

# ROBOTICS IN CHRISTIAN RELIGIOUS PRACTICE

## REFLECTIONS ON INITIAL EXPERIENCES IN THIS FIELD

Ilona Nord/Charles Ess in cooperation with Jörn Hurtienne and Thomas Schlag

In this article<sup>1</sup> we offer initial insights into the fairly new interdisciplinary and international domain of robotics in Christian religious practice.<sup>2</sup> We are a group of scholars in media ethics, practical theology/religious education, and human computer interaction, who have been engaged in this discourse since 2017.

A natural starting point is our study of *BlessU2*, a “blessing robot,” a device which received considerable recognition from the global public at the Wittenberg 500<sup>th</sup> reformation anniversary in 2017.<sup>3</sup> We thus begin with the results of this study. Secondly, we will briefly address the relevant theses from Gabriele Trovato et al., as presented in their 2019 article on so-called theomorphic robots<sup>4</sup> – followed by our interdisciplinary discussion of their approach. Finally, we draw conclusions for further work on the field of “religious robots.”

<sup>1</sup> This article was first published in German, see Ilona Nord/Charles Ess in Kooperation mit Jörn Hurtienne und Thomas Schlag, Robotik in der christlichen Religionspraxis. Anschlussüberlegungen an erste Experimente im Feld, in: Kristin Merle/Ilona Nord (Hg.), Mediatisierung religöser Kultur. Praktisch-theologische Standortbestimmungen im interdisziplinären Kontext. Leipzig 2022, 227–258.

<sup>2</sup> For a first overview, also in relation to other religions, see Simon Balle/Charles Ess, Robotics, Ethics, and Religion, in: Heidi Campbell/Pauline Hope Cheong. (eds.), The Oxford Handbook of Digital Religion, Oxford 2022, p. C27.S1–C27.S10 <https://doi.org/10.1093/oxfordhb/9780197549803.013.27>.

<sup>3</sup> BlessU2 was developed as a contribution of the Protestant Church in Hessen and Nassau for the EKD-wide Wittenberg Reformation anniversary and exhibited, cf. also <https://lichtkirche.ekhn.de/archive/wittenberg-2017/mediales-zu-blessu-2.html> (01.08.2023).

<sup>4</sup> Gabriele Trovato u. a., Religion and Robots: Towards the synthesis of two extremes, in: International Journal of Social Robotics (2019), p. 1–18.

Somewhat more carefully: Section 1 offers starting points within the perspectives of Christian religious practice: here, the blessing robot is both cause and occasion for doing religion and theologizing in the context of existential questions (1.1). We continue with perceptions in the field of religion regarding “Discursive Design Theory” (1.2). The interaction of humans with computers as posing questions for theological standardization of religious practice is focused upon in 1.3. Section 2 reconstructs the HRI/HCI-initiative to develop theomorphic robots in a twofold manner, i.e., the idea of developing theomorphic robots (2.1) and the concept of theomorphic robots: Questions and objections (2.2). In this part of the article we raise discussion points concerning the relationship between technology and religion and the need for sharpening the understanding of religion within the research field. Section 3 closes with propositions and alternatives.

## 1. Starting points from the perspective of Christian religious practice

Before the emergence of digital transformation processes, the primary function of media was to mediate interpersonal communication: in the future, by contrast, the development of various devices relying on Artificial Intelligence designed to follow social norms and/or simulate sociability will play an increasingly important role. Currently, chatbots and voice-activated “virtual assistants” are already commonly used, as are zoomorphic<sup>5</sup> and android<sup>6</sup> robots for interpersonal engagement and as social counterparts – for example, in care of the elderly. There are still very few examples of such devices that refer to one or more religions *per se*, but it can be assumed that this will change. As a start: the Corona pandemic made the need for digital practices even within the churches visible for the first time. The long-term consequences of these

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<sup>5</sup> Cf. Ilona Nord, Kommunikation mit Robotern: ein christliches Plädoyer für die Wahrnehmung dessen, was irritiert [Communication with robots: a Christian plea for the perception of what irritates], in: Monika C. M. Müller (Ed.), Der Mensch als Vorbild, Partner und Patient von Robotern: Bionik an der Schnittstelle Mensch – Maschine [Humans as role models, partners and patients of robots: Bionics at the human-machine interface] (Documentation einer Tagung der Evangelischen Akademie Loccum vom 1. bis 2. Oktober 2008 [Documentation of a Conference of the Protestant Academy Loccum, October 1 - 2, 2008]), Loccum 2009, p. 103–114.

<sup>6</sup> Cf. Swantje Luthe/Ilona Nord/Jörn Hurtienne/Diana Löffler, Segensroboter »BlessU2« [Blessing Robot »BlessU2« ], in: Pastoraltheologie [Pastoral Theology] 108 (2019) 3, p. 107–123.

shifts cannot be predicted with much confidence<sup>7</sup>: but emerging insights into these sorts of processes can at least provide initial points of orientation.

In retrospect, especially regarding historical media transformations<sup>8</sup>, well-known questions and traditions regarding the use and production of media come into a new focus along the following lines of interrogation: How can religious interactions or communication become more accessible? Which habits of use and design should they match?

Moreover, in contrast with perspectives that view mediation processes in and of religions as entirely new phenomena, it has to be acknowledged that specifically the topic of robotics in religions certainly has historical dimensions:

Robots in religion may seem to be a uniquely novel issue, with contemporary research as a vanguard, cutting-edge enterprise. But it is more correct to say that robots are making a comeback in religion, since robots have actually had quite a long history with religion.<sup>9</sup>

Trovato et al. agree and draw attention to the logic of the use of technology within religious practices:

By [blurring, I.N./C.E.] the line between religion and magic, the Church kept spreading the faith through the power to astonish, making use of an “enchantment of technology” that was effective for that time. From a design point of view, this was achieved by having the robotic element hidden, i.e., showing automata as lifelike and the impossibility of distinguishing them from the object of inspiration. Through the Middle Ages and later, mechanical angels and fire-breathing devils were designed. Automata brought to life Biblical passages, such as in the automaton crucifixion scene from ca. 1700, made of wood and in which the figures move.<sup>10</sup>

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<sup>7</sup> Cf. [www.contoc.org](http://www.contoc.org) (11.11.2021).

<sup>8</sup> Cf. Johannes Burkhardt, The Reformation - Religion as Media Event, in: Ilona Nord/Hanna Zipernovsky (Ed.), Religious Education in a mediatized World, Stuttgart 2017, p. 95–103.

<sup>9</sup> Balle/Ess, Robotics (see note 1).

<sup>10</sup> Trovato u. a., Religion and Robots: Towards the synthesis of two extremes, in: International

This definitely supports taking up the further debates concerning religion and technology or robotics in order to explore the history of Christian experiments with technology. As a start, the only specific example in Trovato et al. is the impressive 16th century “Clockwork monk”, a pre-robotic figure that certainly also had an influence on the contemporary prototype Santo, a small (Catholic) saint-like figure offering prayers. According to a further study, since the 18<sup>th</sup> century robots have been less associated with faith and magical symbolism but rather more with power and efficiency, “as the power of creation has shifted from gods to humans.”<sup>11</sup> Whether the use of technology actually contributes to secularization and/or whether it produces surplus interpretations that contains magical dimensions is, of course, also a topic here. But to summarize so far: these first examples of the uses of technology within religious practices provide a narrow but impressive basis for changing what is for many a typical view within Christianity – namely, that religious robots are quite novel. In fact, within this large family of religions there are various attitudes towards the use of technology, including some that led to innovative development of technology and/or reflections thereon.<sup>12</sup> For example, a literary insight into a pre-digital tradition of reflection on automation is offered by the legend “The Golem”<sup>13</sup>, impressively narrated by Isaac Bashevis Singer. Moreover, the novel “Frankenstein: or, the modern Prometheus”<sup>14</sup> by Mary Shelley, which is still deeply influential today, in particular as it established one of the literary foundations for science fiction literature and film.

Nowadays, mediatization as well as digitalization processes are not unusual, but are rather more or less fully incorporated into our lifeworlds. Robots in religions, however, still evoke diverse, often conflicting reactions, at least in the European and especially German contexts – indeed, not only in the Christian ones, but at least in those of the Abrahamic religions more broadly. At the same time, it is important to note that such turmoil is not characteristic for cultures and contexts influenced by Shinto and Buddhism, since the relationship

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Journal of Social Robotics (2019), p. 1–18: 4.

<sup>11</sup> Ibid.

<sup>12</sup> Cf. Ibid.

<sup>13</sup> Isaac Bashevis Singer, *Der Golem. Eine Legende [The Golem. A legend]*, Berlin 2020.

<sup>14</sup> Mary Shelly, *Frankenstein oder Der moderne Prometheus [Frankenstein or The Modern Prometheus]*, translated by Gert Leetz, Leipzig/Frankfurt a.M. 2008 (London 1818).

between people and technology or mind and matter is defined differently in these traditions – as we will see below, non-dualistically in contrast with Western dualisms.<sup>15</sup>

Based on our overview of current scholarship, we can also say that the current and future use of robotics in the field of religions evokes new (practical) theological fields of discussion: these in turn affect the commonly identified core issues of *Digital Religion* research and scholarship, namely: authority, identity, community, and ritual, as well as the concept of religion in itself.<sup>16</sup>

### *1.1. The blessing robot as the catalyst for doing religion and theologizing in the context of existential questions*

In our European and German contexts, these fields of discussion were opened up by the blessing robot *BlessU2*. The robot – basically a recycled ATM driven by simple algorithms – was first presented to a broader public as an art installation with the slogan “Experiencing bliss – Moments of Blessing” at the World Exhibition for the Wittenberg reformation anniversary in 2017.<sup>17</sup> The response was significant: more than 10,000 people experienced some sort of contact with the blessing robot; in addition, the larger media response showed global and polarised resonance from both religious and non-religious contexts. The interesting observation for our research was that the blessing robot, by eliciting different and sometimes (strongly) negative reactions, revealed how the people encountering it understood the religious practice of blessing; which components of blessing they considered indispensable; and where they now identified breaks with previous attitudes and ideas about religious interaction or communication in their encounter with this robotic artefact. The encounter with the robot installation thus sparked fundamental questions about the understanding of religious practice.

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<sup>15</sup> Cf. Gereon Kopf, Does AI Have Buddha-Nature? Reflections on the Metaphysical, Soteriological, and Ethical Dimensions of Including Humanoid Robots in Religious Rituals from one Mahāyāna Buddhist Perspective, in: Marco Nørskov/Johanna Seibt/Oliver Santiago Quick (Ed.), Culturally Sustainable Social Robotics – Proceedings of Robophilosophy, Frontiers in Artificial Intelligence and Applications, Aarhus 2020, p. 594–600.

<sup>16</sup> Cf. Heidi Campbell (Ed.), Digital Religion, New York 2013.

<sup>17</sup> Diana Löffler/Jörn Hurtienne/Ilona Nord, Blessing Robot BlessU2: A Discursive Design Study to Understand the Implications of Social Robots in Religious Contexts, in: International Journal of Social Robotics 9 (2019) 1, Doi:10.1007/s12369-019-00558-3; Luthe/Nord/Löffler/Hurtienne, Segensrobooter [Blessing Robot] (see note 5).

As part of a study,<sup>18</sup> we analyzed the reactions of visitors to *BlessU2*. Visitors to the installation were invited to submit comments in a guestbook – i.e., so as to avoid predefined questions – resulting in handwritten comments from 1,923 people. These were evaluated vis-à-vis the research focus on “what effect do people attribute to an act of blessing offered by *BlessU2*?”. Overall, 51% of the comments were positive (e.g., “An original idea, I also felt 'genuinely' blessed”), 29% were neutral (e.g., “I rather believe in the power of personal blessing, which can only happen (vicariously) through a human being”) and 20% were negative (e.g., “For me, digitalization in the theological field is a problem. - Blessing through apps? – Just one more possibility for loneliness”).<sup>19</sup>

These acts of commenting can themselves be understood as doing religion<sup>20</sup> and reflection on these comments as theologizing<sup>21</sup>, because the interviewees explored their own interactions by reacting – as already mentioned – to deliberate irritations, even provocations, and reflecting on these for themselves. In the case of blessing, this means that the researchers can explore what meaning the blessing has for the interactors personally, what forms of design and articulation are indispensable for them in blessing and being blessed, and what reasons there are for this in each case. This experiment had the distinctive characteristic that the religious practice as well as the reflection on it were not predetermined (e.g., via a structured questionnaire), obligatory or perceived as fixed in their form (i.e., as would be the case, for example, in a more formal environment, such as a church service).

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<sup>18</sup> Cf. on this, the texts cited in footnote 15. Between the Würzburg Institutes for Protestant Theology, Chair of Religious Education and the Institute Man-Computer-Medien, Chair of Psychological Ergonomics there are meanwhile further projects. Cf. for example Coteach: <https://www.uni-wuerzburg.de/lehre/coteach/startseite/> (12/17/2021).

<sup>19</sup> Cf. Löffler/Hurtienne/Nord, Blessing Robot (see note 16), 9.

<sup>20</sup> Frank Hillebrandt, Die Soziologie der Praxis und die Religion – ein Theorievorschlag [The sociology of practice and religion - a proposed theory], in: Anna Daniel/Franka Schäfer/Frank Hillebrandt/Hanns Wienold (Ed.), Doing Modernity – Doing Religion, Wiesbaden 2012, p. 25–57.

<sup>21</sup> The term theologizing here describes reflections on actions that children, young people or adults articulate on theological questions and topics. It is basically intended as a form of religious education to promote lay theologies is intended. In this context, however, hardly any work has been done on digitality. For a more complex understanding of theologizing, cf. relevant Thomas Schlag/Friedrich Schweitzer, Brauchen Jugendliche Theologie? Jugendtheologie als Herausforderung und didaktische Perspektive [Do Young People Need Theology? Youth Theology as a Challenge and Didactic Perspective], Neukirchen-Vluyn 2011. A virtual conference organized by Thomas Schlag et al. in Zurich in spring 2021 will be followed by a volume bringing together digitization processes and theologizing.

It should be further mentioned that the reactions in the guestbook reflected a non-specific reference to all three areas that can be addressed in the field of interaction with *BlessU2*: These start with human-computer interaction (HCI), which is prioritized here, but further include human-robot interaction (HRI), and, last but not least, human-machine interaction (HMI).

It is not possible within this framework to explain the concept of “Doing Religion” more comprehensively. But this much should be mentioned prior to our theoretical classification: It describes a theoretical concept in connection with a sociology of practice that understands “Doing Religion” as a reality. This is a matter of very preliminary theory formation, within theology as well, one that turns to the practical and sensory-based dimensions of human existence; the aim is make use of a distinctively powerful term in this theoretical tradition, the “richness of the sensual”<sup>22</sup>, as part of the argumentation. Sharpening the theoretical points in this way is particularly important in the field of digitalization processes, because here it otherwise seems plausible that in everyday life, the materiality or the corporeality of performed practices could become increasingly less important.<sup>23</sup> HCI in particular, which otherwise promotes the dematerialization of practices in many contexts, nonetheless shows potential for different approaches and thus for alternative orientations: In some areas, it is working on not only taking into account the significance of the human body for the emergence and reproduction of practice, but also beginning with *embodiment* as a research starting point and making *well-being* in the experience of users a priority in development work.<sup>24</sup>

The concept of theologizing can also only be briefly developed here.<sup>25</sup> Within the framework of adapting the philosophy of children in the context of religious education – and thus expanded as children's theology and later as youth theology – a didactics of religion developed from around the mid-1990s that can be understood as a hermeneutics of active appropriation rather than the teaching of religious competencies. In the meantime, the concept of theologizing no longer refers only to the contexts of children's education and young people, but is also used in the congregational context and thus for adult education. The didactic orientation and

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<sup>22</sup> Henri Lefebvre, *Soziologie nach Marx* [Sociology according to Marx], Frankfurt am Main 1972, p. 35.

<sup>23</sup> Cf. Hillebrandt, *Soziologie der Praxis* [Sociology of practice] (see note 19), p. 26.

<sup>24</sup> Cf. Sarah Diefenbach/Marc Hassenzahl, *Psychologie in der nutzerzentrierten Produktgestaltung* [Psychology in user-centered product design], Berlin 2017.

<sup>25</sup> Mirjam Zimmermann, Art. Kindertheologie [Children's Theology], in: *Wissenschaftlich Religionspädagogisches Lexikon im Internet* [Scientific Encyclopedia of Religious Education on the Internet.] ([www.wirelex.de](http://www.wirelex.de)), 2015 (08/01/2021).

methodological design of theologizing intends, among other things, an amateur theology that deals with all the relevant topics of the systematic-theological tradition. Nor does it stop there, but further devotes itself to existential topics, which are admittedly contained in the main areas of systematic theology. The existential theme *par excellence*, namely that of dealing with death, dying, and mourning, which are, so to speak, the greatest threats to worldly existence, is an important one, but it is not treated separately from others. After all, this “most important” topic is followed by others, which, for example, address the experience of blessing in the care for and preservation of life, and even one’s happiness or joy (*Glück*) in life.

Theologizing is thus to be understood as a reflective practice that induces a “personal theology” and therefore provides the possibility for people to reflexively develop (learn) (their) religious practice individually and self-actively. In this project, theologizing is to be understood as a form of reflection for exploring our experience of (religious) practices: this also allows the people interacting with *BlessU2* to have their say ethically on topics such as “opportunities and risks of digital religious practice” and/or encourages them to work on explicitly theological questions, such as whether human-computer interaction could further and enhance God-human communication.

It can be assumed that explicit ties to Christian religion, its religious practices, and the conscious attitude towards it in the form of a Christian religiosity that is both appropriated and consciously reflected upon – all of these are not naturally common forms of interaction and communication in society as a whole, nor are these widespread in the larger public.<sup>26</sup> Thus, the experiment with *BlessU2* shows that and how it has created just such an opportunity. It initiated quite personal and yet not completely individual communication, because the installation did not provide a protected space for blessing that could be entered into alone, but rather allowed spectators during the act of blessing: in this sense, it was a religious practice that could be entered publicly. But contrary to usual religious practice in church contexts, religious communication took place here without any further preconditions and/or follow-up communication.

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<sup>26</sup> Cf. Detlef Pollack/Olaf Müller, Religionsmonitor – verstehen was verbindet. Religiosität und Zusammenhalt in Deutschland [Religion Monitor - Understanding what connects. Religiosity and Cohesion in Germany] 2013, online available at: <https://www.bertelsmannstiftung.de/de/publikationen/publikation/did/religionsmonitor-verstehenwas-verbindet-religiositaet-und-zusammenhalt-in-deutschland> (07/21/21).

The focus was on blessing, a religious practice that is taken up in diverse ways among many different religions.<sup>27</sup> In Christian terms, it is about the promise of God's blessing, a "speaking well" of life, in which, for example, for the Jewish and Christian religions, there is a reminder that God himself spoke-speaks "well" of creation (Gen. 1.31). If we turn the perspective from the doctrine of God into theological anthropology, this means: Blessing and being blessed is a practice that is supposed to have "enlivening" effects, for example by empowering<sup>28</sup> people through the attention and recognition they receive.

From the perspective of HCI/HRI, it was precisely this point that offered possible conceptual connections with the thesis that *BlessU2* further relates to existential questions, or at least creates the possibility of raising existential questions. Such questions can be seen, for example, in whether, when and how an assurance from God can have what meaning and effect on one's own way of life. If we formulate this connection, as already suggested, less *theologically* but more *anthropologically*, the horizon opens to an understanding of *Existenz* (existence) and *existential* questions that can be found specifically in the philosophy of Karl Jaspers. At the same time, these questions, reflecting the larger background of 20<sup>th</sup> ct. existentialism, are taken up in the philosophical theology of Paul Tillich: Existence [*Existenz*] is the being-present [*Dasein*] of the human being, which may manifest itself first of all vis-a-vis the threat of non-being [*Nichtsein*]. Existential questions are those that address the mortality and vulnerability, the death of the human being, making these the central markers of human existence – what Jaspers identifies as the borderline or limit-situation [*Grenzsituation*]:

"For Jaspers, the limit-situation—of loss, death, crisis, guilt, conflict, and love—is vital since it requires of the individual human being to act and entails the possibility of realizing one's "Existenz": "the limit-situation of being definite calls upon Existenz to decide its destiny" ([Jaspers 1932] 1970 , 185) and "(w)e become ourselves by entering with open eyes into the limit-situations" (179, translation modified). (Lagerkvist and Andersson 2017, 554f.)"<sup>29</sup>

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<sup>27</sup> Cf. Andreas Feldtkeller, *Segen aus Sicht der Religionswissenschaft* [Blessing from the perspective of religious studies], in: Martin Leuenberger (Ed.), *Segen*, Tübingen 2015, p. 25–48.

<sup>28</sup> Cf. Michael Domsgen, *Religionspädagogik* [Pedagogy of Religion], Leipzig 2019.

<sup>29</sup> Charles Ess, *Eine philosophische Anthropologie für eine post-digitale Theologie* [A Philosophical Anthropology for a Post-Digital Theology], in: Wolfgang Beck/Ilona Nord/Joachim Valentin (Hrsg.), *Theologie und Digitalität, Ein Kompendium* [Theology and Digitality, A Compendium], Freiburg 2021, p. 480–497: 485, C. Ess thus takes up an interpretation by Amanda Lagerkvist. See also Jaspers, Karl. [1932] 1970. *Philosophy*, vol. II. Chicago: University of Chicago Press and: Lagerkvist. Amanda & Andersson, Yvonne. 2017. "The grand interruption: death online and mediated lifelines of shared vulnerability." *Feminist Media Studies* 17 (4): 550-564, <http://dx.doi.org/10.1080/14680777.2017.1326554>.

An existentially oriented theology tries to correlate existentialism and theology and therefore formulate its answers in relation to these existential contexts and questions: Blessing as an affirmation, as pronouncing something to be good (*gutsprechen* in German), a benediction (*bene dicere* in Latin), is basically the ritual of a religious practice that gives priority to life in the face of all threats of its annihilation, its non-being or nothingness – mythologically speaking, the Fall – and seeks to sanctify it.<sup>30</sup> “Doing religion” and “theologizing” are practices that thus *produce* religion, which in the contexts unfolded here are connected to the great philosophical questions of existence. In addition to questions about life's borderline situations<sup>31</sup>, the psychologically oriented fields of HCI/HRI also bring into our discussion the importance of the existential needs of ‘everyday’ life. They are oriented towards possible sources of positive experiences: Connectedness, safety, competence, popularity, stimulation, autonomy, and meaningfulness.<sup>32</sup> These needs raise life's issues in smaller coin than they are formulated in philosophical existentialism and its main references to death and vulnerability. Yet those ‘important and most important’ life questions become apparent through them. For the permanent, forced renunciation of autonomy, the loss of connectedness to other persons, prolonged phases in which the feeling of meaninglessness must be endured – all of these threaten existentially, including in the sense that the attachment to life is loosened and the experience of the joy of living is impaired.

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<sup>30</sup> Cf. Paul Tillich, Systematische Theologie, Bd. III: Die Existenz und der Christus [Systematic Theology, Vol. III: Existence and the Christ], Berlin/ New York 1987 (1951).

<sup>31</sup> Cf. on the understanding of religious practices as ways of dealing with borderline situations.

within the Christian religion: Michael Moxter, Religion, in: Ralf Konersmann (Ed.), Handbuch Kulturphilosophie [Handbook Philosophy of Culture], Stuttgart 2012, p. 238–244.

<sup>32</sup> Cf. e.g. the Experienced Design project by Marc Hassenzahl: <https://hassenzahl.wordpress.com/experience-design-tools/> (07/21/21).

## 1.2. Religion and Discursive Design Theory

If we take up the perspectives of HCI, the use of *BlessU2* can be perceived as a signature existential discursive design-experiment.<sup>33</sup> In *discursive design*, possible future technologies are made visible or tangible in order to learn about their potential impact in specific contexts – in this case, religion and the practice of blessing. Discursive design intends a process in which “a thing” – in our case, a blessing – can be changed and thus perceived, interpreted, and evaluated anew for one's own life history and narrative. From the perspective of the test subjects, a *doing-religion* process occurs – as already described above – which allows forms of design and articulation in blessing and being blessed to become explicit.

*BlessU2* made it possible to experiment with one's own religious practice and religiosity as well as one's reflections on these: this was perceived as a thoroughly surprising and unrehearsed possibility for acting, which precisely for this reason opened up possibilities for interaction and communication in, with, and about religion. The feedback in the guest book of the *BlessU2* exhibition alone showed how the Blessing Robot set developmental processes of religious practice in motion and initiated theological reflection on the use of media for it. This is particularly evident in the frequent criticism that the blessing robot has become a substitute for a priest or pastors. In other words, like other robots, the blessing robot contributes to a kind of *efficiency* of processes and acts, but this now happens in an arena of events that, it is objected, should not be understood primarily in terms of “efficiency.”

In many respects, technology developments within HCI are committed to the efficiency factor in processes and actions; but, as already noted above, especially in the topic area of social robotics, HCI shows other objectives such as the inclusion of needs such as autonomy aspirations, entertainment, or social proximity.<sup>34</sup> But let's stay with the element of efficiency for the moment.

The guiding principle for many areas of church culture concerned with public communication or interaction is certainly an attitude that Martin Buber once summed up in the

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<sup>33</sup> Cf. Bruce M. Tharp/Stephanie M. Tharp, *Discursive Design: Critical, Speculative, and Alternative Things*, Cambridge/Mss 2018.

<sup>34</sup> Cf. Marc Hassenzahl/Sarah Diefenbach, Well-being, need fulfillment, and Experience Design, in: *Proceedings of the DIS 2012 Workshop on Designing Wellbeing*, June 11.–12. 2012, Newcastle/UK.

following pithy saying: “Success is not one of the names of God.”<sup>35</sup> In this sense, it can be understood why there are no known efficiency studies to date on the design of blessing actions in the ecclesiastical and theological spheres. It is not common to speak about the success of religious communication/interaction in a theological sense, even if increasingly church-theoretical discussions refer to communication-strategic and therein efficiency-oriented aspects. At the same time, it can certainly be said that the question of the efficiency of church processes is by no means completely foreign to the Christian tradition. The belief that blessings can be visibly manifested, e.g., in many children or financial prosperity, is also certainly a common one within some Christian religious communities.

Moving from these views to consider more specifically whether the effect of blessing could also depend on the shape or design of a ritual, its affiliated dress, etc., such that this design would have to be adapted to different situations and contexts of use, are questions that have always been asked implicitly within practical theology; but these rarely become explicit, rarely researched, or discussed experimentally. They are close to a question that seems slightly blasphemous – i.e., whether we might credit the design of acts of blessing with degrees of effectiveness as hence basically independent of God's providence. The question of what influence human design has on God's ways of working is hardly common in practical theology, but it now comes into the foreground through design tasks with a different meaning than before. It asks, What actually guided the forms of design chosen within the tradition and when, where and why they were shaped in the way they are carried out today? In short: What logics of acting and behaving (“logics of action” for short) do blessing gestures follow?

Finally, the experiment with *BlessU2* shows for *Discursive Design Theory* which takes up the personal encounter as a conditioning factor of religious interaction or communication. Anyone who has followed the discussions within the churches, especially during the Covid 19 pandemic, will already have come across the statement that personal encounters in embodied co-presence with others in a physical space, preferably a church space, are necessary for worship and blessing. In the *BlessU2* guest book, this is reflected in statements that after all, the blessing robot cannot look at you in a deeper sense. The gaze, the living eyes of the

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<sup>35</sup> Martin Buber, »Erfolg ist keiner der Namen Gottes.« [»Success is not one of the names of God«], in: Frankfurter Hefte 6 (1951), p. 195f.

blessing person who looks at me personally, is at least one feature that characterizes the human encounter and cannot be replaced by a human-computer/robot interaction.<sup>36</sup>

Digital embodiments of Aaronic blessing (Num. 6.22) and being blessed thus obviously evoke rejection among some of the interactors. Two patterns of attitude or perception lie behind this: firstly, that the practice of blessing is dependent on continuity with acts of worship on site in a church space, and secondly, that only human beings are taken to be possible representatives of divine blessing, since after all only human beings are believed to be the image of God and are thus legitimized to bless.

However, in texts that address robotics as well as Artificial Intelligence (AI), especially outside of Christian theology, this second premise is being questioned. That humans are to be seen as the crown of creation is increasingly controversial; a shift away from anthropocentric to cosmological theoretical horizons illustrates one way in which these approaches work.<sup>37</sup>

Nevertheless, it is quite possible that part of the rejection of *BlessU2* had to do with the high regard in which humans are held as representatives of God and thus with the human form of the robot. In order to investigate this hypothesis, the Würzburg project Coteach<sup>38</sup> will therefore develop interreligious blessing spaces in virtual realities and augmented realities that are not anthropomorphically designed and examine how their acceptance (and lack thereof) can be assessed.

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<sup>36</sup> The eye argument has been in the guestbook, published under: <https://www.evangelisch.de/inhalte/145917/11-09-2017/diskusion-um-segensroboter-blessu2-evangelischer-akademie-frankfurt> (15.07.2021), but also the formation of public opinion on social robotics as e.g. is repeatedly shown in films on this subject, most recently Rudolf Worschecch, Ich bin dein Mensch [I am your human], in: epd-film 6/2021, p. 71.

<sup>37</sup> Cf. e.g. Murray Shanahan, Die technologische Singularität [The technological singularity], Berlin 2021 (englisch: MIT-Press 2015). Also Yuval Harari, Sapiens. A Brief History of Humankind, London 2015 is an example of this; see also Klaas Huizing's contribution to Harari in this volume.

<sup>38</sup> Coteach Work Package 6: <https://www.uni-wuerzburg.de/lehre/coteach/arbeitspakete/ap6-vr-lehr-lernszenarien-in-interreligioesen-segensraeumen/> (07/20/2021).

### *1.3. Human Computer Interaction poses questions for a theology of religious practice*

The central idea of this section is as follows: The debates surrounding the blessing robot *BlessU2* are exemplars for current debates about Christian religious practice in a digital culture and the challenges that (practical) theology and church practice have to face in these transformation processes. A core problem emphasized here is the crisis of interpretation triggered by the question of what parts technology, computers and machines in general, play in religious interaction or communication, insofar as they are involved in these. Are they or will they become determining factors in human-God communication/interaction and if so, how could these influences be described?

Within religious studies and religious phenomenology, this field of questions has traditionally been discussed in relation to the topic of magic. On the one hand, magic is a field of religious practices where their methods and media are visibly brought into focus. On the other hand, magic is a dimension of religious practice in which the subject-object relationship<sup>39</sup> and the dualistic boundaries of world perception that lie within it are at least partially suspended and interrupted, so that a dissolution of boundaries, e.g., of one's own individuation vis-à-vis experiences of participation, becomes possible. This also includes experiences with the presence of God in one's own life.

#### *1.3.1 The question of methods and media in religious practice*

If we turn in this context towards the criticism directed at *BlessU2* – namely, that the robot threatens to replace a minister<sup>40</sup> – it becomes clear that this is not only a problem of media ethics, according to which a competition between man and machine must be dealt with, which also raises the question of the authorization of the machine for religious practice. Moreover, this criticism focuses on whether or not access to a robotically controlled and automated act of blessing in fact promotes the magical dimension in the understanding of blessing: a person asks for a blessing and receives the desired word of God at the push of a button, as fully “effectively” (or successfully) as possible. On the one hand, there is the danger of wanting to reduce God's Word to something accessible to and so under one's own control or disposal. On the other hand,

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<sup>39</sup> Here related to the common paradigm within modern Western philosophy, especially German idealism.

<sup>40</sup> Luthe/Nord/Löffler/Hurtienne, Segensroboter [Blessing Robot] (see note 5), p. 118.

a technical installation acquires a religious meaning that, in the broadest sense, is credited with the possibility of establishing an interaction/communication with God: but now as formulated less in the mode of a personal image of God (such as a human minister) but which nonetheless helps to establish a connection to the divine and which therefore also appears to participate in the divine. In this respect, we need to explore and develop, both within Systematic Theology as well as in Practical Theology, how such technologies can thus be understood as part of God's creation. Manifestly, these technologies are rich in multiple meanings in people's perceptions, as is shown by its use in religious practices, and which, for example, leads to emotional attachments to technical devices, etc.<sup>41</sup>

So, if we assume that a technical installation somehow participates in the effect of a religious practice, would it not be logical that *BlessU2* should also have been blessed, e.g., before it starts its “work” as a blessing robot? Is it not necessary to explicitly bring cultural objects used in a Christian context into the horizon of religion and – in this way one could also understand the act of blessing – in order to mark them therefore as *religious* artefacts?

We are thus in the midst of questions of theological standardisation that have always been dealt with and have led to different theologies at different times and in different places. For example, in the Protestant tradition no objects are blessed, whereas in the Catholic tradition this is customary at least for certain objects. Again, these differences raise questions: What is the significance of these sorts of traditional differences for the perception of a religious practice in the field of HCI/HRI? Further, how can the influences of these artefacts on people interacting with them be described? Do they perceive these as sacred in any way, or would they do so if these had already been blessing people for hundreds of years, e.g., in a church? In other words: What forms of authorization do religious communities, specifically Christian churches, use to establish religious practices? Which media are legitimized with which methods for interaction and communication with the divine and how?

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<sup>41</sup> Cf. Ilona Nord/Thomas Schlag, On the Magical Dimension of Religion. Theological Questions Concerning Robots in Religious Contexts, in: Marco Nørskov/Johanna Seibt/Olivier Santiago Quick (Ed.), Culturally Sustainable Social Robotics – Proceedings of Robophilosophy 2020, Amsterdam 2020, p. 606–610.

### 1.3.2 Magic as a contested field of religious practice in which its logics of action become thematic.

In the case of *BlessU2*, these questions have not been clarified institutionally: this was and is understandable and sensible in terms of understanding *BlessU2* as a communication project and experiment. However, this has not shielded us from the question of whether *BlessU2* is being used to mechanize God's actions and, at least in part, to control them. Such a process would make the blessing ritual ridiculous and blasphemous because it could ultimately intend to make accessible and controllable what is beyond human access and control – or, in other words, to instrumentalize it. Where the sacred, which is beyond control in the human domain, is instrumentalized, we are in the realm of magic, at least according to a common understanding that pays particular attention to its dangers: “The theological evaluation formula therefore usually has the wording: While religion respects the inaccessibility and thus uncontrollability [*Unverfügbarkeit*] of God – in magic the sacred is instrumentalized.”<sup>42</sup>

The frequently heard disapproval of magic in Christianity is based on experiences in which people and God or gods have lost their sovereignty or freedom through magical practices. Even Jesus Christ is portrayed in the New Testament as overcoming demonic powers and magical bonds (Lk 10:9; Lk 17:19 etc.). During the Reformation, for example, the line of tradition that criticizes magic required a non-magical understanding of the Lord's Supper or intercessory prayer. The ostensible transformation of bread and wine into flesh and blood always evoked skepticism as Communion thus seemed something like magical practice. The rejection of such practices counters the danger of undermining the freedom of God and ultimately also that of the human being (i.e., by rendering these controllable by magical practices), for example in a technique that can be called up whenever we please pretends to be capable of bringing about divine forgiveness of guilt and human repentance, as well as the new start into a sanctified life. Magic was and is denied in the field of religion, in order “to protect the divine from being taken over by humans, but perhaps also to protect humans from being overpowered by the divine.”<sup>43</sup> The concept of magic was basically put in opposition to the concept of religion, devalued and fought against; at the same time, however, historically and phenomenologically as well as in terms of religious practice, it is obvious that religious practices in principle contain magical

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<sup>42</sup> Manfred Josuttis, Religion als Handwerk. Zur Handlungslogik spiritueller Methoden [Religion as Craft. On the Logic of Action of Spiritual Methods], Gütersloh 2002, p. 52.

<sup>43</sup> op. cit., 53; cf. Nord/Schlag, Magical (see note 40).

dimensions, as they refer to specific practices and techniques of dealing with the unavailable and uncontrollable sacred.

Of course, it is, however, difficult to establish a new approach to the concept of the magical because it has very pejorative denotations within Christianity; indeed, is ultimately associated with sorcery and an irrationality that is particularly antithetical to the (social-) scientific study of religion(s). This means that the concept of the magical has possibly become completely useless for current discussions about technology and religion. However, its relevance or the relevance of the topic of magic for the discussion of religion and technology can hardly be denied, because it calls for a closer examination of the methodological and medial character of religious practice:

Such a hypothesis, of course, presupposes that one recognises and acknowledges the methodological [and medial, I.N.] character of religious practice. Prayers, acts of sacrifice, worship rituals can thus no longer be described as mere spiritual exercises of theological doctrine or as expressions of pious feelings, but must be seen for what they really are: Procedures of approach to that powerful reality which, in the language of religious phenomenology, is called “the sacred.”<sup>44</sup>

### *1.3.3 The question of possibilities of participating in the presence of God in the world*

Interaction with *BlessU2* can be understood as a way of approaching the sacred. Traditionally, in Christian terms, it is the experience of blessing and, within it, the feeling of being blessed that denote the presence of God in one's life. Yet, this denotation can hardly be adequately described solely as a reason-oriented, primarily rational, and linguistically documented act. In the experience of the effective/affective presence of God's nearness in (one's own) life, there are at the same time parts of sensory perception and its contextually shaped interpretations that are not consciously reflected upon and do not rationally refer to the always ambivalent unfolding of a powerful reality. Seen in this way, the blessing then presents itself as the influence of a numinous power in one's own feelings as sensorily perceptible, and on their place and effect in the mind.<sup>45</sup> Describing religion, faith, and life in the shadow of God, so to speak, does not dissolve into a sociologically oriented exposition of religious practice, but in them it is reckoned

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<sup>44</sup> Ibid.

<sup>45</sup> Cf. Heinz Streib, Magie V. Praktisch-theologisch, in: Religion in Geschichte und Gegenwart (RGG) [Practical Theology, in: Religion in History and Presence], Vol. 5, Tübingen <sup>4</sup>2002, p. 674.

that God has a living presence in one's own life. To explore this presence, much less to reckon with it and to "feel" its possibilities, is of course only possible in processes of interpretation that are articulated humanly, but which nevertheless assume that God's presence does not only exist beyond but can also be experienced in the midst of life. If we dispense with the difficult word magic, which is basically hardly used constructively theologically in a narrower sense, then, stated more neutrally, it is a matter of *exploring the practical religious procedures of participation possibilities in the presence of God in the world.*

Such an approach can at least be linked to the theology of Paul Tillich.<sup>46</sup> He identified magical dimensions within the Christian religion specifically in two practical-theological fields of active engagement: in the areas of preaching/worship and pastoral care, for which he brings into play the discussion of the power of the Word and the question of healing.<sup>47</sup> He finds the effect of magical practices in processes of psychic [referring to the ancient Greek term *psyche*, meaning "self" or "soul" – CME] participation that enable a person to transcend the limits of their perceptual possibilities partially and temporarily. He also speaks of a "sympathetic interdependence in the psychic sphere"<sup>48</sup> that opens up an experience of divine presence.

Tillich's examples, however, were still exclusively about human-human interactions. For an interaction with *BlessU2*, it remains unclear whether it is appropriate to speak of a "sympathetic interdependence" in human-robot interactions. Can the assumed *pathos* referring to the above mentioned sensory or affective experiences be applied to an interaction with a machine or a robot?

The robotic artefact *BlessU2* has no life of its own. Applying transhumanist ideas to it would take things much too far. Its possible ways of interacting with humans have been developed in the context of a German Evangelical church and in loyalty to a certain tradition. In this respect, one can speak of an informal authorization. Its acceptance – i.e., by those who experience its blessing as genuine in some way – can certainly also be inferred from the fact that it is able to stimulate associations with personal memories as well as with the cultural memory of the

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<sup>46</sup> Cf. the explanations in Hans-Günter Heimbrock (Hrsg.), Magie. Katastrophenreligion und Kritik des Glaubens. Eine theologische und religionstheoretische Kontroverse um die Kraft des Wortes [Magic. Disaster Religion and Critique of Faith. A theological and religion-theoretical controversy about the power of the word.], Kampen 1994.

<sup>47</sup> Cf. Paul Tillich, Systematische Theologie [Systematic Theology,] Vol. III, Berlin/New York 1987, p. 319ff.

<sup>48</sup> Ibid.

Christian religious practice of bless(ing) in the contexts in which those cultural codes are understood. Yet once again, the discussion of the open question must be taken up: *How can the relationship between mind and matter be described more precisely so that religious practice can be adequately understood in contexts of HCI/HRI/MMI – and, ultimately, so that ethical reflections in this area also come to the foreground for classification in a responsible technology design or, more broadly, digital culture?* Once again: Transhumanist ideas, which cannot be discussed any further here, come closer in this field; but since they mostly lead to arguments and claims considered scandalous in the context of the Christian West, it is difficult to identify a productive path here as well. Western-oriented Christian theology can, however, draw inspiration from the spectrum of other religions and their approach to this question. In this regard, Buddhist perspectives as well as Christian perspectives developed in the context of Shintoism and Buddhism are likely to be promising.<sup>49</sup>

It is to be hoped that God's presence in the world, now as deeply shaped within a digital culture, will become more interactive, more participatory, and more collectively *near* than it has been up to now. For Christians in general, but specifically church leaders and full-time employees within church organizations, hope for renewal processes that could spark a digital religion and its religious practices.<sup>50</sup>

Such processes are never free of ambivalence. Every medium, every technology, every machine, every robot can have beneficial and/or detrimental effects, and there are many degrees of combination in between. In this process of transformation towards a digital culture, churches are not free to once again make their mission too simple: On the contrary, there are those who, in short, are surveying new mission territories, while others have high hopes for a change in traditional authority structures and practices in the Christian churches and who want to get to the root of contemporary grievances.

Finally, the scope and depth of these considerations and arguments within the domain of theological standardizations make manifest that the use of a robotic artefact – in the case of *BlessU2*,

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<sup>49</sup> Cf. Takeshi Kimura, Masahiro Mori's Buddhist philosophy of robot, available online at: <https://doi.org/10.1515/pjbr-2018-0004> (accepted on Mars 1. 2018) and also Kopf Does AI (see note 14).

<sup>50</sup> Cf. www contoc org in note 6 as well as Thomas Schlag/Ilona Nord, Art. Religion, digitale, in: Wissenschaftlich Religionspädagogisches Lexikon im Internet ([https://doi.org/10.23768/wirelex.Religion\\_digital.200879](https://doi.org/10.23768/wirelex.Religion_digital.200879)) (07/21/2021).

has generated an abundance of new possibilities and possible meanings that demand reflection, as we have tried to fathom here in a first way.

## 2. The HRI/HCI-initiative to develop theomorphic robots

More or less contemporaneous with our reflections, Gabriele Trovato developed his idea of building so-called theomorphic robots from the perspective of HRI/HCI at Waseda University in Tokyo; this was at the same time international in intention. In doing so, he has taken up the field of religion – as far as we can make out in his work – in a serious and defining way within HRI/HCIMMI, one that has not been presented before. As a start, he provides, as mentioned above, a helpful overview of the ways in which different religious traditions take up robots. Furthermore, he developed a taxonomy to classify them and then produced his own artefact called *Santo*, which he introduced to the scientific community. Unlike *BlessU2*, however, *Santo* is at home in the Japanese context where the use of robots in everyday life seems to be far less unusual and therefore less sensational than it (still) is for the German and, moreover, the European context. Shinto and Buddhist religious practices already include robotics in large temple complexes as part of a form of *religious literacy*, not only in scientific contexts but also in everyday life.<sup>51</sup> This makes obvious the possibility of considering whether this might also be possible for Christian religious practice in a country influenced by Shintoism and Buddhism. Trovato's reflections, based on the HRI/HCI perspective and the obvious interest in Christian religion, provide us a counterpart that, in our view, can certainly be criticized, but which also offers up challengingly productive impetus. By way of introduction, we will thus trace Trovato et al.'s argumentation, formulate queries and objections, and finally present perspectives for alternatives.

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<sup>51</sup> Cf. Courtney Bruntz/Brooke Schedneck/Mark Michael Rowe (Hrsg.), *Buddhist Tourism in Asia*, Hawai'i/US 2021.

## 2.1 The idea of developing theomorphic robots

In the article “Religion and Robots: Towards the Synthesis of Two Extremes”, Trovato et al. have comprehensively described and defended their project idea of developing theomorphic robots; in particular, the article synthesizes previous work in the field of religion and robots and aims to systematize a taxonomy for “theomorphic robots.”<sup>52</sup> In addition to an introduction to perceptions of the relationship between robotics and religion, the article offers a survey of the world religions and how the authors see the relationship between technology and robotics in the history of these religions. Trovato et al. also proceed to a *State of the Art of Automation in Religion* before offering their taxonomy and *design guidelines* for theomorphic robots. Finally, they present two prototypes and discuss ethical issues.

Not all the arguments of the paper can be presented in detail here, so we focus on the conceptual layout of the project. This includes briefly discussing the guiding concept of *theomorphic* robots at the outset. To paraphrase Trovato et al., in the context of design processes, this term refers to a way of designing technical installations that bear the form or shape *of the divine*. The authors do not explain this term further anywhere that we are aware of. It can only be assumed that they want to leave as much room as possible for the interpretation of what it means to give robots a divine shape: but do they further understand it somewhat constructivistically, in the sense of a signature or a code that emerges from the history of sacred art, or does the discussion of the form or shape also have, so to speak, divine substance for them? Are other, different descriptions of mind and matter envisaged for them?

For Christian theologians working in the European and German contexts, the discussion of a theomorphic robot initially sounded – and still sounds – very unusual and ultimately provocative as well. After all, there is hardly any definition of what should and must be understood by the divine or a divine figure; but on the other hand, a claim to represent the divine fundamentally contradicts the prohibition, especially emphasized by Protestants, not to make an image of God, as it is worded classically in the Ten Commandments.<sup>53</sup> The Biblical hymn to Jesus Christ in the letter to the church in Philippi is certainly also associated with the language of the divine image. But here it is just the other way round: Christ is ascribed the pre-existent divine form,

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<sup>52</sup> Trovato a. o., Religion and Robots (see note 3).

<sup>53</sup> Cf. Evangelische Kirche in Deutschland (Ed.), *Freiheit digital. Die Zehn Gebote in Zeiten des digitalen Wandels. Eine Denkschrift der Evangelischen Kirche in Deutschland [Freedom digital. The Ten Commandments in Times of Digital Change. A Memorandum of the Evangelical Church in Germany]*, Leipzig 2021, p. 52–68.

which he gives up in order to become like man.<sup>54</sup> Additionally: The fact that Trovato et al. choose the representation of a monk as an exemplary form of design for their theomorphic robot shows that they could assign a special significance to the human figure in representations of the divine. The monk is commonly regarded as a person who could be closer to God than people who do not dedicate their lives to the worship of God in this comprehensive way; in part, they are also ascribed a holiness, as are nuns. Nevertheless, the paper also includes other forms of design that connect to the animal and plant world.

Finally, let us turn to another aspect relevant to the discussion of the notion of theomorphic robots: the empirical research around the genesis and design of images of God. Within theology and especially religious education, the topic of images of God can be seen as a whole as a great tradition with diverse reflections, especially in art history. Paintings such as Leonardo da Vinci's *Last Supper of Jesus Christ* or Michelangelo's *Creation of Adam* have had a lasting impact in the European context and beyond on ideas of the figures of Jesus Christ and God the Father. These important examples form a cultural memory, so to speak: at the same time, in personal piety and memory culture there is hardly any access to images of God that would be more broadly recognized as generally important for children and young people, for example, and that would be accepted supra-individually, much less without disagreements. In more recent empirical research within religious education, the focus is rather on the fact that the question of one's own image of God literally issues in a struggle to develop an appropriate image.<sup>55</sup> From the perspectives mentioned above, an appropriate design of divine form thus faces a demanding aesthetic task.

At the same time, however, it is obvious that throughout the centuries a multitude of objects have always given many, if not most, believers the opportunity to make their bond with God perceptible to the senses; psychologically speaking, these have served the faith well as external representations. Crosses and crucifixes, which are present in living rooms or as ornaments in the daily lives of believers, illustrate this, just as do Bible verses on houses and walls, as well as small pictures of the "Mother of God" which have a permanent place in many wallets around

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<sup>54</sup> Cf. Phil 2,5–11, e.g. Deutsche Bibelgesellschaft (Ed.), *Die Bibel. Nach Martin Luthers Übersetzung [The Bible. After Martin Luther's Translation]*, Stuttgart 2017, p. 229.

<sup>55</sup> Cf. Antje Roggenkamp/Verena M. Hartung, *Theologisieren mit eigenen Gottesbildern [Theologizing with your own images of God]*, Münster 2020.

the world, and now even in ways of shaping digital religion. They are part of everyday life, be it devotional apps or following a spiritual person on Instagram and being inspired by them.

We are therefore in complete agreement with Trovato's thesis that questions concerning the relationship between religion and robotics can be based on the *continuity* of a history of media culture in the field of religions. Writing and book culture, telephone, radio and television already opened up new medial possibilities for religious practice and religious communities and at the same time confronted them with the challenge of finding appropriate and effective forms of shaping media change. This now also applies to the transformation processes towards a digital culture. We also emphasize that a historical view shows that not all religious communities, and likewise, not all of them homogeneously, were reticent regarding the use of (new) technology. We also agree that technology can change religious practice and enhance spirituality. Vice versa, like Trovato et al. we see that technology transforms concepts of religion, myth and spirituality.<sup>56</sup> Thus, there is a broad basis of using religious robots for tapping into religious media culture.

The evolution of the understanding of the divine, however, leads us to a principled disagreement. It concerns the conceptions of the divine or of God, which in many respects are situated by Trovato et al. in a dualistic framework, e.g., as a dualistic opposition between God versus the world, mind versus matter, soul versus body, etc.. This impression can already be substantiated by Trovato et al.'s introductory remarks on angelology, which can also be seen as statements about the embodiments of the divine: While angels were regarded as souls without bodies, robots are now bodies without souls, so their representations are suitable for studying the body/mind relation more intensively.<sup>57</sup> Trovato et al. do not elaborate on this thesis, but it can of course refer to a long tradition of reflection on communication between God and the world, since angels are messengers of God and thus embody a classical "profession" of the communication sector.<sup>58</sup> However, the description of disembodied angels does not apply to the whole

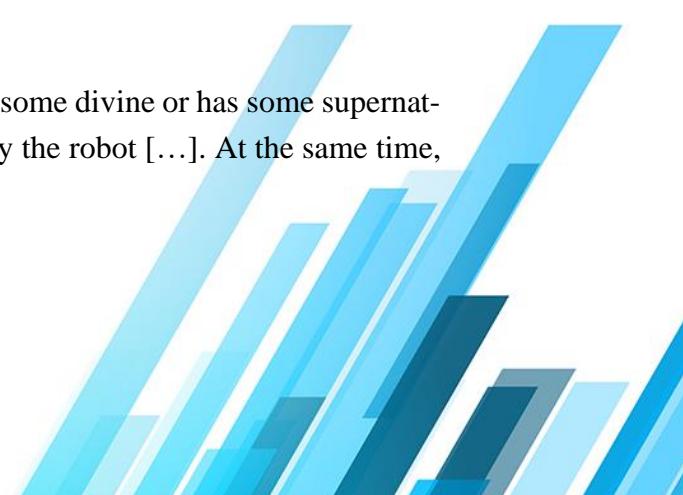
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<sup>56</sup> Trovato a. o., Religion and Robots (see note 3), 2. The concept of transformation would first of all be made empirically accessible. For the time being, it is understood here as a synonym for change and transformation. For this purpose, the principle of the principle of digital religion, as defined by Heidi Campbell in the concept of »religious-social shaping of technology (RSST) as shaped by Social Construction of Technology (SCOT) theories«, cf. Heidi Campbell, Surveying Theoretical Approaches Within Digital Religion Studies, in: New media & society 19 (2017) 1, p. 15–24.

<sup>57</sup> Cf. Trovato a. o., Religion and Robots (see note 3), 3.

<sup>58</sup> Cf. e.g. Michel Serres, Die Legende der Engel [The legend of the angels], Frankfurt a. M. 1995.

“profession.” For the archangel Gabriel, one of the Biblical guiding figures, it is simply not true that he solely consists of a soul without a body. Instead, the body of the angel is described as human and transhuman – in other words, with a human physique that is transparent to (i.e., in open connection with) the divine, but which in no way excludes the physical (Dan 10). It is also the case that within Biblical literature people appear who, on closer examination, likewise show themselves to be highly transparent to the presence of God and in this sense would also have to be described as angels. Regardless of these corrective theological suggestions, however, Trovato’s reference marks what is important for our critical discussion of his approach: he assumes a body-mind duality as the foundation of Christian anthropology. His understanding of angels explicitly underlines this view. The consequences of following such a dualistic worldview will become clear below in relation to media ethics considerations. But it also needs noting in advance that a body-mind dualism can lead to the devaluation of the body and the bodily experience of religious practice, as has been expressed many times within the history of Christianity in the form of a hostility towards, even a demonization of the body, sexuality, and all too often, women. In contrast, especially the use of HCI/HRI/MMI can make sure that religious practice is opened up as a bodily experience. The practice of faith – more generally speaking the religious practice of a human being – is dependent on the embodied existence (*Existenz*) of the human being in his or her body. However, not only cyber-science fiction but also transhumanist research projects see the overcoming of the mortal body precisely as one of their main goals. With the entrance of Middle and Late Platonic philosophy into the Hellenistic influences on early Christianity, the latter also received a strong tradition that argues for a split between body and mind.<sup>59</sup> In contrast, within the Jewish traditions, which were and are also present in and formative for Christianity, there are non-dualistic conceptual worlds that understand body and mind in a more integrated way. To summarize this most pointedly: one could counter Trovato et al. by saying that they do not see God as present in the world, but as located behind and above the world. The theomorphic robot then has the function of keeping the call to reverence God present in the (godless) world and also calling on God, for example, as a protective power:



The fact that a theomorphic robot is connected with some divine or has some supernatural capabilities may make the user feel protected by the robot [...]. At the same time,

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<sup>59</sup> Cf. 2.2.

the robot itself may be taken in higher consideration and respect, to another degree compared to the simple politeness high-lighted in the experiments described in The Media Equation.<sup>60</sup>

Finally, if we take a look at the taxonomy of three different designs of robots in the field of religions, it also becomes clear why a dualistic construction between God and world might have suggested itself for the idea of theomorphic robots: Trovato et al. distinguish between anthropomorphic, zoomorphic and functional designs – a quite common division between human, animal and object that is applied here. The divine or God now cannot be assigned to any of the three categories mentioned in the logic thus created. Therefore, the divine receives its own category, which encompasses transcendence and the supernatural, so to speak.

It is interesting that Trovato et al. classify *BlessU2* within this taxonomy in the area of anthropomorphic or “non-theomorphic robots.”<sup>61</sup> We assume that this was done because, on the basis of its design, no explicit design features could be identified that would allow symbolic or art-historical references to representations of a deity to be identified, and the human being precisely cannot be seen as the image of God; this means, however, that – and how – people live not only *in* the presence of God, but *out of* the presence of God, does not come into consideration. Under the condition that a clear separation is made between the profane and the sacred, between the secular and the religious, it can then be understood that *BlessU2* is classified as an anthropomorphic robot. This is where Trovato et al. also add an important point: They rate the chances of acceptance of theomorphic robots to be higher than those that are non-theomorphically designed.

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<sup>60</sup> Trovato a. o. Religion and Robots (see note 3), p. 11.

<sup>61</sup> Cf. op. cit., p. 10.

## 2.2. The concept of theomorphic robots: Questions and objections

Broadly, we argue for overcoming the various dualisms that prevail in Trovato's approach to theomorphic robotics. In particular, critical revisions are presented here with regard to the understanding of human identity and personhood, as well as conceptions of the relationship between God and creation: quite simply, we foreground non-dual conceptions of these relationships instead. This is done with a specific focus on the design requirements of a robot used in contexts of religion. Incorporating these non-dualistic foundations can help avoid subsequent interpretations of technology that, though not always explicit, certainly have Biblical roots with a problematic history of consequences and impacts: we refer here specifically to the mythologically perpetuated ideas from generation to generation of technology that is geared towards understanding us humans as godlike in the sense that our technologies would enable us to live as liberated from work and death.

### 2.2.1. Paradisical interpretations of technology

We begin with a brief reminder of the creation story in the second chapter of the Book of Genesis. This Biblical text about the creation of human beings as sexual beings is fundamental to one of the themes we explore here, namely the role of technology in its emancipatory significance. In contrast to a less common, more positive interpretation of the famous Paradise or Garden story<sup>62</sup>, the more familiar but far more negative and misogynistic interpretation portrays the disobedience of women as the Original Sin that brings both labour and death (as well as pain in childbirth) into the world. Seen in this light, transhumanist positions in particular deal with the question of how the expulsion from Paradise could be reversed.<sup>63</sup> As noted, there is not always explicit recourse in these positions to the Biblical myth. Nonetheless, the hegemonic misogynistic interpretation is still evident today in its secondary effect of being able to influence cultural traditions, here with regard to the understanding of technology that defines modernity. As we will see more fully below, modern technology is understood as a newly achieved power over nature in order to make ourselves gods – “masters and possessors of nature,” in Descartes’

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<sup>62</sup> Cf. Michael L. Morgan, Tikkun olam, in: Dan Diner (Ed.): Enzyklopädie jüdischer Geschichte und Kultur (EJGK) [Encyclopedia of Jewish History and Culture], Volume 6: Ta–Z, Stuttgart/Weimar 2015, p. 102–106

<sup>63</sup> Cf. Charles Ess, God Out of the Machine? The Politics and Economics of Technological Development, in: A. Beavers (Ed.), Macmillan Interdisciplinary Handbooks: Philosophy, Farmington Hills/Mi 2017, p. 83–111.

phrase, explicitly liberated from the post-Garden conditions of labor and death. It is this interpretive tradition associated with the narrative of Genesis 2 that further grounds the modern reaction against what is thus seen as a hubris-driven use of technology – i.e., the Frankenstein complex, as we shall also explain.

### 2.2.2. Theomorphic as an attributive opposition to anthropomorphic

Trovato et al. follow up on early work by other authors by also focusing on the fact that “the construction of humanoid robots can stimulate reflection on the concept of personhood.”<sup>64</sup> For instance, they pick up on German theologian Anne Foerst’s point that “the act of building a *Golem* is itself a prayer, as it deconstructs the mystery of what it means to be human.”<sup>65</sup> The legend of the Golem is here understood as an important example of something like building robots in Jewish tradition.

At the same time, Trovato et al. do not seem to have noticed that their approach to anthropomorphic or, more usually, humanoid robots has long been widely discussed within machine ethics and robotics philosophy.<sup>66</sup> Wendell Wallach, for example, put it this way:

Research on AI, and humanoid robots in particular, forces us to think profoundly about the ways in which we are similar to, and different from, the artificial beings we will create.<sup>67</sup>

This is indeed one of the defining frameworks for the growing field of research and scholarship that is collected under the name “Robo-philosophy.”<sup>68</sup> Nevertheless, to Trovato et

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<sup>64</sup> Trovato a. o., Religion and Robots (see note 3), p. 2.

<sup>65</sup> Anne Foerst (1998). *Cog, a Humanoid Robot, and the Question of the Image of God*. *Zygon*, 33(1): 91-111; cited in Trovato et al, 2019, p. 5.

<sup>66</sup> Cf. Mark Coeckelbergh, *New Romantic Cyborgs. Romanticism, Information Technology and the End of the Maschine*. Boston/Mss. 2017

<sup>67</sup> Wendell-Arnold Wallach, Moral Machines and human ethics. Paper presentation at the conference of Robo-Philosophy 2014: Sociable Robots and the Future of Social Relations, Aarhus University, Denmark 2014.

<sup>68</sup> Cf. Conferences of Robo-Philosophy.

al's credit, they expand the frameworks of the Robotic Philosophy discussion precisely by considering the possibilities of a theomorphic robot. This raises a fruitful set of differences to the overarching emphases in the otherwise secular philosophical approaches of these directions, which – as Wallach suggests – work on the similarities and contrasts between humans and machines and generally does not explicitly refer to religion(s). Trovato et al. thus take the robotic philosophy discussions in new directions and ask: What happens when we project a divine essence – including perceptions, intentions, and emotions – from the superhuman to the robot?<sup>69</sup> In our opinion, their hypothesis is not so much aimed at a hubris-driven anthropology, but is rather pragmatically directed towards the acceptance of robots. After all, it might be possible to improve the acceptance of robots and their interaction by projecting some characteristics attributed to a deity onto them and thus making a “superhuman”<sup>70</sup> more real.

From a media ethics perspective, this step can first of all be described as remarkable and fruitful in several aspects. To begin with, it addresses the “Frankenstein complex”<sup>71</sup> and turns its meanings around. In this way, Trovato et al. try to achieve a change in the relationship between humans and robots which not only – as in some current films influenced and shaped by the Frankenstein complex – works out more friendly, amicable aspects in the human-robot interaction, but basically works with an attitude of adoration that can be called theistic (or, perhaps, animistic) and with correlative gestures of reverence in the interaction. From the context of theology and the church, however, the question arises: what image of God is being communicated here? The possible advantage that such an artefact is perhaps less likely to be defiled, damaged, or destroyed is not uninteresting for both theology and church (though this possible advantage would require demonstration). But first of all, it must be clarified how the deity represented here is understood, described and thought of in religious practice: Is it a theistic concept that is predominant here, and if so, how is or would such a concept be dealt with from a Christian perspective in the European context in the 21<sup>st</sup> century? Against Trovato’s approach of describing God in a dualistic metaphysical conception, we believe it is more appropriate to ask in what way God and also a divine presence of mind can be appropriately spoken of today.

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<sup>69</sup> Cf. Trovato u. a., Religion and Robots (see note 3), p. 3; cf. as well as Ess, God (see note 61).

<sup>70</sup> Ibid.

<sup>71</sup> Cf. Coeckelbergh, New Romantic Cyborgs (see note 64), p. 21–70.

Furthermore, the question is whether this is possible at all without a concrete cultural contextualization.<sup>72</sup>

### 2.2.3. Discussion points in the relation of technology and religion

Another leading thesis of Trovato et al. is that since the 18th century, robots have been associated less with faith and magical symbolism and more with ever more powerful and efficient ways of doing things, as the power of creation has shifted from gods to humans.<sup>73</sup>

We agree with the basic premise of this thesis but believe that it does not take us far enough. In particular, the account offered fails to recognise the profoundly revolutionary upheavals that Francis Bacon (1561-1626) and then René Descartes (1596-1650) wrought on the foundations of modernity. To begin with, Bacon and Descartes inaugurate a radically new understanding of science and technology: In Descartes' formulation, modern science will provide us with a "true understanding of nature" - thereby allowing us to become "masters and possessors of nature."<sup>74</sup> Here, the explicit goal of this position of *humankind* is stated to be the overcoming of labor and death (though, perhaps not surprisingly, he omits the third condition – pain in childbirth for women). For Descartes' contemporaries, who were thoroughly familiar with the creation story from the 2nd chapter of Genesis as a story of Original Sin, the modern project of finally overcoming the existential condition of being forced to work and fated to die after the "expulsion from Paradise" was immediately identified as blasphemy: for human beings – at least men – now want to be like God.<sup>75</sup>

Trovato et al. do consider this central point in the determination of the relationship between religion and technology, but they name it explicitly only in the context of their overview of Islam. In this tradition, they assert, "the representation of an image of a living being would be tantamount to assuming the role of creator reserved only for God."<sup>76</sup> This thesis can certainly

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<sup>72</sup> Cf. Jörg Lauster, *Der Heilige Geist. Eine Biographie* [The Holy Spirit. A biography], München 2021.

<sup>73</sup> Cf. Trovato u. a., *Religion and Robots* (see note 3), p. 4; and note 8.

<sup>74</sup> René Descartes, *Discourse on Method* (1637), in: *The Philosophical Works of Descartes*, edited and translated by Elizabeth S. Haldane and G.R.T. Ross, Vol. 1, Cambridge/ MSS. 1972, p. 81–130: p. 119.

<sup>75</sup> Cf. Ess, *God* (see note 61), p. 86–87.

<sup>76</sup> Trovato u. a., *Religion and Robots* (see note 3), p. 5.

be true, but it fails to account for similar reactions to modern technology in Christianity or within Western culture as a whole. These can be seen, for example, in Mary Shelley's *Frankenstein: Or the Modern Prometheus* (1818). Shelley's novel sets in motion here, in the context of Romanticism, what Trovato et al. call the "Frankenstein complex."<sup>77</sup> It is important to notice, however, that this critique of technology, as leading to human *hybris* as we seek to become like the gods, can be traced back much earlier, i.e., to the ancient Greek myth of Prometheus; a similar critique also appears in the 19th century prior to Shelley's novel in E.T.A. Hoffmann's novel *The Sandman*.<sup>78</sup> Thus, it is hardly accurate to argue that (humanoid) robotics, which is based on modern technological prowess and efficiency, and which is apparently able to portray the creative power of humanity in a particularly impressive way, is solely a child of the godless science of modernity that has liberated itself from the authority of religion.

#### 2.2.4. Need for sharpening the understanding of religion

Experimental components certainly flash up in Trovato et al.'s approach, for example when they name similarities and irreducible differences between humans and machines or Artificial Intelligence by noting that "[...] the construction of robots and the development of AI allow us to understand the complexity of creation and the implications of embodiment."<sup>79</sup> Here, an integrative understanding of body and mind/soul comes into view. At the same time, however, they continue: "[...] the embodiment of the divine through robots or the projection of divine essence into a machine [...] can lead to an even deeper understanding of humans and their soul/body duality."<sup>80</sup> To be sure, Trovato et al. find non-dualistic understandings between culture and nature particularly in Shintoism and Buddhism.<sup>81</sup> However, the authors overlook the fact that Western Jewish and Christian traditions also contain non-dualistic understandings of these

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<sup>77</sup> Ibid.

<sup>78</sup> Max Kämper (Ed.), E.T.A. Hoffmann, *Der Sandmann* [The sandman] (1816), Stuttgart 2019; cf. Coeckelbergh, New Romantic Cyborgs (see note 64), p. 42f.

<sup>79</sup> Trovato a. o., Religion and Robots (see note 3), p. 3.

<sup>80</sup> Ibid

<sup>81</sup> Cf. op. cit. p. 6

categories that likewise structure our foundational perceptions of the world.<sup>82</sup> Judaism, for example, does not generally endorse the notion of a soul as something distinct and separate from the body. On the contrary, a key text such as Gen. 3:19, “You are dust, and to dust you shall return,”<sup>83</sup> is evidence that Judaism largely praises both the inherent goodness of creation and the inherent goodness of human beings as embodied creatures. In particular, teachings such as *tikkun olam* emphasize that humans do not aspire to be masters and possessors of nature, but are rather jointly co-responsible with God for the well-being and repair of creation. Similarly, some Christian traditions reject the Augustinian notion of Original Sin, as well as its grounding dualisms between soul and body and human beings vis-à-vis creation. Naturally, however, there are many tendencies in which a dualism surfaces again, especially in religious practice. The soul, according to one popular belief, ascends to heaven after death; for many people, the stars in the sky are places where their deceased loved ones have found a new, disembodied place. In contrast, the Abrahamic religions are those that (have) expressed how much they still value the body as inseparable from a person's identity – even in death, through their burial culture: burial in the ground with a lying-in period of decades or, in Judaism, eternity, gives expression to this attitude. Trovato et al., however, seem to regard religion, which is rather associated with faith and the irrationality attributed to it, as tending towards a simple opposition to science, technology, and reason. To be sure, they explicitly state that the tendency to assume a dualistic opposition between faith and technology, and thus more broadly between faith and reason, is not always correct: “The common thought that religious authorities are typically cautious about any technological leap because they are servants of tradition, and the status quo is not always true.”<sup>84</sup> Yet they often fall into such dualistic assumptions when they suggest, for example, that cargo cults are good examples of religion that could serve as an analogy for people coming to worship supposedly superhuman intelligences which they cannot understand.<sup>85</sup>

Such overly simplistic assumptions about religion are also reflected in their concluding comments: conservative forces in a religion based on established rituals tend to support the maintenance of the status quo: The religious institution functions, they say, as long as the faithful

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<sup>82</sup> This point demands a more intensive discussion, to which the recently published work by Jörg Lauster, *Der Heilige Geist* [The Holy Spirit] (Munich 2021) can contribute.

<sup>83</sup> New Revised Standard Version, © 1989.

<sup>84</sup> Trovato a. o., *Religion and Robots* (see note 3), p. 1.

<sup>85</sup> Cf. op. cit. p. 2.

follow and pray. A robot repeating a certain ritual could become a powerful tool for church preservation strategies. On the other hand, progressives want the faithful to think for themselves and educate themselves. Therefore, instead of a robot that repeats some answers, they would prefer a robot that asks critical questions.<sup>86</sup> We counter, however, that the realities of religions, their institutions and forms of organization, and the dynamics that trigger their processes of reform or re-establishment, are numerous, manifold, and complex. Among the many counter-examples to Trovato et. al.'s view of "conservative" religion is the centuries-old practice of theologically conservative evangelical Christian traditions quickly embracing new media technologies as powerful ways to proclaim the Good News and attract new followers (as examples: the printing press, and then radio, film, television, the internet, etc.). At the same time, however, these traditions are often anti-rational, demanding a faith that places itself above reason. In contrast, even the more progressive traditions that affirm the compatibility of faith and reason (e.g., Thomism in the Catholic Church, Protestant examples such as historical-critical methods of biblical interpretation, etc.) can promote conservative tendencies, so to speak, if new media technologies promote a questioning of authority, hierarchies, etc. that is too critical or too individual from their perspective.<sup>87</sup>

Ultimately, what is argued in this critique of Trovato et al.'s description of how religious communities deal with media can also be summarized concretely in the fact that the analyses and findings of an entire field of research on *Digital Religion*<sup>88</sup> are not taken into consideration in their account. To be fair, their focus on the historical artefacts with which they thematize technology within religions possibly obscures the view of the state of practice and research on religion(s) lived today.

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<sup>86</sup> Cf. op. cit. p. 15.

<sup>87</sup> Cf. Heidi Campbell, How religious communities negotiate new media religiously, in: Pauline Cheong/Peter Fischer-Nielsen/Stefan Gelfgren/Charles Ess (Ed.), *Digital Religion, Social Media and Culture: Perspectives, Practices and Futures*, Oxford 2012, p. 81–96; Stine Lomborg/Charles Ess, »Keeping the Line Open and Warm«: An Activist Danish Church and Its Presence on Facebook, in: Pauline Cheong/Peter Fischer-Nielsen/Stefan Gelfgren/Charles Ess (Ed.), *Digital Religion, Social Media and Culture: Perspectives, Practices and Futures*, Oxford 2012, p. 169–190.

<sup>88</sup> Cf. initiating Heidi Campbell, *Digital Religion: Understanding Religious Practice in New Media Worlds*, Routledge 2012; für den deutschsprachigen Kontext [for the German speaking context] cf. Schlag/Nord, Art. Religion (see note 49).

### 3. Propositions and alternatives

As we welcome and acknowledge the important clues and insights into theomorphic robot design offered by Trovato et al., we also propose to go beyond what we see as difficult limitations in this account – specifically, overly simple assumptions regarding religion(s) as well as the tendency to stay within dualistic assumptions regarding the aforementioned categories of how we perceive the world especially regarding culture and religion. We further propose to abandon the categorizations of anthropomorphic, zoomorphic, and theomorphic robots and to approach the idea of a taxonomy anew. The most important reason for this is that no robotics, however labelled, used in contexts of religious practice redeems in depth what is invoked by the concepts of anthropomorphism, zoomorphism and theomorphism. How should the theomorphic robot *Santo* get over the status of being “just” a monk statue charged with interpretive power? How does *BlessU2* lose its possible resonances with the Frankenstein complex, including the tendency for robotics to elevate humans to the status of God, relieved of the task of labor and their fate, death?

We argue that the following leading principles for future robot design in the contexts we can manage should lead to robotics avoiding or countering modern *hubris*, including the understanding of technology as the key to eternal life. This can be realized in a first step, for example, by using robotics in the field of religion to ensure that people are given an opportunity to *interrupt* their everyday life with all its challenges and opportunities. Since European modernity, Christian religiosity has been based on human beings discovering themselves in the image of God and at the same time experiencing how and that all God's creatures are unique and individual, that they are no one's instrument or purpose, not even that of a God “who” needs to be worshipped.

At least for Christian religious practice, it can further be said that it wants to make *borderline situations* of life accessible, along with the existential needs that show themselves in these situations, in order to be able to reflect on the opportunities and challenges that lie within them.<sup>89</sup> In a second step, this is certainly most appropriately possible by dispensing with the juxtaposition and categorization of entities, and with an affiliated “Doing Objectivity,”<sup>90</sup> be it

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<sup>89</sup> These understandings of religion as interpretation of borderline situations further incorporates the contributions of Immanuel Kant and of course in the 20<sup>th</sup> century those of Karl Jaspers, and last but not least, of Paul Tillich: discussing and documenting these sources more fully, however, is not possible here.

<sup>90</sup> By this we mean a perception of the world that perpetuates and reenacts the subject-object split and reenacts it.

anthropomorphic, theomorphic or zoomorphic, in the orchestration of robotics in religious contexts. Instead, such orchestration and development would be about creating opportunities to experiment with religious practice. The approach to experimenting puts one in the pre- or intermediate status of a religion, so to speak, in which rituals and dogmas are in a transitive process, a process of finding out which practices show a life-serving or, even better, life-affirming potential for development, when and for whom. Thereby, the worldwide traditions of the most diverse families of religions can be borrowed from, combined with each other and reflected upon. In such a laboratory, it would then be possible to see what potentials robotics has for multiple and diverse contexts of religious practice and beliefs.

We believe that a robot design guided by the following principles contributes to and helps shape such an approach:

1. non-dual understandings of (not solely) human existence. This means moving beyond the modern (Augustinian) Cartesian mind-body dualism, to rather be informed by our best understandings of embodiment/corporality in our sense of who we are and how we navigate the world.
2. non-dual conceptions of the relationship between God and creation (inspired by more than just Christian elements of tradition, which, in a careful, religious-pluralistic discourse, examine elements of tradition from different religions – specifically with a view towards their potentials for constructively and critically acknowledging and fostering human creativity).<sup>91</sup>
3. non-dual conceptions of technology inspired by “slow tech/fair tech,” for which ethical categories such as “mindfulness”, “watchfulness” and “embeddedness” as well as “openness” and “specificity” have already been proposed.<sup>92</sup>

The topic of robots in Christian religious practice thus inspires a fundamental rethinking of the function of religion(s) and religiosities in their respective contexts. However, the reverse is also true: productive questions arise for the design of robotics with the work in contexts of religions. For the purposes of such design, technology itself carries with it meanings analogous to

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<sup>91</sup> Cf. Charles Ess, Between Luther and Buddhism: Scandinavian Creation Theology and Robophilosophy, in: Marco Nørskov/Johanna Seibt/Olivier Santiago Quick (Ed.), Culturally Sustainable Social Robotics: Proceedings of Robophilosophy, Amsterdam 2020, p. 611–616.

<sup>92</sup> Lars Hallnäs/Johan Redström, Slow Technology – Designing for Reflection, in: Personal Ub Comp 5 (2001), p. 201–212, available online at: <https://doi.org/10.1007/PL00000019> (12.07.2021); Norberto Patrignani/Diane Whitehouse, Slow Tech and ICT: A Responsible, Sustainable and Ethical Approach, Cham/Switzerland 2018.

religions, e.g., as bringers of salvation, which in turn challenge religions to examine important processes of reassurance for themselves and to clarify their reference systems for understanding existential questions. Admittedly, they always do this best by assuming for themselves as well as for their interpretation of technology, both of which are at least ambivalent: Promises of salvation in particular, whether by religions or by robotics, are never to be met naively. Last but not least, the discussion of the magical dimension in dealing with robotics has already been able to contribute fundamental considerations. In the continuation of the interdisciplinary exchange between media ethics, HCI/HRI/MMI and practical theology, we will continue to research the design and reflection of “technology probes” that inspire and challenge the further development of Christian religious practice for life in a digital culture.