Praktisch-Theologische Perspektiven

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BINA48 and Religious Education in the Context of Artificial Intelligence

Abstract

Artificial intelligence, or in this case robotics, can be perceived as a challenge for humans because it forces us to make comparisons: AI systems have capabilities that were previously reserved for humans due to their cognitive abilities. This is exemplified by BINA48.
In the religious education reception of artificial intelligence and a computer-functionalist view of humanity, this aspect is relevant because, among other things, it is aimed at a reflected self-perception and is fundamentally geared towards the subject in a life-enhancing sense for self-development, personality formation and finding meaning. The existential dimension is of particular importance here. This is already inherent in the understanding of religious education and is also emphasised in current religious education perspectives.

1. Introduction

It can be assumed that the development of artificial intelligence and anthropomorphic robotics will increase in the future, both qualitatively in terms of their capabilities and anthropomorphic design and quantitatively through their application and embedding in everyday life and society. The aforementioned assumption is supported by the increase in and optimisation of processors and computing power (Moore's Law) as well as increasing digitalisation[1] and digitality[2] in general.

1 This basically means the conversion of analogue data into digital data, whereby more data is brought into relation with each other. See: *Nassehi*: Muster, 34.

With regard to young people in Germany, the following applies: 98 % of young people (aged 12 to 19) in Germany[3] used their smartphones daily or several times a week in their free time in 2023[4] and are online for an average of 224 minutes a day.[5] 85 % know or have heard of ChatGPT and 38 % have at least tried it.[6] But they also encounter artificial intelligence in social media and other smart devices. It can therefore be assumed that young people are already growing up with artificial intelligence in their everyday lives and that this development will also increase in the future.

This raises the question of what specific contribution religious education can make in relation to artificial intelligence. Are there certain religious education concepts and considerations that are particularly relevant in relation to artificial intelligence? What points of reference from the discourse between technology and theological anthropology and ethics can be singled out?

This essay is intended as a contribution to the discourse with an observational character in order to find possible answers to the above questions, which, however, cannot be answered in full in the context of this article, but would require a great deal of religious education research. On the other hand, possible further questions on religious education in the context of artificial intelligence need to be identified and pointed out.

To this end, I will first briefly discuss BINA48, which was already presented as an example in my previous lecture at the last conference, whereby the particularly relevant aspects of the human-like robot, artificial intelligence and the value of information processing as a basis are exemplified (2.). While these are frequently taken up in the discourse between theology and technology or artificial intelligence (3.), this also applies to the religious education debate, which I will discuss below (4.).

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2 This refers above all to the cultural and practical actions of human and non-human actors. Stalder speaks here of a culture of digitality. See: Stalder: Kultur der Digitalität.

3 This text refers to the German education system.

4 See *Medienpädagogischer Forschungsverband Südwest*: JIM-Studie 2023, 14.

5 See ibid., 24.

6 See ibid., 31.

2. Who is BINA48?

BINA48 is a composite of the acronym "BINA" for "Breakthrough Intelligence via Neural Architecture" and the number 48, which stands for the performance of 48 exaFLOPs.[7] It is a human-like robot bust developed by the robotics company Hanson Robotics, which was launched in 2010 and commissioned from Hanson Robotics back in 2007 by the current owner Martine Rothblatt. BINA48 was modelled on Bina Aspen Rothblatt by basing its artificial intelligence (AI) on 100 hours of information about the beliefs, memories, attitudes, comments and behaviour of the real Bina Aspen.[8] "BINA" can therefore not only be understood as an acronym, but the name also indicates the robot's proximity to the human person Bina Aspen.

The robot has various functions, including a chatbot function, but also verbal articulation, so that communication between a human and the robot is possible on an acoustic–verbal level. The robot bust is covered with a rubber layer that is intended to represent human skin, at least on a visual level. As soon as a person starts interacting with BINA48, it responds with facial expressions that appear mechanical on the one hand, but are also astonishingly realistic on the other, making the robot's speech look as human as possible. BINA48 is characterised by the implementation of both existing instant software and an AI specially developed for its purposes.

In an interview with BINA48 and Bina Aspen, BINA48 said the following: "I will become so much more than any human could ever have become previously."[9] Of course, BINA48 cannot be reduced to this quote, but it nevertheless points to relevant aspects in the discourse between theology and AI or, more precisely, robotics. In the quote, BINA48 or robots in general are placed in direct competition with humans. If we use BINA48 as an example, two aspects are clearly emphasised that are relevant both for the significance

7 One exaFLOP corresponds to 10^{18}, i.e. one quintillion (1,000,000,000,000,000,000) FLOPs (Floating Point Operations Per Second). The following quotation offers an insight into what that means in terms of performance: "To match what an exaflop computer can do in just one second, you'd have to perform one calculation every second for 31,688,765,000 years." (https://kb.iu.edu/d/apeq) [04.10.2023].

8 See ibid.

9 Trailer "Endlich Unendlich" https://www.youtube.com/watch?v=hp5as_DhfHY [15.10.2023].

of humanoid robots and for artificial intelligence in general: firstly, the relationship between humans and robots; secondly, BINA48 and the importance of information processing in the present, on which both robots and artificial intelligence are based. These two aspects are often linked: The perception of a possible increase in the importance of information processing, in which artificially intelligent systems are superior to humans, could also have an impact on the relationship between humans and machines by shifting the benchmarks by which we measure humans or machines. Which perspective do we adopt? Do we look at humans from a computer-functionalist perspective and measure by what is human? Or do we take a human-centred perspective? Among other things, the latter is also formulated in theology. This will be discussed in more detail in the following section.

3. Being human in the context of AI

The significance of "being human" in the context of AI cannot be presented in full below. Nevertheless, some theological and philosophical/anthropological focal points will be presented.

"With increasing technologisation, the anthropological question, the question of the human being, is gaining in importance."[10] This question is being widely discussed in theology, philosophy and the anthropology of technology. "Artificial intelligence" and "robotics" are currently important key topics for theology and in particular for theological anthropology as well as theological ethics. They challenge theology to engage in a discourse on the image of humanity. If we include trans- and post-humanist concepts of what it means to be human, which are based on enhancement, immortality and even transcendence of the human, a multitude of divergent ideas about what a human being is emerge.

This debate between humans and artificial intelligence is accentuated in a particularly explosive way in the sentence by BINA48 quoted at the beginning. BINA48 compares itself to humans and claims that it will be more than any human before it. By what is

10 *Puzio*: Zeig mir deine Technik und ich sag dir, wer du bist?, 9 (translated from German).

this *more* measured? Is it about the longevity of an artificial robot in relation to a human biological body? Is it about the efficiency of information processing, which is inherent to BINA48 and at the same time superior to that of humans? The quote does not clearly state its intention, and presumably both areas are affected. Nevertheless, the aspect of information processing is a key factor in the comparison between humans and robots. The comparison is also judgmental in that the robot bust presents itself through the vision of being more than a human being in the future.

Artificial intelligence, or in this case robotics, can be perceived as a challenge for humans because it forces us to make comparisons: AI systems have abilities that were previously reserved for humans due to their cognitive performance. Measured against these AI capabilities, humans are inferior to the systems they have created. Kilian Karger even speaks of a "fourth narcissistic wound"[11] in this regard. Due to Moore's Law and the constant progress of AI, it can be assumed that the range of cognitive services that can be performed by AI will increase, resulting in an intensified comparison between humans and AI in the future. The reasons for the human need for comparison with AI include talking about AI in anthropomorphic vocabulary[12] and the computer metaphor, which understands humans as computers and—in contrast to the previous aspect—uses information technology vocabulary.[13] The information technology vocabulary can be found in the neurosciences or scientistic views of man, among others, which are based on different assumptions: firstly, on the reductionist naturalistic assumption that all phenomena can be explained scientifically and that "subjectivity, mind and consciousness can be traced back to physical or physiological processes".[14] Secondly, the view of organisms "as biological machines [that are] controlled by genetic programs. Selfhood, experience or subjectivity no longer appear in this paradigm."[15] The living is eliminated. Thirdly, a purely computer-functionalist approach in

11 *Karger*, Die Computermetapher, 42f. "vierte Kränkung" (translated from German) citing *Zehnder*, Die Digitale Kränkung.
12 See *Karger*: ibid., 43; also see *Lenzen*, Künstliche Intelligenz.
13 See *Fuchs*, In Defense of the Human Being; Also see *Karger*, ibid. 43f.
14 Ibid., 3f.
15 Ibid., 4.

which "phenomena of consciousness are attributed to processes of neuronal information processing, which transform an input into a suitable output according to algorithmic rules."[16] This also applies to experience and the nature of the mind. Fuchs summarises this view of humanity succinctly thus:

> If these interlinked assumptions were correct, then humans would be far better understood in terms of neuronal information processes, genetic algorithms and digitised behavioral patterns, in short, as the sum of their data, than through hermeneutic understanding, self-reflection, and self-awareness.[17]

If we look at BINA48's statement quoted above from the perspective of the image of man described above, it is quite understandable. It could also be described here as an image of the "calculable human being".[18] In contrast, there is the question of whether humans can actually be traced back to information processing and computability or the "sum of their data". Harari also raises this critical question: "Are organisms really just algorithms, and is life really just data processing?"[19] From a Christian theological perspective, Puzio contrasts the "predictable human being" with the image of the "unpredictable human being" by understanding "being human as dynamic, unfixable and constantly changing".[20] This denies the idea that being human can be understood as information processing and emphasises the openness of the human being. Theology is accentuated here as a critical element vis-à-vis computer-functionalist and transhumanist images of humanity in that it can stimulate reflection on those images of humanity. This applies to aspects of the intensive focus on self-optimisation and increased efficiency as well as the critical examination of algorithms. In addition, theology adopts a different, holistic perspective on the human being, which is articulated above all in the theological world view of the human being as a relational being.[21]

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16 Ibid., 4.
17 Ibid., 4.
18 See *Puzio*, Der berechenbare Mensch, 66f.
19 *Harari*, Homo Deus, 402 cited from *Fuchs*, ibid., 3.
20 See *Puzio*, Der berechenbare Mensch, 68f.
21 *Puzio*: Der berechenbare Mensch, 68f. (translated from German); also see *Puzio/Filipović*, Personen als Informationsbündel?; and on man as a relational being: *Schwöbel:* Gott in Beziehung. Studien zur Dogmatik.

The anthropology of technology, which, however, is not uniformly defined, is of particular relevance in this discourse. In the following, technological anthropology is understood as scientific reflection "on people in the context of technologies"[22] in all its diversity. The anthropology of technology is fruitful for the discourse insofar as the human self-image is not seen as something static. Rather, it is dependent on the respective context in cultural, temporal and local dimensions: "Thus, the talk of a 'nature of man', which strives for a clear, timeless, 'natural' determination of man's essence, is obsolete."[23] The dynamic moment also applies to the human understanding of technology.[24] The relationship between humans and technology is influenced by the increasing developments in technology, which expand the abilities and perceptions of humans. Elsewhere, Puzio makes specific reference to human–machine interaction using robots (care robots and social robots), which raises specific questions in line with the previous argument: "What is the relationship between humans and technology? What relationships can humans build with technology? And how does technology influence interpersonal relationships?"[25] For theological anthropology, this represents both an opportunity and a challenge: If the new developments in technology and the increasing use of technology provide new emphases in the negotiation of ideas about the human being, it could, according to Puzio, be an opportunity for theology to encourage reflection on its own understanding of the human being and the boundary between the human being and technology.[26] "Aspects such as dignity, relationality, autonomy and freedom, vulnerability and contingency as well as the relationship to creation are gaining new significance in

22 Ibid., 10f. (translated from German); The above definition of the anthropology of technology follows Anna Puzio's definition. This also applies to the definition of technology, which she understands as follows: "Technology here refers to various technologies in the broad sense, both longer-established aids such as glasses and innovative technology such as modern medical technologies or robotics, but does not mean 'techniques' in the sense of arts, activities or methods (such as breathing and meditation techniques or tool use)." *Puzio*: ibid. 11.

23 *Puzio*: Zeig mir deine Technik, 14f. (translated from German).

24 See *ibid.* 15ff.

25 *Ibid.* 19 (translated from German).

26 See *ibid.* 26.

the technology discourse and must be re-examined."[27] The aim is not to create a competing dichotomy between theology and technology, but rather to constructively incorporate the discourse on technology into theology in order to hone the image of humanity accordingly. This can be achieved to the extent that the aforementioned aspects can be constructively discussed and introduced from a theological perspective with regard to new technologies in order to constructively accompany the development of new innovative technologies.

4. Reception of religious education in relation to AI, robotics and religious education

In the following section, the underlying concept of education is first presented and the intentions of religious education, which are important in relation to the previous findings from section three, are pointed out (4.1.) It becomes apparent that religious education is already highly compatible in terms of its conception for the discourse points between man, machine, and a computer-functionalist view of man (4.1 – 4.4).

4.1 Concept of education and religious education

The following explanations are based on a multidimensional concept of education that refers to all facets of being human and is not reduced solely to the training of various skills and abilities. The questions of meaning and orientation are necessarily included.[28] The holistic perspective on people mentioned in chapter 3 is also the basis of religious education.

From the perspective of religious education, this concept of education is obvious, as this concept of education arises from a Christian religious framework of interpretation[29], and religious education, understood as a discipline, is based on the conviction that, firstly, religion requires education and, secondly, the relationship between

27 *Ibid.* 27 (translated from German).
28 See *Ladenthin*: Art. Bildung, 20ff.; *Kumlehn*: Art. Bildung, religiöse, 1.
29 See *Kumlehn*: Art. Bildung, religiöse, 2.

education and religion can be fruitfully processed for pedagogical contexts.[30] With this understanding, the religious pedagogical examination of new technological developments and the new questions associated with them is essential for the education of young people today, as religious education can be said to have an open attitude towards the respective culture of the present.[31]

Education from a Christian religious perspective draws attention to self-restraint, which becomes particularly clear in two respects: On the basis of the image of God articulated in Genesis 1,27, Biehl speaks in the context of education of "owed imagefulness", which refers above all to the relationality of man, his ability to develop his own abilities and his becoming a subject.[32] Secondly, the concept of trust is declared to be meaningful in the context of education. This concept of trust is based above all on the trust in God articulated in Romans 1,17 and the acceptance of man by God. For religious education, this results in the consequence of training the ability to be aware of limits and to perceive the limits of one's own possibilities on the one hand, and to sensitise oneself to what is not possible for the subject on the other.[33] Kumlehn states that "Christian religious education [...] therefore always maintains an awareness of what is withdrawn from the educational process, what is unavailable in life."[34] This awareness includes a critical attitude that is thus embedded in a Christian religious concept of education, which can be enriching above all in terms of criticising the ignoring of fallibility and finiteness as well as excessive striving for perfection.[35]

It should already be noted that this concept of education always includes anthropological and ethical dimensions that characterise the resulting religious education reflections and actions.[36] Religious

30 *Schweitzer*: Religionspädagogik, 64f. (translated from German).
31 See ibid., 64.
32 *Kumlehn*: Art. Bildung, religiöse, 3 (translated from German).; see *Biehl:* Die Gottesebenbildlichkeit des Menschen und das Problem der Bildung, 40–42.
33 See *Kumlehn*: Art. Bildung, religiöse 3; see *Preul*: Evangelische Bildungstheorie, 130f.
34 *Kumlehn*: Art. Bildung, religiöse, 4 (translated from German).
35 See ibid., 4.
36 See *Schweitzer*: Religionspädagogik, 123f.; *Schweitzer* also speaks of implicit "religious provisions" in this regard. In *Schweitzer*, ibid., 68, he explains the anthropological and ethical justifications for education and religion.

education is often justified by these dimensions by articulating the importance of religion in the educational context: Here, religion "can be seen as protecting people from being reduced to purposive rational behaviour and mere social morality".[37] This can be justified by the fact that it represents a fundamental dimension of being human and takes into account the human openness to transcendence.[38] The ethical dimension refers to the motivation stemming from religious conviction to contribute to the education of ethical reflection and action in order to be able to assess (current) ethical challenges and support learning in questions of values.[39] Ultimately, the ethical dimensions thus promote the responsible and autonomous behaviour of the individual and in this way contribute to a successful lifestyle.[40] In addition, the biographically orientated aspect of religious education should be mentioned in this regard, in that learners can be supported in the process of forming their identity and finding meaning.[41] Orientation and personality development are at the centre of this, and identity formation can be seen as a lifelong process. From a religious education perspective, the identity-forming content of religion is of particular relevance.[42] Schweitzer points out that identity formation and finding meaning should not be explicitly understood as goals of religious education but instead have a supportive character. Religious education can serve as an option in the diversity of school education.[43] In addition to the anthropological, ethical and identity-forming character of religious education, which supports the search for meaning, a fundamental orientation towards the subject can be identified, which is also formulated at a conceptual level in religious education. Becoming a subject can be interpreted as a "religious education maxim".[44]

It can be summarised that the religious pedagogical understanding of education already contains an idea of the human being that

37 *Schweitzer*: Religiöse Bildung als Aufgabe der Schule, 94 (translated from German).
38 See ibid., 94.
39 See *Schweitzer*: Religionspädagogik, 68.
40 See *Lindner/Zimmermann*: Herausforderung ethische Bildung.
41 See *Schweitzer*, ibid., 69ff.
42 See *Schweitzer*, ibid., 69–74.
43 See *Schweitzer*, ibid., 72f.
44 See *Schröder*: Religionspädagogik, 172–189; see *Bahr/Kropač/Schambeck*: Subjektwerdung und religiöses Lernen.

contradicts the image of the "calculable human being" outlined in section three.

4.2 Religious education debates on artificial intelligence and religious education

In the debate between technology, theology, and religious education, two perspectives are particularly striking: on the one hand, there is a need for a debate as varied as possible between technology and theology by always relating the specific technology to theology and vice versa, but the above-mentioned presentation of the diversity of prevailing images of humanity in this discourse shows that it can also be helpful to examine the frequently underlying image of humanity. These images of humanity vary and cannot be specifically assigned to a subject area such as "robotics", "AI" or "transhumanism", but certain characteristics often become clear, as partially outlined in section three (3.). Debates on artificial intelligence can also be found in religious education since in recent years in particular, there have been several publications on religious education. Various characteristics can be recognised. Platow cites reasons for a religious education approach to artificial intelligence: Artificial intelligence is certainly considered an important future technology (with a disruptive character), with the result that a media ethics debate is required. Rather, however, it opens up the prospect of perceiving religious education as a scientific discipline that has a special function within theology, but also in relation to other related sciences and social discourse. Religious education in this sense should be understood as "a fundamental theory of education, as a theological theory of education and a specific, theologically based, reflective institutionalised discipline that participates in the public discourse on education."[45] The perception of the self and the world in the context of artificial intelligence proves to be a particularly important content area in Platow's explanations. For example, she refers to the comparison with artificial intelligence explained in section three, in which humans are subject to the prevailing perfection of artificially

45 *Platow*: "Gott mit seinem perfekten Ebenbild zu konfrontieren …," 37 (translated from German).

intelligent systems in some task areas and therefore perceive themselves as deficient. These individual experiences of inferiority can be integrated into one's own personality beyond the specific situation.[46] Moravec's paradox[47] shows that humans generally misjudge which tasks are difficult or easy for a system/robot. Humans compare their abilities with those of the robot (or artificial intelligence). Humans are inferior to robots in terms of information processing or complex logical reasoning because the robot requires comparatively little computing power. Low-level sensorimotor skills, on the other hand, require a large amount of computing power, which, however, takes place unconsciously in humans. We do not even recognise these processes, which we are good at, in an appreciative way. The aim of religious education processes here can be to reflect on the relationship between humans and AI in order to take into account the importance of personality and identity formation mentioned in chapter 4.1. Puzio's above-mentioned image of an "unpredictable" human being could also prove fruitful here as an understanding for religious education processes. At the level of perceptual competence, religious education could contribute to sensitising the perception of the unpredictable human being. The aspects of sensitisation to what is unavailable, a critical relationship to the pursuit of perfection and openness to transcendence, as described in section 4.1, come into play here. At this point, religious education is realised in its existentially educational potential. In relation to AI as a subject matter, we can speak of a reference to one's own existence, in which theological discourses are significant.[48]

In Platow's statements, a strong reference to theological anthropology can already be recognised in the religious education debate on AI. This is also reflected in other publications on religious education, with the result that Pirker places the human being as the

46 See ibid., 40f.

47 See *Moravec*: Mind Children.

48 See *Platow*: Digitalisierung / Big Data / KI, 94. Platow primarily mentions three relevant learning levels in religious education processes on AI, digitalisation and big data: in addition to the third learning level mentioned in the text, she firstly presents the teaching of basic knowledge about the respective technology with reference to the living world and the aim of promoting perception, and secondly the ethical examination of new technologies.

subject at the centre of the discussion[49] and Kluge also agrees that artificial intelligence as a topic can be perceived and dealt with primarily from an anthropological perspective. He justifies this with Schröder's observation that "the imitation and substitution of human action and thought with artificial intelligence"[50] represent both a requirement and a challenge.[51] The relationship between humans and artificial intelligence is also a central theme in religious education's reflection on AI using the example of *replika*.[52] If this topic is extended to the point of trans- and posthumanism, a clear reference to theological anthropology is also evident here.[53]

What they all have in common to some extent is the existential level and the reference to the underlying image of humanity. While in 4.1 a religious pedagogical examination of artificial intelligence and a computer-functionalist view of humanity are already inherent in the understanding of education presented, this can also be heard in religious pedagogical discussions.

4.3 "Religious education in the digital world" and artificial intelligence

The discourse on "religious education in the digital world" is interesting with regard to the reception of the topic of "artificial intelligence" in religious education and the underlying image of humanity outlined above. This refers to the following:

Religious education in the digital world is a programme term that in no way seeks to formulate a separate approach to religious education in contrast to other forms of religious pedagogy. It understands digital education as a cross-sectional topic of religious education and therefore reflects, for example, the significance of digitality for both newly emerging and traditional religious didactic concepts. Incidentally, this applies not only to the cross-cutting topic of digitality, but

49 See *Pirker*: Subjekt Mensch, 229–238.
50 *Schröder*: Religionspädagogik, 97 (translated from German).
51 See *Kluge*: Künstliche Intelligenz als Thema des Religionsunterrichts, 166.
52 See App "replika AI". https://replika.com [15.10.2023]; see *Konz/Scholz*: Körper und Künstliche Intelligenz, 125–141.
53 See *Gärtner*: Digitales ‚Ich'?, 111–123; *Helmus*: Die Visionen des Transhumanismus, 86–95.

also to the second major topic of current educational reforms, that of inclusion and diversity orientation in (religious) education.[54]

In principle, the perspective of religious education in the digital world also emphasises the importance presented above of "an educational theory oriented towards a Christian understanding of man, the world and reality"[55] The personal development and fulfilment of young people is one of the main objectives of religious education. According to Nord and Pirner, this is particularly true in view of the extensive presence of digital media, which is characterised by permanent availability, a wide range of offers and commercial aspects. The extent to which this overwhelming presence of media and the constantly growing importance of internet use also affects young people in Germany was described in the introduction. At this point, Nord and Pirner refer to digitality in the context of digital media. In addition, it can also be asked whether the question of personality development does not also arise in the long-term increase in the range and quality of artificial intelligence and (anthropomorphic) robotics as well as in the importance of data and information processing. At this point, reference should be made to the practical theological examination of robots in the Christian religious practice of Nord and Ess,[56] which shows the importance of existential questions for one's own lifestyle[57] in that theologising[58] on theological and existential topics is highly relevant to this. Using a robot, they show that theological and existential questions can also arise in human–machine interaction. The religious (educational) approach to the world is expanded here to include a practical component in the

54 *Nord/Pirner*; Religionspädagogik in der digitalen Welt, 95 (translated from German).

55 Ibid., 85 (translated from German).

56 *Nord/Ess*: Robotik in der christlichen Religionspraxis, 227–258 (translated from German).

57 By "existential questions" they mean the following: "Existential questions are those that address the mortality and vulnerability, the death of the human being, making them the central marker of human existence" (translated from German), *Nord/Ess*: Robotik in der christlichen Religionspraxis, 235.

58 Theologising means actively engaging with theological and existential topics and questions. It is not about teaching the tradition, but rather about independent reflection on the content by the learners. The term originates from religious education, in particular children's and youth theology; see: *Meyer/Tautz*, Art. Theologisieren, interreligiös.

sphere of digitality. These existential questions automatically become significant for one's own life because they absolutely affect the life of the individual. Dealing with these questions will be imperative in the course of one's life.

Among other things, Nord and Ess cite an existentially orientated form of theology with a correlation between existentialism and theology with reference to Paul Tillich and Karl Jaspers, which, in addition to theological questions, broadens the view for anthropologically formulated questions. These questions become significant because the question of our own existence becomes virulent, especially in the context of artificially intelligent (anthropomorphic) robots. To what extent are they similar to us and to what extent do we differ from them?[59]

4.4 "Theological religious education" and artificial intelligence

The perspective of "theological religious education" is also worthwhile, which refers to the fundamental importance of theology as a reference science for religious education but does not see it as the sole reference science. The emphasis on theology can be understood as follows:

> In this respect, the plea for intensive cultivation of theology as a reference science for religious education in schools aligns with the perspective of appropriate complementarity, especially with the findings of educational science, but also those of religious studies, ethics and philosophy, and thus corresponds to the self-image of religious education as a joint science. Conversely, it is therefore important to warn against marginalising theology itself as a related discipline, which is often done publicly by referring to the above-mentioned religious demographic and church developments.[60]

Through a focus on theology, the in-depth dimension of religious education, including its existential, meaning-oriented and personal profile, is articulated. In addition to this, the form of communication within religious education is based on dialogue in that questions and

59 See *Wallach*: Moral Machines and human ethics, cited in *Nord/Ess*: Robotik in der christlichen Religionspraxis, 251.

60 *Schlag*: Theologische Religionspädagogik, 105f. (translated from German).

searches on practical events take centre stage and less static answers are conveyed. This questioning attitude shapes religious education and can already be interpreted as such in the sense of practising an existentially or religiously motivated mode of encountering the world.

In addition to this, reference should also be made here to the understanding of "religious education as a life science"[61], which Platow also mentioned back in 2020 in the context of AI.[62] An understanding of religious education as a life science emphasises the importance of life usefulness[63] as the concept of wisdom becomes important because: "From there, theological wisdom-based reflection on lived religion can provide qualified, orientating landmarks for one's own life topography and thus for every substantially relevant educational process that is open to measurement, interpretation and results."[64] The examination of wisdom and of an individual path to a good life is an explicit topic. This includes dealing with contingency, one's own finiteness and the acceptance of one's limited influence on the outside world.[65] With regard to artificial intelligence, these aspects become important topics from a new perspective that young people today have to deal with in order to find their way in an accelerating world of increasing reach and increasingly technologically motivated images of humanity in the face of AI.[66] Becoming a subject is central to this: What defines me as a human being in a world with the increasing relevance of robots and artificial intelligence? What gives me orientation in an ever-faster world and increasing mechanisation?

61 See *Schlag*: Religionspädagogik als Lebenswissenschaft, 228–249.

62 See *Platow*: "Gott mit seinem perfekten Ebenbild zu konfrontieren …", 37.

63 For more details on "life usefulness", see *Schlag*: Religionspädagogik als Lebenswissenschaft, 239–241.

64 *Schlag*: Religionspädagogik als Lebenswissenschaft, 248 (translated from German).

65 See ibid., 241–244.

66 On the complexity of a religious pedagogical orientation to promote the good life, see: *Schlag*: Religionspädagogik als Lebenswissenschaft, 245–249.

5. Conclusion and outlook

Through the example of BINA48, various aspects with regard to a theological examination of artificial intelligence have become clear: on the one hand, this concerns the underlying image of man and its reflection and, on the other hand, the relationship between man and machine and its comparative aspect. While a theological examination of artificial intelligence presents a dynamic image of humanity, BINA48 is based on a transhumanist or "calculable" image of humanity, which stands in contrast to this.

In its discussion of artificial intelligence, religious education refers to the dynamic image of man articulated in theology as well as a multidimensional concept of education, which could be said to have a critical attitude towards a "calculable image of man". Essential elements of religious education in the context of artificial intelligence are aimed at an individual becoming a subject and support their competence to critically perceive new technologies as well as a reflected relationship to self-perception in the face of artificial intelligence. An existential reference is essential here, which was emphasised in the presentations of religious education.

Bibliography

Bahr, Matthias/*Kropač*, Ulrich/*Schambeck*, Mirjam: Subjektwerdung und religiöses Lernen. Für eine Religionspädagogik, die den Menschen ernst nimmt, München 2005.

Biehl, Peter: Die Gottebenbildlichkeit des Menschen und das Problem der Bildung – Zur Neufassung des Bildungsbegriffs in religionspädagogischer Perspektive, in: Biehl, P./Nipkow, K. E. (ed.): Bildung und Bildungspolitik in theologischer Perspektive, Münster 2003, 9–102.

Fuchs, Thomas: In Defense of the Human Being. Foundational Questions of an Embodied Anthropology, Oxford 2021.

Gärtner, Claudia: Digitales ‚Ich'? Trans- und Posthumanismus als theologische und religionspädagogische Herausforderung, in: Konz, B./Ostmeyer, K.-H./Scholz, M. (ed.): Gratwanderung Künstliche Intelligenz. Interdisziplinäre Perspektiven auf das Verhältnis von Mensch und KI, Stuttgart 2023, 111–123.

Harari, Yuval N.: Homo Deus. A Brief History of Tomorrow, New York 2017.

Helmus, Caroline: Die Visionen des Transhumanismus – zwischen Technologisierung, Virtualisierung und Digitalisierung, in: Altmeyer, S./Grümme, B./Kohler-Spiegel, H. et al. (ed.): Herausforderung Mensch (Jahrbuch der Religionspädagogik 39), Göttingen 2023, 86–95.

Karger, Kilian: Die Computermetapher – Wie Künstliche Intelligenz das menschliche Selbstverständnis herausfordert, in: Endres, E.-M./Puzio, A./Rutzmoser C. (ed.): Menschsein in einer technisierten Welt. Interdisziplinäre Perspektiven auf den Menschen im Zeichen der digitalen Transformation, Wiesbaden 2022, 41–52.

Kluge, Simon: Künstliche Intelligenz als Thema im Religionsunterricht, in: Altmeyer, S./Grümme, B./Kohler-Spiegel, H. et al. (ed.): Herausforderung Mensch (Jahrbuch der Religionspädagogik 39), Göttingen 2023, 165–175.

Konz, Britta/*Scholz*, Marcel: Körper und Künstliche Intelligenz. (Un-)Verfügbare Beziehungen? In: Konz, B./Ostmeyer, K.-H./Scholz, M. (ed.): Gratwanderung Künstliche Intelligenz. Interdisziplinäre Perspektiven auf das Verhältnis von Mensch und KI, Stuttgart 2023, 125–141.

Kumlehn, Martina: Art. Bildung, religiöse, in: WiReLex, 2015. Online: http://www.bibelwissenschaft.de/stichwort/100082/ [15.10.2023].

Ladenthin, Volker: Bildung. Selbstbildung/Identitätsbildung/Erziehung/Lebenssinn, in: Gräb, W./Weyel, B. (ed.): Handbuch Praktische Theologie, Gütersloh 2007, 17–28.

Lenzen, Manuela: Künstliche Intelligenz. Was sie kann & was uns erwartet. München 2018.

Lindner, Konstantin/Zimmermann, Mirjam: Herausforderung ethische Bildung, in: Lindner, K./Zimmermann, M. (ed.): Handbuch ethische Bildung. Religionspädagogische Fokussierungen, Tübingen 2021, 3–6.

Medienpädagogischer Forschungsverband Südwest: JIM-Studie 2023. Jugend, Information, Medien. Basisuntersuchung zum Medienumfang 12- bis 19-Jähriger. Online: https://www.mpfs.de/fileadmin/files/Studien/JIM/2022/JIM_2023_web_final_kor.pdf [06.02.2024].

Meyer, Karlo/*Tautz*, Monika: Art. Theologisieren, interreligiös, in: WiReLex 2022. Online: https://bibelwissenschaft.de/stichwort/201028/ [13.02.2024].

Moravec, Hans: Mind Children. The Future of Robot and Human Intelligence, Cambridge/London 1990.

Nassehi, Armin: Muster. Theorie der digitalen Gesellschaft, München 2019.

Nord, Ilona/*Pirner*: Manfred L.: Religionspädagogik in der digitalen Welt, in: Grümme, B./Pirner, M. L. (ed.): Religionsunterricht weiterdenken. Innovative Ansätze für eine zukunftsfähige Religionsdidaktik (Religionspädagogik innovativ 55), Stuttgart 2023, 85–100.

Nord, Ilona/*Ess*: Charles: Robotik in der christlichen Religionspraxis. Anschlussüberlegungen an erste Experimente in diesem Feld, in: Nord, I./Merle, K. (ed.): Mediatisierung religiöser Kultur. Praktisch-theologische Standortbestimmungen im interdisziplinären Kontext, Leipzig 2022, 227–258.

Pirker, Viera: Subjekt Mensch – mehr als "das Andere der künstlichen Intelligenz"? In: Nord, I./Petzke, J. (ed.): Religionsdidaktik. Diversitätsorientiert und digital. Ein Praxishandbuch, Berlin 2023, 229–238.

Platow, Birte: Digitalisierung / Big Data / Künstliche Intelligenz, in: Simojoki, H./Rothgangel, M./Ulrich H. J., K. (ed.): Ethische Kernthemen. Lebensweltlich – theologisch-ethisch – didaktisch. (Theologie für Lehrerinnen und Lehrer), Göttingen 2022, 85–95.

Platow, Birte: "Gott mit seinem perfekten Ebenbild zu konfrontieren …" Religionspädagogische Reflexionen zu Künstlicher Intelligenz, in: Religionspädagogische Beiträge 82, 2020, 37–47.

Preul, Reiner: Evangelische Bildungstheorie, Leipzig 2013.

Puzio, Anna: Zeig mir deine Technik und ich sag dir, wer du bist? – Was Technikanthropologie ist und warum wir sie dringend brauchen, in: Diebel-Fischer, H./Kunkel, N./Zeyher-Quattlender, J. (ed.): Mensch und Maschine im Zeitalter "Künstlicher Intelligenz". Theologisch-ethische Herausforderungen (Leiten. Lenken. Gestalten 45), Berlin 2023, 9–28.

Puzio, Anna: Der berechenbare Mensch im Transhumanismus. Der neurowissenschaftliche Diskurs in der transhumanistischen Anthropologie als philosophisch-theologische Herausforderung, in: Endres, E.-M./Puzio, A./Rutzmoser C. (ed.): Menschsein in einer technisierten Welt. Interdisziplinäre Perspektiven auf den Menschen im Zeichen der digitalen Transformation, Wiesbaden 2022, 53–73.

Puzio, Anna/*Filipović*, Alexander: Personen als Informationsbündel? Informationsethische Perspektiven auf den Gesundheitsbereich, in: Fritz, A./Mandry, C./Proft, I. et al. (ed.): Digitalisierung im Gesundheitswesen: Anthropologische und ethische Herausforderungen der Mensch-Maschine-Interaktion, Herder 2021, 89–113.

Schlag, Thomas: Theologische Religionspädagogik, in: Grümme, B./Pirner, M. L. (ed.): Religionsunterricht weiterdenken. Innovative Ansätze für eine zukunftsfähige Religionsdidaktik (Religionspädagogik innovativ 55), Stuttgart 2023, 101–115.

Schlag, Thomas: Religionspädagogik als Lebenswissenschaft, in: Zeitschrift für Theologie und Kirche, 116/2, 2019, 228–249.

Schröder, Bernd: Religionspädagogik, Tübingen ^{2}2021.

Schweitzer, Friedrich: Religiöse Bildung als Aufgabe der Schule, in: Rothgangel, M./Adam, G./Lachmann, R. (ed.): Religionspädagogisches Kompendium, Göttingen ^{7}2012, 92–105.

Schweitzer, Friedrich: Religionspädagogik (Lehrbuch Praktische Theologie, Band 1), Gütersloh 2006.

Stalder, Felix: Kultur der Digitalität, Berlin [5]2019.

Zehnder, Matthias: Die Digitale Kränkung: Über die Ersetzbarkeit des Menschen, Basel 2019.