the form of education and training for non-expert users to effectively allow them to understand and 'make sense of' digital processes which, by technological standards, may well be transparent for experts. The educational and awareness-raising initiatives of RBAs can contribute to achieving this goal.

4.2 Religious or Belief Actors' Role in Building an Ecosystem of Excellence

As mentioned in section 3.1, RBAs have often been described as key partners in wider sustainable development work as they enjoy trust in their communities and exert considerable influence on the wider society. This feature can be key to working towards building an ecosystem of trust in AI, in the EU framework and beyond. In fact, if they choose to adhere to the requirements outlined in section 4.1, RBAs can act as mediators between developers, deployers, (inter)governmental institutions and local communities. They can do so through educational and awareness-raising initiatives, as well as through activities aimed at including marginalised groups and tackling biases and discrimination in AI technologies. This in turn would foster responsibility and ownership among local communities and religious and belief communities themselves. Examples of these types of engagement are the Church of Scotland's "AI Report"[119], Evangelische

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[115]   https://digital-strategy.ec.europa.eu/en/library/assessment-list-trustworthy-artificial-intelligence-altai-self-assessment.

[116]   https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1623335154975&uri=CELEX%3A52021PC0206.

[117]   High Level Expert Group, *Ethics Guidelines for Trustworthy AI, Report*, Brussels, European Commission, 2019, p. 14, https://digital-strategy.ec.europa.eu/en/library/ethics-guidelines-trustworthy-ai.

[118]   J.A. Obar, *Sunlight alone is not a disinfectant: Consent and the futility of opening Big Data black boxes (without assistance)*, in "Big Data & Society", January-June 2020, pp. 1-5.

[119]   https://www.churchofscotland.org.uk/__data/assets/pdf_file/0011/79760/Artificial-Intelligence-SRT-report-22.2.21WEB.pdf.

Kirche Deutschland's modules for AI education in schools[120], Skillspire's training activities for minority groups to foster diversity in the tech industry[121], and the blogger workshops on hate speech organised by Wir Sind Paten, an initiative connected to the Central Council of Muslims of Germany[122]. Also significant is the teaching programme of The American Humanist Association named "Humanism and Artificial Intelligence"[123].

One important issue in connection with AI-related education and training regards the question of how to deal with shortcomings in transparency. Recent research suggests that, on its own, increasing the technological transparency of AI-systems and data sets is not sufficient to mitigate data-related risks. Indeed, transparency has to be complemented by assistance in the form of education and training for non-expert users to effectively allow them to understand and 'make sense of' digital processes which, by technological standards, may well be transparent for experts. The educational and awareness-raising initiatives of RBAs can contribute to achieving this goal[124].

Furthermore, RBAs can play important roles in debates around the idea that AI technology should be "developed in a way that puts people at its centre and is thus worthy of the public's trust". As envisaged by the EU Communication "Building Trust in Human-Centric AI", such technologies have to be "consistent with the law" and "adhere to ethical principles" so as to "ensure that their implementations avoid unintended harm"[125]. In fact, RBAs can offer important insights based on their own value-systems and worldviews, as in the case of the "Vienna Manifesto for Digital Humanism"[126], the "Rome Call for AI Ethics"[127], and other advocacy and policy-making activities. Moreover, RBAs can push regulatory bodies and other stakeholders to question their understanding of "ethical principles" and "harm", according to the different sensitivities deriving from their traditions.

Although the EU framework calls for end-users and the wider society to be involved throughout AI systems' life cycles, when describing the goal of building an ecosystem of excellence and the steps that the EU is planning to take in order to achieve it, civil

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[120]   https://www.ekd-digital.de/religionspaedagogisches-material.

[121]   https://www.skillspire.net/our-founder.

[122]   https://www.wirsindpaten.de/gegen-rassismus; https://www.unicef.org/eca/reports/faith-action-inter-religious-action-protect-rights-children-affected-migration.

[123]   https://americanhumanistcenterforeducation.org.

[124]   J.A. Obar, *Sunlight alone is not a disinfectant: Consent and the futility of opening Big Data black boxes (without assistance)*, in "Big Data & Society", January-June 2020, pp. 1-5.

[125]   https://digital-strategy.ec.europa.eu/en/library/communication-building-trust-human-centric-artificial-intelligence.

[126]   https://dighum.ec.tuwien.ac.at/dighum-manifesto.

[127]   https://www.romecall.org.

society actors are rarely mentioned[128]. However, there are many ways in which civil society actors in general, and RBAs in particular, could make important contributions not only in the domain of trust, but also to excellence in AI. For instance, as we have seen in section 3.2, they can mobilise resources for research and development of innovative AI-based solutions in partnership with other non-governmental actors and private businesses, as in the case on Finn Church Aid's planned use of blockchain technologies in development and humanitarian work[129], Islamic Relief's engagement in using digital technologies to support people with disabilities[130], and the several hackathons promoted by RBAs[131]. A clear sign in this direction is the recent conference "Communication for Social Justice in a Digital Age" organised by the World Council of Churches and the World Association for Christian Communication, which explored current and future applications of AI and other digital technologies to promote social justice[132]. Moreover, initiatives such as the Talmud and the Bible Project[133], which aim at preserving and making available religious or belief communities' cultural and religious heritage, can arguably also be considered contributions to building an ecosystem of excellence. This, in our view, is in line with what the EU framework calls "fostering AI as a force for good"[134], and with the claim that "the use of AI systems can have a significant role in achieving the Sustainable Development Goals, and in supporting the democratic process and social rights"[135]. We are suggesting here that through their organised participation in research and innovation, and the AI business, as well as through individual researchers, entrepreneurs and investors, RBAs can offer insights and avenues for collaboration within the excellence framework, which might help expand and enhance the very meaning and scope of the concept of excellence in AI technologies.

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[128] https://digital-strategy.ec.europa.eu/en/library/communication-fostering-european-approach-artificial-intelligence; https://ec.europa.eu/commission/presscorner/detail/en/fs_20_282; see also https://digital-strategy.ec.europa.eu/en/library/coordinated-plan-artificial-intelligence-2021-review.

[129] https://www.solita.fi/en/customers/how-blockchain-can-increase-trust-and-transparency-in-humanitarian-aid.

[130] https://www.islamic-relief.org/inclusion-dignity-disabilities.

[131] https://kingdomcode.org.uk; http://optictechnology.org/index.php/en/news-en/143-vhack-news-en.

[132] Symposium "Communication for Social Justice in a Digital Age", World Council of Churches (WCC) and World Association for Christian Communication, https://www.oikoumene.org/events/communication-for-social-justice-in-a-digital-age.

[133] https://www.talmud.it/?lang=en; https://bibleproject.com.

[134] https://digital-strategy.ec.europa.eu/en/library/communication-fostering-european-approach-artificial-intelligence.

[135] https://ec.europa.eu/info/sites/default/files/commission-white-paper-artificial-intelligence-feb2020_en.pdf.

To summarise, this and the previous sub-sections have sought to make the case for RBAs to assert themselves and be recognised by governments and AI actors in general as legitimate and key stakeholders in processes of design, development, deployment, regulation and reflection on AI technologies and their implications. Given the examples that we have provided, it is apparent that there are opportunities for different stakeholders, including (inter)governmental actors, businesses, and civil society organisations, to establish and foster partnerships and collaborations with RBAs in this field. These collaborations would contribute to fostering and improving ecosystems of trust and excellence in AI. In this context, as highlighted in section 3, RBAs should be acknowledged and act as legitimate civil society partners, thus sharing both opportunities and responsibilities deriving from their involvement in these processes. A necessary condition for this to happen is that RBAs themselves take stock of their multifarious engagements with AI technologies and acknowledge that advocacy for AI ethics is only one out of many ways in which they can and do interact with the field of AI.

The final section of the paper provides a set of recommendations aimed at fostering the engagement and agency of RBA.

RECOMMENDATIONS

The following recommendations are addressed to RBAs, policy-makers and researchers in the fields of AI and religion. They summarise our take on the manifold interactions of RBAs with AI technologies and can contribute to guiding future interactions in societally beneficial ways.

Religious or Belief Actors in AI-related Policy-Making

1. In line with a multi-stakeholder and whole-of-society approach, decision makers designing national and international policy-making processes on AI should enhance existing and/or establish new consultation channels with RBAs.

2. So as to do justice to the diversity of religious or belief communities, consultations with RBAs should not be limited to high-level leaders, institutionalised actors and formal organisations, but also involve minority actors, women, LGBTQ+ persons and youth within the respective communities.

3. Collaboration among different RBAs and between RBAs and other stakeholders, both governmental and non-governmental, should be strengthened with the aim of enhancing policies and advocacy on the ethics and governance of AI, in particular with regard to the protection of sensitive data and the prevention of bias and discrimination.

4. However, drawing upon significant experience in deploying (and sometimes designing and developing) AI-involving technologies, diverse RBAs should be heard not only regarding their assessments of the ethical implications of AI, but also as stakeholders in, and contributors to, the AI innovation life cycle.

Religious literacy and literacy on AI

5. In working towards fairer (less-biased) and more trustworthy AI technologies that serve the needs of communities around the globe, governmental and non-governmental actors should promote initiatives aimed at enhancing both religious and non-religious literacy and awareness of religious diversity among policy-makers, AI developers, businesses and other stakeholders.

6. Conversely, AI-literacy among RBAs should be fostered because RBAs might use AI-involving technologies without being fully aware of the opportunities such technologies offer or the risks they pose, in particular with regard to surveillance and privacy.

7. RBAs should acknowledge that their interactions with AI-technologies often go well beyond ethics and human rights advocacy. Fostering AI-literacy among RBAs

will thus have to include promoting processes of critical reflection upon, and taking stock of, RBAs' diverse involvements with AI technologies, from the use of social media to investments in AI stocks.

8. Within their possibilities, RBAs should consider taking on the responsibility to act as (formal or informal) educators on AI in their communities, promoting the responsible use of digital technologies and raising awareness of the ethical and social implications of AI according to shared values of freedom, dignity, equality and respect.

Research and knowledge production on AI

9. Strengthening the evidence base on RBAs' engagements can contribute to shaping future AI research, development and deployment in beneficial, responsible and trustworthy ways. Given the complexity of evolving digital technologies and their impact on societies, multi-, trans- and interdisciplinary methodologies should be pursued in studying (non)-religion and AI.

10. Researchers in AI, Religious Studies, non-religion studies, Science and Technology Studies, Sociology and Innovation Studies should partner in their future work in order to address a series of so far under-researched issues, including but not limited to
    - RBAs' use of AI-involving technologies;

    - RBAs-related (mis)use of data-driven surveillance mechanisms;

    - RBAs' contributions (and resistance) to the design, development and implementation of trustworthy AI;

    - AI-related collaborations and partnerships among RBAs as well as between RBAs and other civil society actors;

    - RBAs-related implications of AI for different areas of sustainable development such as health, child protection, economy and social cohesion;

    - data-driven approaches to studying religion and belief;

    - religious and non-religious biases in the training samples.

APPENDIX

1. List of Reference Documents from our Center

1. Religion & Innovation. Gearing up for the AI Revolution. Strategic Plan 2019-2021 (https://isr.fbk.eu/en/about-us/strategic-plan)

2. Religion and Innovation. Calibrating Research Approaches and Suggesting Strategies for a Fruitful Interaction Position Paper (2019) (https://isr.fbk.eu/wp-content/uploads/2019/03/Position-Paper.pdf)

3. Religion & Innovation at FBK / Religione e Innovazione in FBK (2019) (https://isr.fbk.eu/en/about-us/religion-innovation-at-fbk)

4. Engaging Religious and Belief Actors in the European Approach to Artificial Intelligence. Response of the Center for Religious Studies of Fondazione Bruno Kessler to the European Commission's Public Consultation on the White Paper "On Artificial Intelligence - A European Approach to Excellence and Trust" (2020) (https://isr.fbk.eu/en/about-us/response-to-the-european-commissions-public-consultation-on-the-white-paper-on-artificial-intelligence)

5. Mapping Religious Nones in 112 Countries: An Overview of European Values Study and World Values Survey Data (1981-2020), by Dominik Balazka, (2020) (https://isr.fbk.eu/en/report-mapping-religion-nones-in-the-world-2020)

6. Religious or Belief Actors and the European Commission's White Paper on Artificial Intelligence, by Margherita Galassini (2021) (https://isr.fbk.eu/en/prova-attori-religiosi-e-organizzazioni-non-confessionali-e-la-strategia-europea-sullai)

2. List of Consulted Experts

The present paper has benefited from discussions with several experts and institutions, from partnerships with academia, non-profits, for-profits and other organizations, and from exchanges with the speakers of our webinar series "Artificial Intelligence and Religion - AIR2020/21". In October-November 2021 our director Marco Ventura has presented and discussed the ideas of this paper in Lund, Sweden with the Advanced Study Group on Artificial Persons at the Pufendorf Institute for Advanced Studies of Lund University, online from Bruxelles at the workshop on "Imago dei or homo roboticus. Christian perspectives on current developments of AI in Europe" convened by the Committee of the representatives of the Orthodox Churches to the European Union, and in Toruń, Poland at a conference of the Laboratory of Religious Freedom at the Faculty of Theology of Nicolaus Copernicus University.

In particular, we discussed preparatory texts and preliminary versions of the present paper with the experts listed below. We take full responsibility for the views expressed in this paper, which do not necessarily reflect the views of our interlocutors.

- Rachel Bayani (Bahá'í International Community, Brussels Office)
- Paolo Benanti (Pontifical Gregorian University)
- Stefano Davide Bettera (European Buddhist Union)
- Alessandro Calcagno (COMECE, Commission of the Episcopates of the European Union, Secretariat)
- Marco Caproni (Christian Congregation of Jehovah's Witnesses, Italian Press Office)
- Vincent Depaigne (European Commission, Directorate-General for Justice and Consumers)
- Arie de Pater (European Evangelical Alliance, Brussels Office)
- Nura Detweiler (Bahá'í International Community, Brussels Office)
- Francesco Di Lillo (European Union & International Affairs Office of The Church of Jesus Christ of Latter-day Saints)
- Ron Eichhorn (European Buddhist Union)
- Robert Geraci (Manhattan College)
- Erin Green (WACC, World Association for Christian Communication)
- Brian Grim (Religious Freedom & Business Foundation)
- Friederike Ladenburger (COMECE, Commission of the Episcopates of the European Union, Secretariat)
- Christopher Lim (TheoTech)
- Kishan Manocha (Organization for Security and Co-operation in Europe Office for Democratic Institutions and Human Rights)
- Eric Roux (European Office of the Church of Scientology for Public Affairs and Human Rights)
- Jeff Simon (Bahá'í International Community, Brussels Office)
- Massimo Tistarelli (University of Sassari)
- Eric Trozzo (Evangelical Lutheran Church in America, Lutheran World Federation)
- Lorenzo Vargas (WACC, World Association for Christian Communication
- Julija Vidovic (CEC/KEK, Conference of European Churches, Thematic group on Science, New Technologies and Christian Ethics)
- Mikolaj Wrzecionkowski (Organization for Security and Co-operation in Europe Office for Democratic Institutions and Human Rights)
- Konstantinos Zormpas (CEC/KEK, Conference of European Churches, Thematic group on Science, New Technologies and Christian Ethics)