

Rethinking Responsibility

Herausgegeben von
ELISABETH GRÄB-SCHMIDT
FERDINANDO G. MENGA
CHRISTIAN SCHLENKER

Perspektiven der Ethik

20

Mohr Siebeck

Perspektiven der Ethik

herausgegeben von

Reiner Anselm, Thomas Gutmann
und Corinna Mieth

20



Rethinking Responsibility

edited by

Elisabeth Gräb-Schmidt,
Ferdinando G. Menga,
and Christian Schlenker

Mohr Siebeck

Elisabeth Gräß-Schmidt, born 1956; Professor of Systematic Theology at the University of Tübingen.

Ferdinando G. Menga, born 1974; Professor of Philosophy of Law at the University of Campania “Luigi Vanvitelli” and Adjunct Research Fellow at the University of Tübingen.
orcid.org/0000-0002-5587-0818

Christian Schlenker, born 1991; holds a position as research assistant at the University of Tübingen.
orcid.org/0009-0008-1674-9151

Printed with the support of the *Universitätsbund Tübingen e.V.*, the *Evangelische Landeskirche in Württemberg*, the *Evangelische Landeskirche Baden*, and the Evangelical Church in Germany (*EKD*).

ISBN 978-3-16-161597-9 / eISBN 978-3-16-162221-2

DOI 10.1628/978-3-16-162221-2

ISSN 2198-3933 / eISSN 2568-7344 (Perspektiven der Ethik)

The Deutsche Nationalbibliothek lists this publication in the Deutsche Nationalbibliographie; detailed bibliographic data is available on the Internet at <https://dnb.de>.

© 2023 Mohr Siebeck Tübingen, Germany. www.mohrsiebeck.com

This book may not be reproduced, in whole or in part, in any form (beyond that permitted by copyright law) without the publisher's written permission. This applies particularly to reproductions, translations and storage and processing in electronic systems.

The book was printed on non-aging paper by Laupp & Göbel in Gomaringen and bound by Buchbinderei Nädele in Nehren.

Printed in Germany.

Preface

The anthology »Rethinking Responsibility« brings together contributions from the conference of the same name held at the University of Tübingen in November 2021. After two years of the pandemic, this was the first face-to-face event for most of the participants and we look back on the fruitful discussions that took place.

We would like to take this opportunity to thank all the sponsors of the conference and the publication of the conference proceedings. Special thanks go to the German Research Foundation (DFG) and Kärcher SE for supporting the conference; and to *Universitätsbund e.V.*, the *Evangelische Landeskirche in Württemberg*, the *Evangelische Landeskirche Baden* and the *Evangelical Church in Germany (EKD)* for their support in publishing the conference proceedings. We would also like to thank Katharina Gutekunst from Mohr Siebeck for her excellent support of the project. Furthermore, our thanks go to the editors of the series »Perpektiven der Ethik«, Reiner Anselm, Thomas Gutmann and Corinna Mieth for the opportunity to be included in this series.

The volume contains contributions from eminent scholars from a variety of disciplines who look at the problem of responsibility from different perspectives. The contributions offer a wealth of ideas and impulses for further research and debate on the topic. We hope that the conference proceedings will make an important contribution to the current debate on responsibility, helping to broaden our understanding of responsibility and inspiring us to find new ways of putting responsibility into practice.

Elisabeth Gräb-Schmidt, Ferdinando G. Menga and Christian Schlenker

Table of Contents

Preface V

Elisabeth Gräß-Schmidt, Ferdinando G. Menga and Christian Schlenker
Rethinking Responsibility. Introduction 1

I. Advanced Technologies

Amanda Lagerkvist
AI as Existential Media. Kazuo Ishiguro's *Klara and the Sun* (2021) 23

Christian Schwarke
Künstliche Intelligenz und die Konstruktion von Verantwortung 39

Christian Schlenker
Macht und künstliche Intelligenz. Dimensionen der Macht
und der Begriff der Verantwortung 51

II. Anthropology

Tijana Petković
What Transformation Do We Believe in? 81

Jure Zovko
Ethics of Responsibility for the Era of Globalisation? 95

Ingolf U. Dalferth
Endlichkeit und Verantwortung. Menschsein im Zeitalter der Technologie .. 111

III. Intergenerational Responsibility

Rachel Muers

Future Generations as Horizon of Responsible Action
in the Climate Crisis 137

Lisa Guenther

Intergenerational Responsibility for Settler Colonial Violence 151

Ferdinando G. Menga

Taking Care of Those Who Cannot Claim Rights. Intergenerational
Responsibility as a Challenge in a Post-Pandemic Era 177

Hans Lindahl

Place-Holding the Future. Legal Ordering and Intergenerational Justice
for More-Than-Human Collectives 195

Friedhelm Meier

Standpunktbezogene Zukunftsverantwortung. Zukunftsethik jenseits von
neutraler Technikfolgenabschätzung und akademisch-konzeptionellen
Metadiskursen 213

List of Contributors 233

Index of Names 235

Index of Subjects 241

Rethinking Responsibility

Introduction

*Elisabeth Gräß-Schmidt, Ferdinando G. Menga
and Christian Schlenker*

Our time is a time of crisis and a time of searching for responsibility. More and more it is becoming apparent that it is also a time of crisis for the concept of responsibility. This volume explores the question of how responsibility can be rethought so that it can continue to serve as a guiding concept for action and prudent consideration.

By looking at the social implications of current technological developments in the field of machine learning, the current challenges facing the concept of responsibility can be highlighted. Artificial intelligence as an access point reflects the social call for responsibility that is heard every time a »new innovation in artificial intelligence« is in the headlines. Developments in the field of artificial intelligence are characterised by the fact that they not only have complex algorithmic structures, but also give rise to complex social entanglements.

The conference on the topic of *Rethinking Responsibility*, which is documented in this volume, was a feast of encounters. All the speakers were happy to be able to come together in analogue form after two years of exclusively digital presence, and this on a topic that is naturally predestined for the temptation to allow everything physical to flow into the virtual. But it is precisely there that we have experienced how important the personal, also bodily encounter is in the situation of crisis, of the Covid-19 Pandemic. The importance of the bodily, we experience it precisely when it is absent. For the question of the theme »Rethinking Responsibility«, the relevance of personal relationships and real-life encounters for the determination of the human being, her freedom and capacity for responsibility will have to be considered, if not brought to the centre.

If it is assumed that responsibility is a relational concept with at least three relata, namely, that *somebody* is responsible *for something to someone*, then this implies that individuals can justify their actions and give reasons for them. Responsibility is therefore essentially individual, although one can speak of cooperative and systemic responsibility. Responsibility presupposes the ability to act and to judge, that is, to start an action and to deal with the consequences. And: responsibility presupposes the visioning of a goal.

Against the background of this definition of responsibility as an obligation to be able to give an account, the power of human intelligence must also be examined with regard to its preconditions in its educational and developmental history. This also includes the social and cultural environment into which traditions have entered and which has developed institutions in which the human being – and this precisely as a bodily constituent – participates and learns to engage with them. Such a conception of responsibility, therefore, refers above all to the present or to the past. But what about the future? Not only the presently urgent question of ecological conditions, responsibility for man-made climate change, which above all affects the future to a far greater extent than the present, but also the tremendous advances in the field of technology of computer science, medicine and biology raise concerns when the question of responsibility is asked.

Who should and can take responsibility in the face of this challenge? Is it really the individual human being, is it institutions or systems, or can responsibility even be delegated to machines? Alongside the question of the human being, this concerns the question of the human-machine relationship. And because of this questioning, the classical philosophical questions of anthropology, such as »what is the human being?« or »what is the *conditio humana*?«, need to be re-evaluated and redefined. In the 1950s, human beings and machines were still diametrically opposed to each other. As correct as this view is, on the one hand, it is also misleading on the other. Human beings and machines are intertwined through technology. Our technologies form a real intermediary space in which the vitalisation of the technical and the mechanisation of the vital take place as an indissoluble symbiosis. Apparatuses keep us alive; in the apparatuses, life now appears almost to be able to perpetuate itself. Arnold Gehlen's definition that human beings are *deficient beings* (Mängelwesen),¹ – which can be traced back to Herder or as far as Plato – no longer, if ever, holds. For it seems that with *advanced technologies* it is not just a matter of compensating for a lack of instinct, but rather technical intelligence means an increase in the scope of possibilities for humans. The reach of technology increases the reach of human action. We can see this in the already long-existing entanglements of human beings and machines, be it the pacemaker, be it prostheses etc., be it AI, be it implants into the brain to alleviate Tourette's syndrome, a phenomenon in Parkinson's disease.

These considerations also influence the question of whether there is a categorical difference between human and artificial intelligence, or whether only a quantitative distinction between human beings and machines can be identified, which will level out in the near or distant future and which holds out the prospect of an approximation of human beings and machines up to and including their identification. But what would that mean for the question of human responsibility?

¹ Cf. ARNOLD GEHLEN, *Der Mensch. Seine Natur und seine Stellung in der Welt*, 10th ed., Frankfurt am Main: Athenaion 1974, 36.

Here, the question of delegability of aspects of responsibility to machines and the clarification of the peculiar nature of human responsibility is raised. Neither can be made comprehensible independently of its conditions and origins.

Human intelligence is bound by tradition. It always refers to the experiences of others, to which one's own behaviour is linked. In communication and interaction, however, one's own experiences are formed, which then also initiate dealing with the experiences of others and the development of a sense of responsibility.

But what about the responsibility for the future? Doesn't the duty of responsibility reach a limit here? Responsibility should in principle be able to be developed from a holistic perspective. However, in view of the finiteness of human beings, such a perspective is not affordable to us. This principled limit is reinforced and manifestly experienced when our responsibility is to be directed towards the future. In any case, the question of responsibility cannot be asked without considering the factor of time. It is time that makes both our finiteness and our dynamic and plastic freedom be formed in-between past and future. We are exposed to the future, but we cannot overlook it, we cannot anticipate everything, we cannot predict developments exactly, nor can we react to the demands of future generations. But the complexity of knowledge formation arising in tradition and the present from individual and sociogenetic and sociocultural experience enables human beings to deal with the openness of the future, and that also means keeping knowledge present against the background of the always concomitant non-knowledge. Knowledge is embedded in an open horizon of not-knowing. It is precisely the knowledge embedded in this openness of not-knowing that makes it possible for thinking to deal with complexity, which is important for the assumption of responsibility that is always challenged by the situation. Attention must be paid to this not-knowing that accompanies cognition and action in the analyses of what constitutes human rationality, if any, in relation to AI. What possibilities and what limits are therefore revealed by advanced technologies to penetrate into the realms of the humanum, to occupy them and to perceive or replace the bodily with the virtual, intelligence with AI and responsibility with algorithms, that is the subject of the reflections in this volume.

First of all, it is necessary to highlight why and which concepts of responsibility are challenged to what degree by the complex social structures that are created by an increasing complexity of contexts, algorithmic or otherwise. Responsibility is usually conceptualised according to the *liability model*, or *imputatio*. This notion of responsibility is largely oriented towards a legal framework.² The question that this concept of responsibility is intended to answer is who can be held accountable for certain consequences. It is this concept of responsibility that is crucial for law and legal applications. Responsibility can be analysed with the

² Vgl. IRIS MARION YOUNG, *Responsibility for Justice*, Oxford: Oxford University Press 2011, 95–98; IRIS MARION YOUNG, *Responsibility and Global Justice. A Social Connection Model*, in: *Social Philosophy & Policy Foundations* 23.1 (2006), 102–130, 116–118.

help of a formula, to which at least three relata are essential. Responsibility, thereby, is defined as a *relation*, according to which, an *agent* is responsible for a (determinable) *object* towards *someone*.³

This rudimentary formula could be extended by further relata, such as an entity *in front of which* someone is responsible or the normative order which explains *why* someone is responsible.⁴ However, the three relata highlighted here can be used to trace an essential feature of the liability model of responsibility. As objects, *consequences* are considered, which have occurred (or will occur) due to the possibility (for instance with regard to circumstances and knowledge) of an *agent* to have intervened (to intervene) in the course of things (by acting or omitting) so that the specific outcome can be causally linked to these actions or omissions of actions. The relation, which is thereby described as responsibility, is essentially aligned with the category of *causality* within the attribution paradigm.⁵ The action of an agent has changed (can change) a causal chain in such a way that a result has occurred that would not have occurred (will not occur) without his action. Or an agent could have intervened (can intervene) in a causal chain in such a way that a certain consequence would not have occurred (will not occur). This is, for example, how Max Weber, the father of the ethics of responsibility, defines responsibility: »daß man für die (voraussehbaren) *Folgen* seines Handelns aufzukommen hat.«⁶

³ Vgl. JANINA LOH, Strukturen und Relata der Verantwortung, in: Ludger Heidbrink/Claus Langbehn/Janina Loh (ed.), *Handbuch Verantwortung*, Wiesbaden: Springer 2017, 35–56, 39; EVA BUDDEBERG, Verantwortung im Diskurs. Grundlinien einer rekonstruktiv-hermeneutischen Konzeption moralischer Verantwortung im Anschluss an Hans Jonas, Karl-Otto Apel und Emmanuel Levinas, Berlin and New York: De Gruyter 2011, 12; MARK COECK-ELBERGH/JANINA LOH, Transformations of Responsibility in the Age of Automation: Being Answerable to Human and Non-Human Others, in: Birgit Beck/Michael Kühler (ed.), *Technology, Anthropology, and Dimensions of Responsibility*, Stuttgart: J.B. Metzler 2020, 7–22, 9; JANINA LOH, Responsibility and Robot Ethics. A Critical Overview, in: *Philosophies* 58.4 (2019); PAUL RICŒUR, Le concept de responsabilité. Essai d'analyse sémantique, vol. 11, 206–1994, 28–48, 28–29.

⁴ Vgl. bspw. LOH, Strukturen und Relata der Verantwortung, 39. PHILIPP STOELGER, Verantwortung wahrnehmen als Verantwortung aus Leidenschaft, Berlin and Heidelberg: Springer 2022, 11–12 identifies a total of seven relata that should be considered and draws attention to the various dimensions of the context in which responsibility is placed.

⁵ Cf. JOSEPH METZ, Preemptive Omissions, in: *Erkenntnis* 87.3 (2022). Ludger Heidbrink, for instance, points out that the (at least) three-relata concept of responsibility presupposes »Freiheit, Kausalität und Willentlichkeit [...], damit jemandem die Folgen seines Handelns gerechtfertigterweise zugerechnet werden können.« (LUDGER HEIDBRINK, Kritik der Verantwortung. Zu den Grenzen verantwortlichen Handelns in komplexen Kontexten, Weiler-swist: Velbrück Wissenschaft 2022, 23).

⁶ MAX WEBER, Wissenschaft als Beruf, 1917/1919 – Politik als Beruf, 1919, in: Wolfgang J. Mommsen/Wolfgang Schluchter (ed.), *Max Weber Gesamtausgabe*, vol. 1, 17, Tübingen: Mohr Siebeck 1992, 237. As is well known, Weber distinguishes between an ethics of responsibility (Verantwortungsethik), which looks at the consequences of an action, and an ethics of

In the discussion of techno-ethical problems of responsibility in the face of AI applications, the liability model of responsibility is indispensable. This involves considering either who can be regarded as an agent in a particular constellation of circumstances; whether AIs themselves should be considered agents; or whether a human instance of responsibility should be preserved through a *human-in-the-loop*. The question of who is responsible for an accident involving a self-driving car ultimately asks who is responsible for the consequences, i.e. who is liable for damages.

A well-known problem of the liability model is *diffusion of responsibility*. As the complexity of attribution processes increases, partial responsibility of individual agents under certain circumstances becomes marginal. If *every* agent involved could have acted otherwise, but her actions would not have averted the consequences, no one's actions can be deemed causally significant enough to attribute responsibility to. Diffusion of responsibility can be used to highlight briefly what the concern and benefit of a phenomenological approach to responsibility are. A distinction can be made between *horizontal* and *vertical* diffusion of responsibility. Both dimensions describe how complexity increases that relate either to the ability to influence a causal chain (horizontal) or to structural constraints on the ability to act (vertical).

In the case of *horizontal diffusion of responsibility*, the possibility of allocation or imputability dissolves due to a large number of agents involved. If a large number of agents are involved in the occurrence of a consequence, we can speak of diffusion of responsibility if the alternative action of one of the agents involved would not prevent the occurrence of the consequence.⁷ None of the agents as an

attitude (Gesinnungsethik), which is concerned with intentions and principles. Insofar as the consequences that the ethics of responsibility considers relate to the enforcement of a »cause« (op. cit., 227), Weber makes it clear that the consequences to be considered ultimately relate to the intentions that do not themselves fall within the scope of the assessment of consequences. The fact that this »cause« is determined by in terms of its fundamental questionability and determinability along lines of Nietzsche's philosophy has already been pointed out several times, vgl. WOLFGANG J. MOMMSEN, *Max Weber and German Politics 1890–1920*, Chicago and London: University of Chicago Press 1984, 112; WENDY BROWN, *Nihilistic Times. Thinking with Max Weber*, Cambridge, MA: Harvard University Press 2023; EUGÈNE FLEISCHMANN, *De Weber à Nietzsche*, in: *European Journal of Sociology / Archives Européennes de Sociologie / Europäisches Archiv für Soziologie* 5.2 (1964), 190–238; ZWI ROSEN, *Max Webers Auffassung der politischen Ethik*, in: *Tel Aviver Jahrbuch für deutsche Geschichte* XVII (1988), 323–342. Weber's critical positioning towards Nietzsche is highlighted by ETIENNE de VILLIERS, *Revisiting Max Weber's Ethic of Responsibility*, Tübingen: Mohr Siebeck 2018, 50.88.

⁷ An example for the current discussion is the attempt by L. Floridi to think of a »faultless responsibility«, cf. LUCIANO FLORIDI, *Faultless Responsibility. On the Nature and Allocation of Moral Responsibility for Distributed Moral Actions*, in: *Philosophical Transactions of the Royal Society* 374.2083 (2016), URL: <http://dx.doi.org/10.1098/rsta.2016.0112>, see also: HANNAH BLEHER/MATTHIAS BRAUN, *Diffused Responsibility. Attributions of Responsibility in the Use of AI-Driven Clinical Decision Support Systems*, in: *AI and Ethics* 2 (2022), 747–761. As the title suggest, Floridi addresses the problem of a complex situations of allo-

individual is able to change the course of the causal chain, that leads to certain consequences.

Answers to the horizontal diffusion of responsibility can, for example, consist in reconsidering who is regarded as an agent. Thus, it makes a significant difference whether only individual actors, a collective of actors or corporations are considered agents. To meet this challenge, the discussion about attributing agency to AIs is crucial. A clear benefit from the discussions around agency is that it is highlighted how the liability model remains essential.⁸

In the case of vertical diffusion of responsibility, imputability dissolves due to the impossibility of an agent in the causal chain to act differently.⁹ In the case of vertical diffusion of responsibility, the economic and social structures are set up in such a way that the influence of individual actors on the consequences is severely limited. The vertical dimension of diffusion of responsibility thus attempts to describe structural conditions of specific consequences. For this reason, responsibility must not only listen to the demands of *future* generations as a challenge to the present, but also name the structural injustices of the present that result from past. These structures form an indebtedness that is neither allocatable to a specific culprit in the past nor to a single agent who is perpetuating them in the present. The liability model struggles to find ways to address these situations for which nevertheless responsibility is demanded.

Especially in the context of AI governance, an extended notion of agency is discussed in order to escape the problem of the attribution of responsibility to a

tion, in which it seems impossible that a single agent can be *blamed* as a culprit. Floridi's approach envisages that problems of diffusion of responsibility are distributed by »allocation«, i.e. attribution, to the decisive nodes of a complex process – oriented towards the structure of neuronal networks. While this and similar approaches are undeniably helpful from a pragmatic point of view, they are neither able to address the aporia of »moral luck« (a node could only be decisive because many ancillary processes judged to be insignificant have made it so) nor prospective, resp. unallocable individual assumption of responsibility (as can be observed, for example, in the *Fridays for Future* movement in the field of climate ethics), into its concept.

⁸ On this discussion, see the contribution of Christian Schwarke in this volume.

⁹ Cf. IRIS MARION YOUNG, Verantwortung und globale Gerechtigkeit. Ein Modell sozialer Verbundenheit, in: Christoph Broszies/Henning Hahn (ed.), Globale Gerechtigkeit. Schlüsseltexte zur Debatte zwischen Partikularismus und Kosmopolitismus, Berlin: Suhrkamp 2010, 329–369, 350–353 In her analysis of the economic and social structures of sweatshops in the clothing industry, Iris Marion Young gives the example of higher factory workers who in principle would have the possibility to act differently, but that even if they had objected, the consequences to be averted would still have occurred: Whether someone has to live in misery because of bad working conditions and poor pay or because of unemployment does not make much difference. This should not be understood as a blind excuse, but must be taken seriously, but by no means accepted, as a fact of given institutional processes but also inherited social structures. The scope for action can be limited by a lack of other realistic options, by the exercise of domination and violence, by other power processes, such as the shackling by a discursive power that socially establishes as an institution those processes that limit the scope for action

subject.¹⁰ However, even an extended notion of agency struggles to address the structural requirements that vertical diffusion of responsibility can uncover. The aim of *explainable* or *responsible AI* approaches is to avert undesirable *consequences* or to make events that have occurred comprehensible in their genesis. Structures, however, pose the problem that they are socially created and human beings are exposed to them, but they did not create them themselves. A prudent concept of responsibility should equally be able to take *both* into account: The consequences as well as the structures in which consequences arise, have and will have arisen.

Applied to current developments in the field of artificial intelligence, both dimensions can be considered using two common examples. With regard to the horizontal dimension of diffusion of responsibility (1), this loss of accountability is often discussed concerning phenomena such as the so-called *black box*. With regard to the vertical dimension, the *bias problem* can be cited, which perpetuates unjust social structures (2).

(1) A *black box problem of AI* occurs when decisions, which were made by algorithms, are no longer comprehensible (by standards of human reason).¹¹ Beyond explainability this also poses a problem for responsibility. Users, programmers, etc. cannot explain the decisions made by the AI and therefore do not know what an AI has done and why. To find the agent (e.g. the programmers, the users, the companies, the training data, ...) that made the decision that led to specific consequences often proves to be difficult if not impossible.

Explainability most commonly assumes that the responsible agent had the necessary and understandable information at his disposal to make an informed decision regarding the consequences of his actions.¹² The attribution of consequences to an accountable decision-maker is no longer given in decisions made with the participation of artificial intelligence, which involves a black-box problem of sufficient complexity. Not only is there a lack of explainability, but it is also not possible to identify an agent that could be determined as responsible by the standard of allocation. Positively formulated, approaches such as *Explainable AI* are absolutely necessary, because they obtain a minimum of accountabil-

¹⁰ COECKELBERGH/LOH, Transformations of Responsibility in the Age of Automation: Being Answerable to Human and Non-Human Others.

¹¹ Cf. MARK COECKELBERGH, *AI Ethics*, Cambridge, MA: The MIT Press 2020, 117–123.

¹² »Interpretability can act as an insurance that only meaningful variables infer the output, i.e., guaranteeing that an underlying truthful causality exists in the model reasoning.« ALEJANDRO BARREDO ARRIETA et al., Explainable Artificial Intelligence (XAI): Concepts, taxonomies, opportunities and challenges toward responsible AI, in: *Information Fusion* 58 (2020), 82–115, 82; cf. likewise e.g. DONGHEE SHIN, The Effects of Explainability and Causability on Perception, Trust, and Acceptance. Implications for Explainable AI, in: *International Journal of Human-Computer Studies* 146 (2021), 1–10, passim; ANDREAS HOLZINGER et al., Causability and explainability of artificial intelligence in medicine, in: *WIREs Data Mining and Knowledge Discovery* 9.4 (2019), e1312, URL: <https://wires.onlinelibrary.wiley.com/doi/abs/10.1002/widm.1312>, passim; COECKELBERGH, *AI Ethics*, 109–123.

ity (and thus liability) through explainability. Yet, allocation and causality are guiding principles for this approach.

If one consequently applies the criterion for the liability model of responsibility, that a decision-maker is determined by the fact that his relation to a causal chain in case of omission of or intervention by means of an action, would have significantly influenced the consequences of a process according, it follows that in cases of horizontal diffusion of responsibility, no decision-maker and thus no one responsible can be determined. In view of the black box problem, the attributability of responsibility fails due to the diffusion of explainability.

(2) The vertical dimension of diffusion of responsibility describes how structural constraints (e.g. societal, hierarchical, power asymmetries, ...) limit the (perceived) ability of agents to act. Thus, the vertical diffusion of responsibility addresses the liability model's criterion that agents could have acted differently in a way that would have changed the outcome. In particular, social structures that sustain injustices that call for responsibility are often unintentionally perpetuated by our actions as the orders of the ordinary and the mundane.¹³

Here too, specific phenomena of digitality reveal an underlying problem. The transmission and reinforcement of social structures are particularly problematic but often unnoticed when these structures promote injustice. If the training data from which AI learns contains *biases*, it will absorb and reproduce them. The best-known examples of this are algorithms such as COMPAS, which was used to convict suspected criminals in Florida, as Mark Coeckelbergh summarises:

According to a study by online newsroom ProPublica, the algorithm's false positives (defendants predicted to re-offend but who actually did not) were disproportionately black, and the false negatives (defendants predicted not to re-offend but who actually re-offended) were disproportionately white. Critics thus argued that there was a bias against black defendants.¹⁴

While such cases directly demonstrate that from AI applications real-world consequences emerge, in other cases, social structures are less conspicuously perpetuated. For example, Emily Bender and Timnit Gebru 2021 criticised the current development of *natural language processing* frameworks as *GPT-3*, for uncontrollably perpetuating various biases. The reason, according to Bender and Gebru, is that the immense and unspecific amounts of data with which this artificial

¹³ This can be either approached with Heidegger's description of »das Man« (MARTIN HEIDEGGER, *Sein und Zeit*, 19th ed., Tübingen: Max Niemeyer Verlag 2006, 126–130) or with Nietzsche, who addresses the underlying problem of the imputatio model of responsibility with his critique of the »irresponsibility of everyone« (*Unverantwortlichkeit Jedermanns*), cf. FRIEDRICH NIETZSCHE, *Menschliches, Allzumenschliches*. I und II, ed. by Giorgio Colli/Mazzino Montinari, KSA 2, Berlin: Deutscher Taschenbuch Verlag de Gruyter 1988, MA II, Nr. 81; KSA 2, 588; cf. FRANÇOIS RAFFOUL, *The Origins of Responsibility*, Bloomington and Indianapolis: Indiana University Press 2010, 80–120; JACEK FILEK, *Das Drama der Verantwortung bei Nietzsche*, in: *Archiv für Begriffsgeschichte* 43 (2001), 113–147.

¹⁴ COECKELBERGH, *AI Ethics*, 127–128.

intelligence has been trained no longer allows human intervention in the selection.¹⁵

Gebru and Bender ultimately attribute the bias problem here to the fact that the assignment and comprehensibility would become impossible due to the complexity of the correlations. Thereby they dissolve the bias problem into a black box problem, and collapse vertical into horizontal diffusion of responsibility, while aiming to maintain liability and control.¹⁶ Yet, while being certainly practical, this approach reveals two underlying assumptions: First, their demand for the possibility of control shows that causality is essential to the underlying concept of responsibility. What Bender and Gebru calling for is an algorithmic structure that can be intervened in so that the result is different. Arguing for a smaller language model is essentially arguing for a reduction in complexity. Secondly, what is not addressed are those structures that are not noticeable precisely because they are »ordinary« and »normal«. If a natural language model is to be regulated by a set of normative rules – which are themselves, of course, not only ethical but also political – then the potential for reproducing hidden normative orders, either implemented or embedded in the training data, must be addressed by a prudent concept of responsibility.

These two dimensions of diffusion of responsibility exemplify where challenges to the concept of responsibility exist. This does not mean that the *imputatio* notion of responsibility, which emphasises accountability has lost its place, importance, and relevance in the responsibility discourse. In particular, the forms of dealing with both dimensions of diffusion of responsibility addressed above show that it is possible to engage the current challenges by adjusting the *imputatio*-modell of responsibility. Yet, this model struggles to address structural injustices and intergenerational justice.

It is precisely this dimension of responsibility, which cannot be based on imputability, that is considered by the recent phenomenological investigations on the topic of responsibility. The phenomenological perspectives bring forth a prospective concept of responsibility that is not limited to a foreseeable and calculable future, but attempts to conceptualise responsibility in the face of an always contingent future.¹⁷

¹⁵ In the case of Chat-GPT, an easy-to-use platform based on an evolution of GPT-3, an attempt was made to prevent the reproduction of offensive, malicious content. To train the neural network to do this, a monitoring of results is carried out – in this case before Chat-GPT is published by hundreds of clickworkers in low-cost labour countries, cf. BILLY PERRIGO, *OpenAI Used Kenyan Workers on Less Than \$2 Per Hour to Make ChatGPT Less Toxic* Jan. 18, 2023, URL: <https://time.com/6247678/openai-chatgpt-kenya-workers/> (visited on 01/28/2023).

¹⁶ EMILY M BENDER et al., »On the Dangers of Stochastic Parrots. Can Language Models Be Too Big?«, in: *Proceedings of the 2021 ACM Conference on Fairness, Accountability, and Transparency* 2021, 610–623.

¹⁷ Fundamental to this are the works of Hans Jonas (HANS JONAS, *Das Prinzip Verantwortung. Versuch einer Ethik für die technologische Zivilisation*, Frankfurt a.M.: Suhrkamp

Addressing the issue of a responsibility of the contemporaries towards future generations presents itself as an inescapable task for current societies. In fact,

1979, cf. BUDBERBERG, Verantwortung im Diskurs, 47–88) and Emmanuel Levinas (cf. e.g. EMMANUEL LEVINAS, *Jenseits des Seins oder anders als Sein geschieht*, 3. Auflage der Studienausgabe, Freiburg und München: Verlag Karl Alber 2011, 37–41). For a focus on the concept of responsibility in Levinas and its relevance in the contemporary debates, cf. BUDBERBERG, Verantwortung im Diskurs, 145–204; RAFFOUL, *The Origins of Responsibility*, 163–219; TOBIAS ZEEB, Verantwortung für das Gesetz. Überlegungen zur protestantischen Verhältnisbestimmung von Gesetz und Evangelium im Gespräch mit Emmanuel Levinas, in: *Etica & Politica / Ethics & Politics* XXIII.1 (2021), 269–284. The grounding of responsibility here does not lie in the fact that an attribution can take place according to certain (causal) criteria, but is grounded in a claim that requires a response (*responsio*), cf. EMMANUEL LEVINAS, *Totalität und Unendlichkeit. Versuch über die Exteriorität*, 5. Auflage, Freiburg und München: Verlag Karl Alber 2014, 309. This expresses that it is essential to being human to be founded in an original passivity as a responsible person. Ingolf U. Dalferth describes this in his contribution *Endlichkeit und Verantwortung*, below 111–133, as deep-passivity. Cf. similarly STOELLGER, Verantwortung wahrnehmen als Verantwortung aus Leidenschaft, 36–37. In this passivity the unavailability of the origin of responsibility is revealed. One always finds oneself already placed in responsibility and does not choose to take on responsibility. Levinas thereby makes it clear that responsibility here has its seat in a transcendence that takes place in the event of the encounter between two persons: Before the responsible person can respond, he is already challenged to respond by the given relationship to the other. According to Levinas, the given nature of this relationship bears the character of the ethical, because in this event, in which no answer, no language and no common or antagonistic action has *begun*, the *beginning* is already given, cf. BERNHARD WALDENFELS, Responsive Ethik zwischen Antwort und Verantwortung, in: *Deutsche Zeitschrift für Philosophie* 58.1 (2010), 71–82. Further, the early theological analyses of the concept of responsibility by Dietrich Bonhoeffer are central in this context. On Bonhoeffer's pioneering role in the phenomenological context, cf. BRIAN GREGOR, The Transcendence of the Person. Bonhoeffer as a Resource for Phenomenology of Religion and Ethics, in: Brian Harding/Michael R. Kelly (ed.), *Early Phenomenology. Metaphysics, Ethics, and the Philosophy of Religion*, London: Bloomsbury 2016, 181–211; PAUL RICŒUR, The Non-religious Interpretation of Christianity in Bonhoeffer, in: Brian Gregor/Jens Zimmermann (ed.), *Bonhoeffer and Continental Thought. Cruciform Philosophy*, Bloomington and Indianapolis 2009, 137–155; ESTHER D. REED, *The Limit of Responsibility. Dietrich Bonhoeffer's Ethics for a Globalizing Era*, Edinburgh: T&T Clark 2018. On Bonhoeffer's concept of responsibility, cf. ESTHER D. REED, *The Limit of Responsibility. Dietrich Bonhoeffer's Ethics for a Globalizing Era*, Edinburgh: T&T Clark 2018; GUNTER M. PRÜLLER-JAGENTEFEL, *Befreit zur Verantwortung. Sünde und Versöhnung in der Ethik Dietrich Bonhoeffers*, Münster: Lit 2004; STEVEN C. van den HEUVEL, *Bonhoeffer's Christocentric Theology and Fundamental Debates in Environmental Ethics*, Eugene: Pickwick 2017; PETER DABROCK, *Responding to <Wirklichkeit>. Reclaiming Bonhoeffer's Approach to Theological Ethics between Mystery and the Formation of the World*, in: Kirsten Buch Nielsen/Ulrik Nissen/Christiane Tietz (ed.), *Mysteries in the Theology of Dietrich Bonhoeffer. A Copenhagen Bonhoeffer Symposium*, Göttingen: Vandenhoeck & Ruprecht 2007, 49–80; PETER DABROCK, *Wirklichkeit verantworten. Der responsive Ansatz theologischer Ethik bei Dietrich Bonhoeffer*, in: Wolfgang Nethöfel/Peter Dabrock/Siegfried Keil (ed.), *Verantwortungsethik als Theologie des Wirklichen*, Göttingen: Vandenhoeck & Ruprecht 2009, 117–158.

Index of Names

- Agar, Nicholas 106
Agius, Emmanuel 14
Ajana, Btihaj 25, 34
Alexy, Robert 108
Alferi, Francesco 62
Allen, Colin 47
Anderson, Michael 47
Anderson, Susan Leigh 47
Apel, Karl-Otto 229–231
Arendt, Hannah 75, 108, 191, 194
Aristotle 62, 64, 65, 104, 105, 116, 207
Arneil, Barbara 153
Arrieta, Alejandro Barredo 7
Ars Industrialis 190
Ashton, Paul 197, 209
Asimov, Isaac 48
Atanasoski, Neda 30
Athanasius of Alexandria 83, 90
Auerbach, Bruce Edward 12, 16
Augustine 39, 86
Awad, Edmond 47
Azoulay, Ariella Aïsha 155–158,
160–167, 169, 170, 174, 175
- Babich, Babette 62, 65, 69, 72
Baghranian, Maria 99
Baier, Annette 12
Barad, Karen 33, 34
Barry, Brian 12, 13, 16, 17
Bechmann, Gotthard 216
Beckerman, Wilfred 13
Bender, Emily M 9
Benjamin, Walter 201
Bentham, Jeremy 99
Berdyayev, Nikolay 86
Berns, Thomas 182
Bifulco, Raffaele 11
Bill, Prochnau 139
Bleher, Hannah 5
Bonhoeffer, Dietrich 10, 140–142, 146
Borrows, John 157
Boston, Jonathan 11
- Bostrom, Nick 90–92, 106
Brachtendorf, Johannes 39
Branch, Jordan 199
Brandt, Richard 99
Braun, Matthias 5
Brown Weiss, Edith 11
Brown, Wendy 5
Brueggemann, Walter 147
Bryce, Peter 173, 174
Buddeberg, Eva 4, 10
Burckhardt, Jacob 104, 105
Busuttill, Salvino 14
Butler, Judith 177
Böschen, Stefan 214, 216, 224
- Canada, Government of 167
Cardoza-Kon, Javier 62
Care Collective 177
Carpenter, Stanley R. 216
Choi, Jaz Hee-jeong 30
Christensen, Michael J. 81
Christian Schlenker 43
Ciaramelli, F. 11
Cicero, Marcus Tullius 115
Citton, Yves 182, 183, 189
Clay, Eugene 83–85, 87, 88, 90, 91, 93,
94
Coeckelbergh, Mark 4, 7, 8, 47, 69
Cole-Turner, Ronald 92, 93
Collingridge, David 222
Conway, E.M. 11
Cornford, Francis M. D. 98
Couldry, Nick 24, 25
Crawford, Kate 24
- Dabrock, Peter 10
Dalferth, Ingolf U. 10, 111
Dallmayr, Fred 52, 62, 69
Darwin, Charles 102
Dasgupta, Partha 138
Davin, Nicholas Flood 172
Davy, Barbara Jane 207

- de La Mettrie, Julien Offray 106
 De-Shalit, Avner 14
 Denton-Borhaug, Kelly 143
 Derrida, Jacques 15, 193, 200
 Despret, Vinciene 208
 Deutscher Bundestag 42
 Dick, Philip K. 39
 Dignum, Virginia 42
 Dilthey, Wilhelm 102
 Diogenes Laertius 115
 Diogenes the Cynic 115
 Draghi, Mario 185
 Dupont, Claire 146
 Durante, Massimo 61
 Dusseldorp, Marc 217
 Dworkin, Ronald 108
- Edele, Mark 142
 Esposito, Costantino 65
 European Commission 42
- Feneuil, Anthony 85
 Feyerabend, Paul 103
 Filek, Jacek 8
 Finlan, Stephen 81
 Fleischmann, Eugène 5
 Floridi, Luciano 5, 33
 Florovsky, Georges 90
 Forst, Rainer 54, 56, 73, 74
 Francis (Pope) 177
 Francis (pope) 137, 140, 141
 Francis, John 87
 Franzke, Aline Shakti 32
 Friedland, Hadley 157
 Fritsch, Matthias 17, 193
 Fyodorov, Nikolai Fyodorovich 84, 86, 94
- Gardiner, Stephen M. 11–14, 16, 17, 185
 Gameau, David 168
 Garner, Stephen 92
 Garve, Christian 107
 Gates, Kelly 25
 Gauthier, David 13, 16
 Gehlen, Arnold 2, 113
 Gethmann, Carl F. 215, 218
 Gibson, Margaret 30
 Gilbert, Margaret 197
 Giuffrida, Iria 51
 Golding, Martin P. 16
- González-Ricoy, Iñigo 11
 Gosseries, Axel 11
 Gregor, Brian 10
 Gregory of Nazianzus 83, 88
 Gross, Jules 81
 Grunwald, Armin 216, 217, 220–222,
 225, 232
 Gräß-Schmidt, Elisabeth 45, 224
 Grünwald, Reinhard 214
 Gurney, Jeffrey K. 46
 Guyer, Jane 29
- Haeckel, Ernst 102
 Hanukai, Maksim 143
 Haraway, Donna Jeanne 208, 209
 Hare, Richard Mervyn 99
 Harper, Stephen 167
 Harrach, Sebastian 61
 Hauerwas, Stanley 143
 Hayles, N. Katherine 24, 26, 33
 Hegel, Georg Wilhelm Friedrich 104, 105
 Heidbrink, Ludger 4, 52, 53
 Heidegger, Martin 8, 52, 57, 61–72, 74,
 75, 77, 78, 153, 154, 180, 181
 Heier, Jorma 189
 Held, Benjamin 56
 Herder, Johann Gottfried 2
 Herrmann, Friedrich-Wilhelm von 62
 Heuvel, Steven C. van den 10
 Hiskes, Richard P. 13
 Hjorth, Larissa 30
 Holzinger, Andreas 7
 Hong, Sun-ha 25
 Hooker, Brad 99
 Hume, David 15
 Husserl, Edmund 31, 204, 208
 Huxley, Julian 82, 85
 Häberle, Peter 11
 Hölderlin, Friedrich 104
- Ingolf U. Dalferth 50
 Irenaeus of Lyon 83
 Ishiguro, Kazuo 23, 31, 35, 36
 Iturricha-Fernández, Agustín 57
- Jaspers, Karl 17, 28, 29, 34, 35
 Jenkins, Willis 12, 15
 Jesus Christ 83, 85–87, 90, 148, 149
 Johnson, Mark 91

- Jonas, Hans 9, 12, 14, 17, 179, 218, 219, 225–232
 Joy, Lisa 39
 Julian of Norwich 143
- Kajewski, Marie-Christine 223
 Kant, Immanuel 65, 98, 100, 106–109, 124–126, 229
 Kauanui, J. Kēhaulani 152
 Kaufmann, Franz-Xaver 42, 43
 Kaufmann, Matthias 53
 Kafka, Gregory S. 14
 Keddell, Emily 57
 Kelsen, Hans 198
 Kember, Sara 28
 Kettner, Matthias 73
 Kharlamov, Vladimir 81
 Kierkegaard, Søren 26, 32, 34, 131
 Kilby, Karen 143
 Kimball, Trevor W. 123
 King, Tiffany Lethabo 152
 Kobayashi, Masaya 12, 14, 15
 Kohn, Eduardo 206
 Kollek, Regine 217
 Kouppanou, Anna 68, 72, 76
 Kurzweil, R. 93
- La Bellacasa, María Puig de 34
 Lacey, Hugh 101
 Laclau, Ernesto 207
 Lagerkvist, Amanda 18, 23, 27, 29, 32, 34, 35, 51, 61, 67
 Lanzeni, Débora 25
 Larchet, Jean-Claude 81
 Lawrence, P. 11
 Lenin, Wladimir Iljitsch 100
 Levinas, Emanuel 10, 15, 144, 186, 187, 192, 207
 Lewis, Clive Staples 113
 Lewis, David 91
 Lewis, Wyndham 103
 Lindahl, Hans 195, 196, 204, 212
 Ljunggren, David 167
 Loh, Janina 4, 7, 53
 Lossky, Vladimir 84–87
 Luckner, Andreas 65, 66, 68
 Lugones, María 161
 Lukes, Steven 54–56
 Lynch, Kathleen 177
- Lütge, Christoph 68
- Macdonald, John A. 172–174
 Mann, Geoff 179
 Mantzaridēs, Geōrgios I. 81
 Markham, Tim 61, 77
 Markowitz, Ezra M. 141
 Marr, Bernhard 111
 Marx, Karl 100, 102
 Maximus the Confessor 84, 86–94
 McDowell, John 104
 McFarland, Ian A. 86
 McLuhan, Marshall 26
 Mejias, Ulises A. 24, 25
 Menga, Ferdinando G. 11–13, 75, 179, 180, 185, 191, 192, 195, 209, 211
 Mercer, Calvin 82
 Merleau-Ponty, Maurice 208
 Mertz, Marcel 217
 Metz, Joseph 4
 Metzinger, Thomas 112
 Midson, Scott A. 132
 Mill, John S. 99
 Milloy, John S. 152, 159, 173
 Misselhorn, Catrin 47
 Mitcham, Carl 224
 Mohawk, John 153
 Mommsen, Wolfgang J. 5
 Moore, George E. 15
 More, Max 83
 Mouffe, Chantal 178, 207
 Muers, Rachel 15, 138, 146, 148
 Mullaney, Thomas S. 25
 Müller-Jung, Joachim 111
- Nancy, Jean-Luc 61
 Napoleon, Val 157
 Nassehi, Armin 58, 59, 65, 72
 Nellas, Panayiotis 81
 Neumann, Günther 76
 Nierlich, Linda 216, 218, 223
 Nietzsche, Friedrich 5, 8, 193
 Nikiforuk, Andrew 174
 Noble, Safya U. 24
 Nolan, Jonathan 39
- O'Donnell, Karen 147
 O'Donovan, Oliver 140, 142, 148
 O'Neill, Cathy 24

- O'Neill, Onora 138, 146
 Oreskes, N. 11
 Ostwald, Wilhelm 102
 Otte, Ralf 50
 O'Donnell, Karen 147
- Palacios-Marqués, Daniel 57
 Palmer, Gerald Eustace Howell 88
 Parfit, Derek 16
 Pascal, Blaise 118
 Passmore, John Arthur 14, 16
 Peirce, Charles Sanders 206
 Peissl, Walter 214
 Perrigo, Billy 9
 Peters, Benjamin 25
 Peters, John Durham 28
 Piasecki, Stefan 57
 Pink, Sarah 25
 Plato 2, 95–98, 104, 115
 Plumwood, Val 206, 212
 Polemarchus 98
 Pontara, Giuliano 12, 13
 Porphyrius 116
 Porter, Alan L. 216
 Pound, Ezra 103
 Prassas, Despina 81, 89
 Prüller-Jagenteufel, Gunter M. 10
 Putnam, Hilary 96
- Raffoul, François 8, 10, 53, 77
 Rancière, Jacques 201
 Rawls, J. 13, 16
 Reed, Esther D. 10, 144–146
 Richards, David A.J. 13
 Ricœur, Paul 4, 10, 53, 204, 207
 Riss, Søren 63, 68, 78
 Robinson, Dylan 159
 Rodriguez, Jeremiah 151
 Rosen, Zwi 5
 Rossini, Frederick A. 216
 Rouvroy, Antoinette 182
 Russell, Norman 81
- Sander, Thorsten 215
 Saura, José Ramón 57
 Savulescu, Julian 106
 Sayer, Andrew 55
 Schiavone, Aldo 187
 Schiffers, Juliane 128
- Schleiermacher, Friedrich Daniel Ernst
 130
 Schmidt, Jan Cornelius 221
 Schmitt, Carl 209
 Schummer, Joachim 230
 Schwarke, Christian 6
 Schüssler, Ingeborg 64, 65, 69
 Scobie, Michelle 144, 145
 Scott, Duncan Campbell 170, 173
 Scott, Ridley 39
 Seefried, Elke 214
 Sellars, Wilfrid 101
 Sherrard, Philip 88
 Shin, Donghee 7
 Sidgwick, Henry 14, 99
 Sikora, Richard I. 12, 13
 Silva, Denise Ferreira da 160
 Simpson, Leanne Betasamosake 153,
 171, 172
 Singler, Beth 93
 Skrimshire, Stefan 139
 Smith, Adam 100
 Smith, Michael 91
 Snow, Charles Percy 102, 103
 Socrates 95–98, 104, 105
 Spaemann, Robert 108
 Stiegler, Bernard 182–184, 188–190
 Stoellger, Philipp 4, 10
 Strauß, Stefan 215
 Stöckler, Manfred 221
 Susen, Simon 73
 Syropoulos, Stylianos 141
- Talaga, Tanya 151
 Thompson, D. 191
 Thomé, Martin 78
 Tillich, Paul 50
 Tirosh-Samuelson, Hava 117
 Torgersen, Helge 215–219, 222, 223, 232
 Torrance, Eugenia 81, 89, 90, 92, 93
 Trothen, Tracy J. 82
 Truth and Reconciliation Commission of
 Canada 152, 157–159, 168–170,
 172–174
 Tuck, Eve 159
 Tudor, Matilda 67
 Tugendhat, Ernst 100
 Tully, James 153

- Uexküll, Jakob von 201
Ulpianus, Domitius 195, 199
Underwood, Ted 24
United Nations 230
- Van Dooren, Thom 195, 196, 199,
201–206, 208–210
Varian, Hal R. 59
Verbeek, Peter-Paul 33
Villiers, Etienne de 5
Visser't Hooft, Hendrik Philip 14
Vita-More, Natasha 82, 111, 112
Vlastos, Gregory 96, 97
Voegelin, Eric 102
Vora, Kalindi 30
- Wagner, Gerald 213
Wainwright, Joel 179
Waldenfels, Bernhard 10, 15, 177, 186,
202, 204, 205
Wallach, Wendell 47
Ware, Kallistos 88
Watson, Irene 196
Watt, James G. 139
Weber, Max 4, 5, 51, 54–56, 73, 102
- Wehrle, Maren 201
Weisbach, David A. 12, 17
Wendte, Martin 68, 76
Westra, Laura 11
White, Julie Anne 181
Wieland, Wolfgang 98, 108
Williams, Bernard 98–101, 107
Williams, Thomas 143
Wittung, Jeffery A. 81
Wolfe, Patrick 152
Wood, Allen W. 107
Woopen, Christiane 217
Wulff, Agnes 76
Wynter, Sylvia 160, 161
- Yeats, William Butler 103
Young, Iris Marion 3, 6, 53
- Zahl, Simeon 147
Zeeb, Tobias 10
Zenklusen, Stefan 64, 68
Zovko, Jure 96
Zuboff, Shoshana 24, 51, 55–60, 71, 73,
75
Zylinska, Joanna 25, 28

Index of Subjects

- a-legal 201, 203
- accountability 7–9, 32, 33, 40, 152
- agency 4–6
 - agency of AIs 6
 - agent-centred perspective 198
 - agent/Akteur 42–44, 50, 55, 123–125
 - collective 197
- ANN 43, 48, 49
- apex mentis 116
- artificial intelligence 2, 3, 5, 7, 40–47, 49–52, 55, 57, 58, 60, 61, 65, 67–70, 75, 77, 78, 111, 147
 - as existential media 28, 29, 35
 - bias 8
 - explainability 7, 8
 - explainable AI 7
 - human centered 32
 - machine learning 1, 24, 43
 - responsible AI 35, 42
 - socially embedded AI 24, 51, 52, 56, 67
- attribution 125, 126
- autonomous cars 5, 44–47, 49

- behavioral patterns 51, 57–60, 69–71, 77
- Being-in-the-world (Heidegger) 154–156, 163, 166
- bias 24, 29, 32, 69
- biodiversity 230
- black-box-problem 7
- body politic 164, 168, 170, 171

- calculability 72
 - of consequences 42, 53
- care 156, 177–184, 186–189, 192–194
 - for a common world 166
 - for a shared world 158
 - for the world 156, *see* worldcarefulness, 175
 - mutual 159
 - practices of 159, 160
 - traditions of 160
- carebot 23
- causal chain 4, 6
- causality 4, 53, 62, 63, 70, 75–77, 220, 221, 228
- climate crisis 6, 117, 137, 139, 140, 142, 144, 148
- coexists 35
- colonial institutions 152
- colonial violence 152–160, 162–167, 169–171, 175
 - artefact of 165
 - intergenerational responsibility for 156
 - responsibility for 154
 - sedimented structures of 154
- colonialism
 - unlearning colonialism (Azoulay) 155, 166
- communication community
 - ideal and real 229, 230
- comprehensibility 43, 44
- conditio humana 2
- consequentialism 100, 101
- contingency 66, 67, 72, 74, 122
 - contingent future 9
 - of human existence 122
 - of situations 125
- Council of Chalcedon 85
- creation 40, 112, 114, 119, 131–133
- creator 119, 120, 131, 132
- creator/creation 88, 119
- CRISPR/Cas9 111
- cyborg theology 132

- data colonialism 25
- deep-passivity 10
- determination (as a virtue) 97
- diffusion of responsibility 5, 43
 - horizontal 5–9
 - vertical 5–9
- digital existence 23, 61, 67
- digital limit situation 23, 27–30, 35

- digital thrownness 29
- disambiguation 68, 72, 74, 75
- effectiveness 52, 55, 56, 60, 62, 63, 65
- enviromental ethics 117, 137, 138, 144
- eschatological horizon 140
- eschaton 142
- ethical time 186, 187, 191, 192
- ethics
- deontological 40, 42, 228
 - virtue 95
- eudaimonia 95, 96
- euchaimonisitic ethics 97
- existential media 26–29, 35
- existential media studies 31
- exploitation 24, 25
- finitude 93, 121, 122
- as condition of freedom 126
 - life 153
 - of creation 133
 - of human beings 3, 120–122, 126–128
 - of reality 122
- freedom 1, 3, 86–88, 100, 124–126
- and responsibility 123, 126
- future ethics 214, 215, 225, 226, 230–232
- future generations 6, 137–144, 146–148, 150, 154, 158, 195, 212, 225
- Gestell (Heidegger) 52, 60, 61, 66–70, 75, 76, 78
- God 82, 84, 85, 88, 89, 91, 92, 131
- gift 131
 - grace 131
 - grace of 86
 - presence of 131, 133
 - relation to us 133
 - triune 85
 - will of 84, 87
- good life 95–97
- grief 143
- guilt 40, 63, 78, 154, 156, 158, 163–168
- hope 137, 140, 142
- human being 114, 115
- ahuman 115
 - as animal 113
 - as animal rationale 116
 - as creation 131
 - as deficient being (Gehlen) 2, 113
 - definition 111
 - existence (Dasein) 122, 128, 129
 - more-than-human 115
 - non-human 115
 - prosthetic extension of the 114
 - suchness (Sosein) 122, 129
 - trueness (Wahrsein) 122, 129
- human enhancement 93
- Human-Machine Hybrid 131–133
- humanitas 115, 116
- humanity
- as normative project 119
- humanum 3, 106, 109
- IACA-model of law 196, 198, 199
- imago Dei 116, 130
- imperial violence *see* colonial violence
- imputatio 3, 8, 9, 124
- intelligence (as a virtue) 97
- intergenerational 177–181, 184, 186–189, 191–194
- justice 195–197, 202, 210–212
- judgement 96–99, 102, 106–110
- bioethical 104
 - good 97
 - moral 104
 - reflektierende Urteilskraft (Kant) 109
- legal imperceptibility 201
- legal invisibility 200, 204
- legal order 196–205, 207, 208, 210, 212
- legal recognition 207, 210
- misrecognition 209
- liability 152, 155, 166–168
- likeness
- of God 88
- limit situation 28
- digital limit situation 29
- Machenschaften (Heidegger) 69
- magnanimity 97
- memory 39, 40
- loop 39, 40
- moral relativism 99, 110
- more-than-human
- collectives 196, 197, 201, 202, 207, 210–212

- life 156
- mourning 27, 28, 143
- natality 191, 195, 210, 211
- neural network 44, 48, 49
- NLP (natural language processing) 8
- nudging 57
- orders of preservation (Bonhoeffer) 142
- pandemic 1, 177–180, 184, 185
- passivity 112, 120, 128–130
 - creative 130, 132
 - deep passivity 120, 129–133
 - foundational 129
 - radical passivity 207
- past generations 143
- penultimate (Bonhoeffer) 140, 142
- personhood 153
 - relational 153
- phenomenology 33, 201, 203
 - critical 154, 155, 170
- phronesis 96, 97, 104, 105
- place-holding the future 211
- pluralism 99, 110, 118, 120, 131
- potentiallying history (Azoulay) 155, 156, 158–160, 164, 166, 169, 170, 174, 175
- power 28, 51–59, 65, 69–78
 - and powerlessness 77
 - descision 54, 55, 59
 - dimensions of (Lukes) 56
 - discursive 70, 72
 - instrumentarian (Zuboff) 51, 55–60
 - noumenal (Forst) 73
 - of passivity 112
 - of reasons 52, 56, 70, 71, 73, 74
 - radical asymmetries of 138
 - reason of 52, 70, 74
 - structures 52
 - subject of 52–56, 74
 - technique of 43
- powerlessness 209
- prediction of future behavior 51, 60, 65, 68, 71
- problem of generations 138
- prudence 97
- relationality
 - deep relationality 28, 30, 35
 - human 32
- remembrance 142
 - commemorating 27
- representation 200, 201, 205, 212
 - recognitive 206
- Residential Schools 151, 152, 157–159, 167–175
- responsibility 1–3, 9, 40–42, 50–53, 55, 59, 62, 76–78, 119, 122, 123, 126–128, 156, 166, 180, 184, 186, 187, 190–192, 194
 - attribution of 3–5, 8, 41–43, 45–47, 51, 53–55, 59, 76, 124
 - decolonial 152, 160
 - for the future 3, 137, 227
 - implementation in machines 40
 - individual 166
 - intergenerational 137, 141, 143–147, 151, 152, 154, 157, 163, 165–167, 228
 - liability model 53, 166
 - moral 123, 124
 - prospective 42, 46, 47
 - relata of 52
 - retrospective 42, 46, 47
 - structural formula of 1
 - subject of 50, 52, 55, 77
 - to future generations 137, 138, 140, 142, 146, 150
 - to past generations 142, 143
- robots 39, 40, 48, 111, 230
 - sentient robots 36
 - social robots 30
- salvation 84, 87, 88
- self-knowledge 96
- subject
 - human subjectivity 26
 - liberal subject 30, 32, 33, 181
- suffering 92, 111, 143, 160
 - past suffering 143
- superintelligence 117
- technology impact assessment 213–220, 223–225, 230–232
 - neutrality 215–220, 223–225, 231, 232
- temporality 179–181, 186, 187, 190, 193
 - ethical 186
- theosis 81, 83, 84, 87–89, 91, 92, 94

- thrownness *see* digital thrownness
transcendence 10, 40, 112
transhumanism 82–85, 89, 90, 93, 94,
103, 104, 106, 112–115, 147
– etymology of 82
– Humanity+ 112
– Russian Transhumanist Movement 84
– transhumanist movement 81, 82
transparency
– of algorithms 43, 44, 49
utilitarianism 99–101
virtue 97, 105
vulnerability 27, 28, 30, 177–179, 184,
185, 191, 193
world image 66, 67, 69, 72, 73, 75
world-destroying violence 163
world-destructiveness 158, 161–163
worldcarefulness 156, 158–164, 171, 172