Benjamin Beil,
Gundolf S. Freyermuth,
Hanns Christian Schmidt (eds.)

Playing Utopia

Futures in Digital Games

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Media narratives inform our ideas of the future – and Games are currently making a significant contribution to this medial reservoir. On the one hand, games demonstrate a particular propensity for fantastic and futuristic scenarios. On the other hand, they often serve as an experimental field for the latest media technologies. However, while dystopias are part of the standard gaming repertoire, games feature utopias much less frequently. Why?

This anthology examines playful utopias from two perspectives. It investigates utopias in digital games as well as utopias of the digital game; that is, the role of ludic elements in scenarios of the future.

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Preface and Acknowledgements

BENJAMIN BEIL, GUNDOLF S. FREYERMUTH,
HANNS CHRISTIAN SCHMIDT

Niklas Luhmann once asked in which forms the future might present itself in the present. One answer is that media narratives inform contemporary ideas of "the shape of things to come."[1] Games are currently making a significant contribution to this medial reservoir. On the one hand, they demonstrate a particular propensity for fantastic and futuristic scenarios. On the other hand, digital games often serve as an experimental field for the latest media technology. However, while dystopias are part of the standard gaming repertoire, games feature utopias much less frequently. Why?

This anthology attempts to provide some answers to this question. The idea of creating such a publication goes back to a Game Studies Summit which took place at the Cologne Game Lab of TH Köln in November 2018 as part of the ninth *Clash of Realities—International Conference on the Art, Technology, and Theory of Digital Games*. Its subject was "Playing Utopia—Futures in Digital Games." This volume documents the keynotes and lectures given at this summit and adds further perspectives and contributions. It collects various analyses of visions of a better world as they are presented in games as well as investigations of the role ludic elements play in such scenarios.

In the introductory essay "Utopian Futures. A Brief History of Their Conception and Representation in Modern Media—From Literature to Digital

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1   Wells, H.G.: *The Shape of Things to Come. The Ultimate Revolution*, London: Hutchinson & Co. 1933.

Games," Gundolf S. Freyermuth situates the visions of the future that characterize our digital present in the context of media history.[2] After that, the contributions are divided into two major areas: utopias *in* digital games, and utopias *of* digital games. An overview of the individual contributions to these two parts, their highly diverse topics, methodological approaches, and insights, can be found at the end of the introductory essay.[3]

ACKNOWLEDGMENTS

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2   In this volume pp. 9-65.

3   In this volume pp. 51-55.

Utopian Futures

A Brief History of Their Conception and Representation
in Modern Media—From Literature to Digital Games

GUNDOLF S. FREYERMUTH

Once upon a time, Western Culture had no utopian future.[1] If you lived in Greek or Roman antiquity, you could dream of a Golden Age which was forever bygone. If you lived later, in the earthly vale of tears that was the Christian Middle Ages, you could look forward to eternal life in the great beyond—paradise, hopefully; or hell. However, there were no utopian hopes that structurally corresponded to the prevalent ideas of the modern age, i.e., the belief that the future should be a better time, which if we did not live to see and experience then at least our direct descendants might.[2]

I will argue that the concept of such utopian futures—their theoretical possibility rather than any details of content—is the result of cultural changes which began with the Renaissance and that media, theoretical and artistic visions, had and still have a decisive role in the development of this new concept.

Telling the history of utopian futures means reading and watching and playing a rich array of stories in which humanity's hopes and desires have manifested themselves. Such research would be exciting and essential at any time. At present, however, there is a further interest: It seems that now, in the

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1 Or any other culture that we know of. But in this paper, I will limit myself to the history of utopian hopes in Western culture.

2 See the more detailed account and debate below in parts V-VII.

first decades of digital culture, we are again creating new utopian blueprints for the future. Their contours indicate that the emerging hopes and desires driven by the potential of 21st-century technologies will be dramatically different from the utopias of the pre-industrial and industrial times.

My investigation will start with a brief outline of contemporary views on the future (*I. Status Quo: Deep Doom and High Hopes*). Next, I venture to define the central terms and concepts—future, utopia, dystopia—and understand their social and cultural function (*II. Utopian Futures as Cultural Constructs*). After considering the challenges associated with the prediction and artistic anticipation of societies, cultures, and ways of life (*III. Problems of Prophecy and Theories of Anticipation*), I will focus on the analysis of the three major historical phases in which Western culture has dealt with hopes of improving human living conditions. For each period, I proceed in two steps: First, I discuss the respective development of the cultural concepts of time and notions of how to achieve a better life (*IV. Utopian Futures in the Pre-Industrial Ages; VI. Utopian Futures in the Industrial Age; IX. Utopian Futures in the Digital Age*). Second, I trace the artistic efforts to aesthetically shape—however distorted, displaced, compressed, encrypted—new utopian (and also dystopian) visions of the future in various media; particularly literature, film, and games (*V. Hieroglyphs of the Future in Pre-Industrial Cultures*; *VII. Hieroglyphs of the Future in Industrial Culture: Literature; VIII. Hieroglyphs of the Future in Industrial Culture: New Media*). A summary concludes the historical survey, followed by an outlook on the contributions of this volume (*X. Summary and Outlook: Hieroglyphs of the Future in Digital Culture*).

I. STATUS QUO: DEEP DOOM AND HIGH HOPES

Human-made climate change triggers intensifying natural disasters like burning rainforests and water scarcity, thus endangering all biological life. The rise of global and national surveillance in combination with the resurgence of totalitarian systems is jeopardizing our freedom. Worldwide epidemics and biological warfare put our physical survival at stake. Computer viruses, state trojans, and anonymous hackers threaten to compromise the security of our data. Black box artificial intelligence is undermining the dominance of our not-so-sapiens species. And that is just the news reports. According to

some of the most popular works of art and entertainment, the future is even worse off. From blockbuster movies like the HUNGER GAMES film series (2012-2015), MAD MAX: FURY ROAD (2015), BLADE RUNNER 2049 (2017), READY, PLAYER, ONE (2018), and TERMINATOR: DARK FATE (2019) to successful TV series like WESTWORLD (2016/2018) and HANDMAID'S TALE (2017/2018) to AAA games like THE LAST OF US (2013), FALLOUT 4 (2015), MAD MAX (2015), THE SURGE (2017), and MASS EFFECT: ANDROMEDA (2017)—nothing but doom and gloom.

Anyone who got to know our present only via the media—whether through news and non-fiction or novels, feature films, and digital games—could hardly doubt that our planet is no longer habitable and that our civilizations are no longer sustainable. We live in the "Golden Age of Dystopian Fiction."[3] Its beginnings, however, date back decades, as Jill Lepore argues. She quotes literary scholar Chad Walsh, who in 1962 observed that a "decreasing percentage of the imaginary worlds are Utopias" and "an increasing percentage are nightmares,"[4] and she also quotes Margaret Atwood, the author of the dystopian novel *The Handmaid's Tale* (1985), who wrote in the 1980s: "It's a sad commentary on our age that we find dystopias a lot easier to believe in than utopias."[5]

We are reaping the harvest that has been sown in the final years of industrial culture and at the dawn of digital culture. Critics claim for quite some time that we are in the grip of a dystopian plague. In 2014, Michael Solana observed: "Certainly dystopia has appeared in science fiction from the genre's inception, but the past decade has observed an unprecedented rise in its authorship. Once a literary niche within a niche, mankind is now destroyed with clockwork regularity [...]." He concluded: "The time is fit for us to dream again."[6]

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3   Lepore, Jill: "A Golden Age of Dystopian Fiction," *The New Yorker*, May 29, 2017; https://www.newyorker.com/magazine/2017/06/05/a-golden-age-for-dysto pian-fiction

4   Ibid.

5   Ibid.

6   Solana, Michael: "Stop Writing Dystopian Sci-Fi—It's Making Us All Fear Technology," *Wired*, August 14, 2014; https://www.wired.com/2014/08/stop-writing-dystopian-sci-fiits-making-us-all-fear-technology/—The same issue published an opposing opinion piece by Maloney, Devon: "No, Dystopian Sci-Fi Isn't Bad for

Of course, many do still dream. There are not just dystopias today; there are also widespread hopes, big promises, and positive fictions telling us that we are moving towards the edge of a better tomorrow. According to these visions, we will profit from personalized education and personalized medicine, providing replacement organs and three-digit longevity if not immortality. Nanotech and 3D printing will revolutionize manufacturing. Ubiquitous household robots and artificial intelligences will help us do our work. Powerful human-machine interfaces will make us super-intelligent cyborgs. Space travel has already been jump-started by several private, well-funded companies that will offer affordable holidays in orbit and trips to the moon. That is if we still want to go because the seductive, immersive worlds of VR and holographic entertainment will trump all of reality's offerings. In short: We will experience a world of abundance that is full of magic by any historical comparison.

Such utopian predictions are presented predominantly in scientific research and popular non-fiction books and publicly proclaimed by leaders and 'evangelists' of high-tech industries.[7] In the arts and mass entertainment—or the humanities, for that matter—, future-positive attitudes are harder to come by. When in 2017 Yorgo Lee undertook to draw up a list of "Optimistic Sci-fi: 10 Movies That Think We Have a Chance," he had difficulties finding convincing contemporary examples.[8] Moreover, for the few blockbuster films from the last decade that he does list—HER (2013), INTERSTELLAR (2014)—, it seems doubtful that they convey an unabashedly positive outlook.

The same holds for some of the—imagined—future advances mentioned above, particularly AI or nanotech: What gives hope to some, puts fear into others. More than ever, the demarcation between utopia and dystopia seems to hinge on political positions and moral attitudes. A telling example of this is the reaction of author Stephen Marche to Google co-founder Larry Page's

Society. We Need It More Than Ever"; https://www.wired.com/2014/08/no-dysto pian-sci-fi-isnt-bad-for-society-we-actually-need-it-more-than-ever/

7   See for example Kurzweil, Ray: *The Singularity is Near: When Humans Transcend Biology*, New York: Viking 2005.

8   Yorgo Lee: "Optimistic Sci-fi: 10 Movies That Think We Have a Chance," *Medium*, March 1, 2017; https://medium.com/@yorgo.douramacos/optimistic-sci-fi-10-movies-that-think-we-have-a-chance-3decac4c1ab4

future visions. Page raved about potential improvements to his memory: "Eventually you'll have the implant, where if you think about a fact, it will just tell you the answer."[9] However, what Page—and not only he—is dreaming of, frightens Marche profoundly:

"That's not a conspiracy theorist babbling outside the toilets in a public library about how Google's going to put a chip in your brain. That's Larry Page. […] The single most important technologist alive believes the future is brain implants. Literally, I've had nightmares since reading that passage."[10]

The strong and strange mixture of contradictory and opposing views, hopes and fears, which represents the status quo of utopian (and dystopian) thinking has, in spite of all its diversity, a common basis: What we think about the future and believe we know about it, we owe mainly to information and aesthetic-fictional representations that we obtain from media. The same applies, of course, to almost everything. "Whatever we know about our society, or indeed about the world in which we live, we know through the mass media," Niklas Luhmann stated.[11] The future, though, is not yet part of our world, at least not entirely. Before it can be fully realized, it has to be imagined. While the details of the future, whose utopian and dystopian versions we are currently negotiating, will be the result of media productions and engagement with them, the influence of media reaches further. Even the basic notion that utopian futures like these are possible at all—the mental category of such prospects—has been generated through modern media; first written matter, later cinematic narrations, and more recently interaction with and in digital games.

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9   Larry Page's statement appears in: Levy, Steven: *In the Plex: How Google Thinks, Works, and Shapes Our Lives*, Simon & Schuster 2011. It is cited here after Marche, Stephen: "*Star Trek: The Next Generation* Was the Last Sci-Fi Show Hopeful About the Future. Brave New Worlds have been Replaced by a Google Chip," *Esquire*, May 22, 2014; https://www.esquire.com/entertainment/tv/a3120 6/star-trek-the-next-generation-future/

10   Ibid.

11   Luhmann, Niklas: *The Reality of the Mass Media: Cultural Memory in the Present*, Stanford: Stanford University Press 2000, p. 1.

II. UTOPIAN FUTURES AS CULTURAL CONSTRUCTS

Big History tells us that since the cognitive revolution, our species has the unique "ability to transmit information about things that do not exist at all."[12] Yuval Noah Harari names non-material entities like "gods, or nations, or limited liability companies."[13] To the list of "imagined" but "intersubjective orders,"[14] we can add the future. Its central characteristic is that it is "unwritten," as Cicero and Joe Strummer, lead singer of *The Clash*, equally emphasized.[15] The "facta," the facts that have been established, are categorically separated from the "futura," the 'things' and 'actions' which are about to exist but have yet to be. This notion, however, that the time before us can bring more than the return of the same natural rhythms, seasons and lifetimes, is comparatively recent. Only about 2,500 years ago, "when Greek philosophers were reframing time from its cyclical to its linear shape and developing abstract thinking,"[16] the new tripartite division of time into past, present, and future created the potential for utopian thinking.

Two thousand years later, in 1516, Thomas More coined the term 'Utopia'; denoting either a 'no place' or a 'good place.'[17] The genre that More established is now commonly defined as the attempt to design in media—

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12 Harari, Yuval Noah: *Sapiens: A Brief History of Humankind,* New York: Harper 2015 (Kindle edition), p. 24.

13 Ibid., p. 31.

14 Ibid., p. 116.

15 For Cicero see Gidley, Jennifer M.: *The Future: A Very Short Introduction*, New York: Oxford University Press 2017 (Kindle edition), loc. 986; for Joe Strummer see Montfort, Nick: *The Future*, Cambridge, Mass.: MIT Press, 2017 (Kindle edition), p. 16.

16 J. M. Gidley: *The Future*, loc. 841.

17 The Greek noun 'topos' means place; the prefix 'ou' means 'not'; the prefix 'eu' means 'good.' More himself plays with the two possible meanings in a short poem that he had prepended to the first edition: "Wherefore not Utopia, but rather rightly, / My name is Eutopie: a place of felicity."—For an analysis of More's fictitious account see below *V. Hieroglyphs of the Future in Pre-Industrial Cultures*, pp. 25-26.—For today's discussion about Utopia and Eutopia see N. Montfort, *The Future*, p. 40: "Those who study utopian thought and writing distinguish, however, between a utopia or 'no place' and a eutopia or 'good place.'"

literature, film, games—a "non-existent society" which is "described in considerable detail and normally located in time and space."[18] Such utopian concepts express not just "hope but desire—the desire for a better way of being."[19]

Dystopic blueprints for the future pursue the opposite objective: to express disapproval of possible societies and primarily undesirable living conditions. The term 'Dystopia'—the Greek prefix 'dis' means 'bad'—was coined in reaction to More's *Utopia* in 1747 by Lewis Henry Younge in his poem "Utopia: or Apollo's Golden Garden."[20] More than a hundred years later and close to the first "dystopian turn from the late 19th to mid-20th century,"[21] the term was popularized by philosopher and economist John Stuart Mill, then prime minister of Great Britain, who used it during a speech in the House of Commons as a warning against false hopes.

Both descriptions of desirable and undesirable non-existent societies seem deeply rooted and confined in their own time—even more so than all artistic expression. Most scholars who have studied utopias and dystopias observed that with some historical distance, visions of the future are revealing the time of their creation in striking ways: unique contemporary concerns, typical longings and fears, the morals and prejudices of their time.[22] Contemporary artists creating utopian or dystopian fiction seem to be well

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18 Sargent, Lyman Tower: *Utopianism: A Very Short Introduction*, Oxford: Oxford University Press 2010 (Kindle edition), p. 6.

19 Levitas, Ruth: *The Concept of Utopia*, Syracuse, N.Y.: Syracuse University Press 1990, p. 191.

20 L.T. Sargent, *Utopianism*, p. 4.—See also Budakov, Vesselin E.: "Dystopia: an Earlier Eighteenth-Century Use," *Notes and Queries 57.1*, Oxford University Press; March 1, 2010: p. 86-88; https://www.academia.edu/944097/_Dystopia_an _Earlier_Eighteenth-Century_Use_Notes_and_Queries_57.1_March_1_2010_8 6-88_Notes_and_Queries_Oxford_University_Press_first_published_online_on _February_8_2010_doi_10.1093_notesj_gjp235_

21 J.M. Gidley: *The Future*, loc. 1198.

22 Cf. Heilbroner, Robert L.: *Visions of the Future: The Distant Past, Yesterday, Today, Tomorrow*, New York: Oxford University Press 1995 (Kindle edition), loc. 1240: "Visions of the future express the ethos of their times."—L.T. Sargent, *Utopianism*, p. 21: "Utopias are reflections of the issues that were important to the period in which their authors lived."

aware of this fact. Neal Stephenson, for example, says: "[W]hat science fiction writers are really doing is writing a kind of metaphorical story about the present."[23]

From this perspective, we can identify several beneficial functions of utopian (and dystopian) thought and artistic creation. Above all, these fictions promote self-awareness. One of the first to recognize that stories about the future are less fantastic than they appear and rather reflect the present, was Darko Suvin. In *Metamorphoses of Science Fiction* he wrote:

"The aliens—utopians, monsters, or simply differing strangers—are a mirror to man just as the differing country is a mirror for his world. But the mirror is not only a reflecting one, it is also a transforming one."[24]

Similarly, L. T. Sargent remarked that "utopia is a mirror to the present designed to bring out flaws, a circus or funfair mirror in reverse, to illustrate ways in which life could be better."[25] In the case of dystopias, this mirroring is usually associated with warnings; "calls to readers to turn in another direction," as science fiction writer Andreas Eschbach says;[26] the telling of "cautionary tales for ourselves," according to Jonathan Nolan, one of the creators of the WESTWORLD series.[27]

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23   Cowen, Tyler: "Neal Stephenson on Depictions of Reality,'" Conversations with Tyler, Episode 71, *Medium*, July 17, 2019; https://medium.com/conversations-with-tyler/tyler-cowen-neal-stephenson-science-fiction-writer-7fbe020e60b6

24   Suvin, Darko: *Metamorphoses of Science Fiction,* New Haven: Yale University Press 1979, p. 25; cited after: Beil, Benjamin: "'Introducing the All New eyePhone!'—The Future of Mobile Media," WiJournal (8/2), November 28, 2014, http://wi.mobilities.ca/introducing-the-all-new-eyephone-the-future-of-mo bile-media/. I am indebted to Benjamin Beil for this information.

25   L.T Sargent: *Utopianism*, p. 112.

26   Haeming, Anne: "'Politik und Science Fiction sind nicht fern voneinander.' Interview mit Bestseller-Autor Andreas Eschbach," *Der Spiegel*, December 21, 2018; https://www.spiegel.de/kultur/literatur/andreas-eschbach-ueber-nsa-es-sin d-viele-ungute-zukuenfte-denkbar-a-1244124.html

27   Watercutter, Angela: "Westworld's Creators Know Why Sci-Fi Is So Dystopian," *Wired*, June 8, 2017; https://www.wired.com/2017/06/westworld-wired-business -conference/

No less critical than the function to create self-awareness seems to be an evolutionary function. Arthur C. Clarke once declared: "One of the biggest roles of science fiction is to prepare people to accept the future without pain and to encourage a flexibility of mind …"[28] Beyond facilitating adaptation to certain changes, utopian fiction can encourage further change, as Robert Anton Wilson used to stress: "Science fiction is liberation. Reality in the old Aristotelian sense is a crutch for those who are afraid to walk alone on their feet, above the Abyss that yaws when we begin to break our mental sets and pause to wonder—really wonder."[29] This potential of utopian thinking and creating to become a catalyst for future developments seems to be its most important social and cultural function. "The influence of SF," writer Thomas M. Disch observed, "can be felt in such diverse realms as industrial design and marketing, military strategy, sexual mores, foreign policy, and practical epistemology—in other words, our basic sense of what is real and what isn't."[30]

However, Disch's—accurate—description poses the question: What special foundations, procedures, and means do utopian (and dystopian) creations command to be able to initiate future affairs through theoretical speculation and artistic anticipation?

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28 Arthur C. Clarke, quoted in: Agel, Jerome (ed.): *The Making of Kubrick's 2001*, New York: New American Library 1970.

29 Robert Anton Wilson cited after: Neuhaus, Wolfgang: "Science Fiction als Pop-Epistemologie. Ein Sinn für Neuorientierung in der hypermedialen Welt," *Telepolis*, August 30, 2002; https://www.heise.de/tp/features/Science-Fiction-als-Pop-Epistemologie-3426255.html—Also: "Storytelling, according to show co-creator Jonathan Nolan, serves an evolutionary purpose, allowing us to try out different realities." (A. Watercutter, "Westworld's Creators Know Why Sci-Fi Is So Dystopian.")

30 Thomas M. Disch cited after: W. Neuhaus: "Science Fiction als Pop-Epistemologie."

III. PROBLEMS OF PROPHECY AND THEORIES OF ANTICIPATION

In his seminal study *The Principle of Hope*, Ernst Bloch wrote about the essential path from abstract to concrete utopia. While their "dreaminess" characterizes abstract utopias, concrete utopias are "an anticipatory kind."[31] However, finding this path is made difficult by different variants of humanity's future blindness. Again, and again, there have been futures that hardly anyone saw coming. In the past decades, they have ranged from the fall of the Berlin Wall to the exponential growth of the World Wide Web; from the burst of the dot-com bubble to 9/11 and the war on terror; from the rise of global surveillance to the historical relapse of nationalism, isolationism, and anti-democratic stances embodied by political leaders such as Recep Tayyip Erdogan in Turkey, Viktor Orbán in Hungary, and Donald Trump in the United States.

Conversely, we have misidentified a number of futures that never came to pass; from the rise of the Soviet economy that many pundits predicted in the 1970s to the rise of Japan as the dominant world power that even more pundits predicted in the 1980s. "Japan has become the most interesting place for future nostalgia," William Gibson says, "with beautiful futures that never came through."[32] The biggest misjudgment, however, concerned the exploration of space. "When Sputnik and Apollo 11 fired the imagination of the world, everyone began predicting that by the end of the century, people would be living in space colonies on Mars and Pluto."[33]

Space is also at the center of the third kind of future blindness: futures that happened, but of which we have lost sight. Currently, there is a space probe flying in interstellar space, more than 22 billion kilometers away. This

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31 Bloch, Ernst: *The Principle of Hope*, Cambridge, Mass.: MIT Press 1986 (*1954), p. 146.

32 Cited after: Wegner, Jochen: "William Gibson: 'Ich hoffe, wir sind nicht in negativen Utopien gefangen,'" *Die Zeit*, January 12, 2017; https://www.zeit.de/zeit-magazin/leben/2017-01/william-gibson-science-fiction-neuromancer-cyberspace-futurist. My translation of the German original: "Japan ist zum interessantesten Ort für Zukunftsnostalgie geworden – mit wunderschönen Zukünften, die nie eingetreten sind."

33 Y.N. Harari: *Sapiens*, p. 412.

probe, Voyager 1, left the planet in 1977 and it still works with 64K of data storage on an eight-track tape deck. But we have more or less forgotten about it. Novelist Warren Ellis once asked: "Can you even consider being part of a culture that could go to space and then stopped?"[34] However, this forgotten future is by no means an exception. The history of culture is rich in examples. Gene Wolf, for instance, named these:

"The Greeks had complex gear systems but they didn't make clocks. The Alexandrians had a simple steam engine but they didn't end up making trains [...] They had indoor plumbing in Ancient Crete. It was lost with the fall of that civilization [...] A model airplane, carved from wood, has been found in an Egyptian tomb."[35]

Considering humanity's fundamental future blindness—the long list of futures that we did not expect, or misidentified, or just forgot—, how is it that so many artistic utopian designs, in retrospect, seem to have gotten at least 'something right'? In 1965, Marshall McLuhan was asked on Canadian TV: "What about the future?" He answered: "We are always living a way ahead of our thinking."[36] With that remark, he expressed the insight that most futures begin early, and parts of them can be discovered in the present. Related ideas were advanced already a decade earlier by futurologist Robert Jungk—*Tomorrow Is Already Here*[37]—and in 1999 by William Gibson: "The future

34 Ellis, Warren: "How to See the Future," raw text of a keynote given at the conference *Improving Reality*, posted September 7, 2012; http://www.warrenellis.com/how-to-see-the-future/

35 Chu, Charles: "The Future-Altering Technologies We Forgot to Invent. Science Fiction Legend Gene Wolfe Shares His Thoughts," *Medium*, February 24, 2018; https://medium.com/the-polymath-project/gene-wolfe-a-science-fiction-legend-on-the-future-altering-technologies-we-forgot-to-invent-a3103572a352

36 McLuhan, Marshall: "Take 30 Interview with George Garlock and Paul Soles," CBC, April 1, 1965; https://www.youtube.com/watch?v=qABC3_8ai58

37 Jungk, Robert: *Tomorrow Is Already Here*, New York: Simon & Schuster 1954.—The title of the German edition *Die Zukunft hat schon begonnen* translates: "The future has already begun."

is already here—it's just not very evenly distributed."[38] Similarly, Tom Standage noted in *The Economist*: "Technologies have surprisingly long gestation periods; they may seem to appear overnight, but they don't. As a result, if you look in the right places, you can see tomorrow's technologies today."[39] Discovery, however, is only a first step. The second is about deducing from the traces detected 'the shape of things to come.'[40] Given this need for inference and imagination, academics, as well as artists, have long stressed that no other groups in society seem as well-suited to the task of anticipating the future as, of course, academics and artists.

The basic idea that anticipation is possible dates back at least to the 18th century. Immanuel Kant spoke of the aesthetic apparition as prophecy and gave our ability to recognize patterns as one reason why we can anticipate the unknown: It allows us to give shape to the universe even before we were able to observe it.[41] Ernst Bloch and Walter Benjamin, among others, continued this thought. Bloch analyzed the "specific pre-appearance which art shows"[42] and praised the "great work of art" in a quite religious phrase as "a star of anticipation."[43] Walter Benjamin, applying Freud's tools and borrowing from 19th-century historian Jules Michelet, set as the motto of his *Arcades*

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38 Gibson, William: "The Science in Science Fiction," *Talk of the Nation*, NPR, November 30, 1999, min. 11:55; http://www.npr.org/templates/story/story.php?storyId=1067220

39 Standage, Tom: "A Toolkit for Predicting the Future," *The Economist*, May 31, 2017; https://medium.economist.com/a-toolkit-for-predicting-the-future-2f24757d9699

40 Wells, H.G.: *The Shape of Things to Come. The Ultimate Revolution*, London: Hutchinson & Co. 1933.

41 See for example: "We are actually in possession of *a priori* synthetical cognitions, as is proved by the existence of the principles of the understanding, which anticipate experience." Kant, Immanuel: *Critique of Pure Reason* (1787), Norman Kemp Smith version; "II. Transcendental Doctrine of Method, § II. The Discipline of Pure Reason in Respect of its Polemical Employment." Cited after: https://www.marxists.org/reference/subject/ethics/kant/reason/ch04.htm

42 E. Bloch: *The Principle of Hope*, p.15.

43 Bloch, Ernst: *Spirit of Utopia*, Stanford: Stanford University Press 2000 (*1918), p. 151.

Project: "Each epoch dreams the one to follow."[44] According to Benjamin, the reason for such dreamy clairvoyance is not supernatural but has a material basis: individual perceptions of contemporary life. Mentally processing advanced experiences of the present, artists gain the patterns as well as the raw material they need to anticipate aspects of the future artistically.

In the industrial age, the attitude of many writers and artists corresponded to these theses of the theorists. H.G. Wells published his *Anticipations* in 1902, forecasting "the way things will probably go in this new century."[45] Thirty years later he followed up on his non-fiction bestseller of future telling with the just as successful *Shape of Things to Come*.[46] The assertion that artists are more clairvoyant and far-sighted than most people was by no means limited to authors of utopian writings and science fiction novels. The modernist poet Ezra Pound, for example, claimed: "Artists are the antennae of the race."[47]

There is ample evidence that these promises of being able to anticipate have been and are being met.[48] According to Winston Churchill, H. G. Wells gave the British military "the idea of using aeroplanes and tanks in combat ahead of World War One."[49] In the same vein, Stephen Hawking observed: "Science fiction like *Star Trek* helps inspire the imagination."[50] The spaceship Enterprise is not only superficially connected to the NASA shuttle of

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44 Benjamin, Walter: *The Arcades Project*, Cambridge, Mass.: Belknap Press of Harvard University Press 2002, p. 5.

45 Wells, H.G.: *Anticipations of the Reaction of Mechanical and Scientific Progress upon Human Life and Thought,* New York and London: Harper. Bros. 1902; online: http://www.gutenberg.org/ebooks/19229

46 H. G. Wells: *The Shape of Things to Come*.

47 Pound, Ezra: "The Teacher's Mission," in: *Literary Essays*, London: Faber and Faber 1954, pp. 58-63; here p. 58.

48 See later examples pp. 21-22 and p. 35.

49 Merchant, Brian: "Nike and Boeing Are Paying Sci-Fi Writers to Predict Their Futures. Welcome to the Sci-Fi industrial complex", *Medium*, Nov 28, 2018; https://onezero.medium.com/nike-and-boeing-are-paying-sci-fi-writers-to-predict-their-futures-fdc4b6165fa4

50 Krauss, Lawrence: "Foreword," in: Finn, Ed/Cramer, Kathryn (eds.): *Hieroglyph: Stories and Visions for a Better Future*, New York: William Morrow 2014 (Kindle edition), loc. 109.

the same name or the STAR TREK tricorder to Motorola's StarTac phone. Neal Stephenson, therefore, claims that good science fiction provides more than "inspiration."[51] It supplies "hieroglyphs of the future": "a plausible, fully thought-out picture of an alternate reality in which some sort of compelling innovation has taken place."[52]

In the following historical parts, I will use this concept of the hieroglyph to demonstrate how emerging utopian visions were transformed into concrete artistic representations of possible futures.

IV. UTOPIAN FUTURES IN THE PRE-INDUSTRIAL AGES

Those who sought better times prior to the Christian Middle Ages usually looked backward. "Most human cultures did not believe in progress. They thought the golden age was in the past, and that the world was stagnant, if not deteriorating."[53] In the culture of ancient Egypt, Henri Frankfort noticed "the emptiness of its views of its future."[54] In Greek antiquity and later in Roman antiquity, the myth of the metal ages dominated, as codified first by the Greek poet Hesiod and then by the Roman poet Ovid. According to their writings, the path of humanity through time led inescapably downwards: from gold, silver, and bronze to iron, Hesiod's and Ovid's own age.[55]

The Christian doctrine of salvation then exchanged the lost Golden Age for the expulsion from the Garden of Eden. Better times, i.e., salvation waited only in the afterlife. Crucial for an understanding of the non-utopian attitude of the Middle Ages is the fact that its people did not think of themselves as living in a middle age—this perspective is modern. They firmly believed that

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51 Stephenson, Neal: "Innovation Starvation," *Wired*, October 27, 2011; https://www.wired.com/2011/10/stephenson-innovation-starvation/: "The Inspiration Theory. SF inspires people to choose science and engineering as careers. This much is undoubtedly true, and somewhat obvious."

52 Ibid.

53 Y. N. Harari: *Sapiens*, p. 264.

54 R. L. Heilbroner: *Visions of the Future*, loc. 238.

55 Ibid., loc. 247.

their time was the final stage of the world, the Last Days.[56] Consequently, they were more drawn to dystopian than to utopian thinking. "The most common form of utopian writing during this period were apocalypses, which foresaw an imminent cataclysm in which God would destroy the wicked and raise the righteous for a life in a messianic kingdom."[57]

Around 1500, however, a more secular and—anachronistically speaking—almost utopian vision emerged in Northern Italy: the notion of a possible rebirth of ancient culture. *La rinascita*, the Renaissance, marks the beginning of modern times.[58] An early result was the scientific revolution. Yuval Noah Harari calls it history's "most momentous choice, changing not only the fate of humankind but arguably the fate of all life on earth."[59] Scientific insights, especially the discovery of two new worlds, instantaneously altered the horizon of Western humanity. The confrontation with the Americas, unknown to the scriptures as well as to cartographers of antiquity, popularized awareness that the earth offered completely unknown possibilities. The almost simultaneous realization of our planet's position in the solar system shifted the entire human race from the center of the universe to its periphery. Both shocks to the traditional Christian view initiated a gradual process of secularization of thought. In the course of a quarter of a millennium, it was to culminate in the Enlightenment.

To summarize, in pre-industrial times, the notion of a better life was based on the natural life cycle. Desire for a better life attached itself—as in antiquity—to the past, which was thought of as a better youth of humanity to which no return was possible. Or hope clung—as primarily in the Christian Middle Ages—to an afterlife in which human existence was to continue forever. Only in the early modern period did the discovery of hitherto unknown regions of the world undermine both the ancient fixation on the past and the Christian negation of the mundane. Travelogues that appeared 'incredible'

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56 Geuenich, Dieter: "Zukunftsvorstellungen im Mittelalter. Antrittsvorlesung an der Universität Duisburg," May 30, 1989; https://duepublico.uni-duisburg-essen. de/servlets/DerivateServlet/Derivate-5183/GeuZuk.htm

57 L.T. Sargent: *Utopianism*, p. 92.

58 The term *la rinascita* ('rebirth') was first used in Vasari, Giorgio: *The Lives of the Most Excellent Painters, Sculptors, and Architects*, Florence: Torrentino 1550 and 1558.

59 Y. N. Harari: *Sapiens*, p. 244.

to contemporaries, such as those by Amerigo Vespucci at the beginning of the 16ᵗʰ century, inspired a new orientation towards the unknown and brought about the historical invention of the utopian.

V. HIEROGLYPHS OF THE FUTURE IN PRE-INDUSTRIAL CULTURES

In Western culture, reflections on the future and its artistic anticipations began in Greek antiquity and primarily in the medium of writing.[60] Plato's *Republic* (380 BCE), fluctuating aesthetically "somewhere between literary imagination and academic scenario,"[61] is regarded as the first essential conception of a society that is 'different' because it is more just. The next change towards utopian thinking came up in Roman antiquity with Virgil's *Eclogues* (approx. 38 BCE). In a radical turn, Virgil shifted the Golden Age from the past to the future. The advent of a better world was also no longer the product of divine powers but owed its existence to human labor. Lyman Tower Sargent writes: "Virgil's images of the simple life in Arcadia are something of a transition between the fantasy of the first tradition and the human-created utopia of the second."[62] The triumph of the Christian religion was to break off this development towards a secular future, or at least interrupt it, for more than a millennium.

The advance to utopian thinking proper, including the term's coinage, then occurred in the context of the scientific revolution and colonial conquests. Both major aspirations at the beginning of the modern era—explore and conquer—were intimately connected; theoretically as well as practically. "For modern Europeans, building an empire was a scientific project, while

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60 The other media—painting, sculpture, theater as well as the Greek and Roman games—continued to concentrate on the representation and celebration of the past and the present and would remain more or less free of the future until the early modern age.

61 J. M. Gidley: *The Future*, loc.: 785.—The concept is said to have been oriented on Sparta, i.e., it was less utopian and more based on an existing model. See L. T. Sargent: *Utopianism,* p. 16.

62 Ibid.

setting up a scientific discipline was an imperial project."[63] Consequently, colonial expeditions used to include scientists. The Italian cartographer, Amerigo Vespucci, gives a prominent example. Around 1500, he accompanied several Spanish and Portuguese expeditions to the New World[64] and published travelogues between 1504 and 1507, which occupied the imagination of the educated. The success of these publications had two significant consequences. First, the recently discovered New World was named after Amerigo Vespucci—America. Second, Vespucci's travelogues inspired the British philosopher and politician Thomas More to write a travelogue of his own.

In 1516, *Libellus vere aureus, nec minus salutaris quam festivus, de optimo rei publicae statu deque nova insula Utopia* was published.[65] More's travelogue was fictitious, of course. However, he tried to make the existence of the island Utopia more believable by using several literary devices. For one, he wrote himself, the well-known Thomas More, into the story. He also framed the invented narrative with actual correspondence with existing contemporaries. Third, he gave his hero Raphael Hythloday a 'credible' biography: Hythloday was supposedly one of the men who accompanied Vespucci to the New World. Venturing a little further into the South Atlantic than Vespucci, he had discovered the island of Utopia. At the same time, More counteracts these factional strategies of authentication with satirical elements. One has to doubt, for example, Hythloday's description of Utopia as a socialist paradise for the mere reason that the Greek surname of the narrator means "expert of nonsense." In the end, even the prototype of the new utopian genre keeps its readers in the dark as to whether the 'perfect equality' in the society portrayed is indeed desirable or not somewhat dystopian.[66]

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63 Y. N. Harari: *Sapiens,* p. 297.

64 Two to four; the exact number is in dispute.

65 More, Thomas: *Libellus vere aureus, nec minus salutaris quam festivus, de optimo rei publicae statu deque nova insula Utopia*, Louvain, Habsburg Netherlands 1516.—The Latin title translates to "A truly golden little book, no less beneficial than entertaining, of a republic's best state and of the new island Utopia."

66 The ambivalence that characterizes utopian writings from the outset seems important for the further development of the genre—that one's great desire is another's great fear.

It was to be a century before More's prototype found successors. Then, however, a series of utopian writings began. The most influential include Tommaso Campanella's *The City of the Sun*,[67] Johannes Valentinus Andreae's *Description of the Republic of Christianopolis*,[68] and Francis Bacon's *The New Atlantis*.[69] These early utopias are characterized by the fact that they focus on isolated and manageable venues: islands and city-states. For the first time, the ideal life is not in another age but another place.[70] The connection with the contemporary discovery and conquest of the New World seems evident. Better or perfect societies do not have to be created; they already exist and have for quite some time. However, just like the wonders of the Americas, these utopian places have to be discovered.

Equally evident seems the close relation of the emerging utopian thought to the historical process of secularization. While the authors of the early utopias stay firmly attached to the Christian faith system, their writings at the same time tend to secularize central elements of the religious belief in paradise. The better life, which is supposed to wait in the afterlife, can now be found in this world. A dialectical relationship to the Christian doctrine of salvation will remain constitutive even for the secular utopian designs of the coming centuries. The longing for utopia persists as both a result of but also a reaction to secularization. "Utopianism is often read as the desire to overcome original sin and re-enter Eden, or, with sin gone, create a new utopia."[71]

In summary, two characteristics of the utopian thinking that developed in the early modern period can be identified. First, the good places that in antiquity and the Middle Ages had been considered lost in time—the Golden Age, the Garden of Eden from which humankind was expelled—were relocated from the past to the present and became remote islands or cities waiting to be discovered.[72] While the first characteristic shows itself in comparison

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67 Campanella, Tommaso: *The City of Sun*, written in 1602 in Italian, published in Latin, Frankfurt 1623.

68 Andreae, Johannes Valentinus: *Description of the Republic of Christianopolis,* Strasburg: Lazarus Zetzner 1619.

69 Bacon, Francis: *The New Atlantis*, published posthumously, London 1627.

70 See for this and the following J. M Gidley, *The Future*, loc. 1,035.

71 L. T. Sargent: *Utopianism*, p. 88.

72 With the development of these new ideas, the old ones of course did not disappear. Both coexist until today. See for example: "W. H. Auden, in a once famous essay,

to the past, the significance of the second reveals itself primarily in contrast to the dominant utopian visions of the following periods. In this first phase of utopian thought, between the Renaissance and Enlightenment, visions of the future were concentrating on radically new ways of organizing society, that is on the making of a better life through the improvement of moral rules and political laws. Later, in the process of enlightenment and industrialization, the focus of utopian desire would shift—from morals and politics to technological innovations and their cultural consequences.

However, this change in emphasis did not come out of nowhere. The utopian interest in technology was annunciated hieroglyphically. Particularly widespread were speculations about future means of transport. Already in the mid-13th century, Roger Bacon envisioned helicopters, just like Leonardo da Vinci in the late 15th century. In the early 17th century, Tommaso Campanella foresaw "vessels able to navigate without wind and without sails,"[73] and a few years later Francis Godwin imagined a voyage to the moon employing a flock of wild swans.[74] In the 18th century, these developments resulted in innovative literary approaches to telling stories of better futures, such as the epistolary novel *The Memoirs of the Twentieth Century* written by Samuel Madden in 1733.[75] "In French, the new genre was called 'roman de l'avenir', in English 'the tale of futurity', and in German, 'Zukunftsroman'."[76]

divided all imaginative people into Utopians and Arcadians—makers of the New Jerusalem we want, or seekers of the lost Eden we've been expelled from." (Gopnik, Adam: "What Can We Learn from Utopians of the Past?" *The New Yorker*, July 23, 2018; https://www.newyorker.com/magazine/2018/07/30/what-can-we-learn-from-utopians-of-the-past).—Gopnik is referring to "Dingley Dell & the Fleet," published in W. H. Auden's collection *The Dyer's Hand and Other Essays*, London: Faber & Faber 1962, pp. 407-428; online: https://archive.org/stream/in.ernet.dli.2015.16420/2015.16420.The-Dyers-Hand-And-Other-Essays_djvu.txt

73 N. N.: "Tommaso Campanella," *Stanford Encyclopedia of Philosophy*, Aug 25, 2014; https://plato.stanford.edu/entries/campanella/

74 Godwin, Francis: *The Man in the Moone*, published posthumously, London: John Norton 1638.

75 Madden, Samuel: *The Memoirs of the Twentieth Century*, London: Osborn and Longman, Davis and Batley 1733.

76 J. M. Gidley: *The Future*, loc. 1,111.

VI. UTOPIAN FUTURES IN THE INDUSTRIAL AGE

During the Enlightenment, the future became a particular concern. The ostensible reason was profound political change. The old monarchic order, which had been thought to be God-given and eternal, began to crumble. Unknown historical horizons opened up. However, the political revolutions manifesting the search for new orders—the American Revolution (1765-1783) and the French Revolution (1789-1799)—were only the tip of the iceberg. Under the surface of visible changes, fundamental shifts in the tectonics of civilization took place. Walter Benjamin famously described the unprecedented upheaval as an unforeseen climate change that puts the "Angel of History" into distress:

"[A] storm is blowing from Paradise; it has got caught in his wings with such violence that the angel can no longer close them. The storm irresistibly propels him into the future to which his back is turned, while the pile of debris before him grows skyward. This storm is what we call progress."[77]

This storm of progress, writes Robert L. Heilbroner, was raised by the combined effect of three forces "that had previously existed only in embryo or on the fringes of society."[78] One is the rational investigation of the world, established two hundred years earlier in the scientific revolution, which had since produced groundbreaking insights in the natural sciences and the humanities. The second is "the appearance of an idea utterly absent from all the civilizations […], namely the legitimacy of the will of the people as the source of their own collective direction."[79] The third, and arguably most influential, force is the emergence of a new economic system reorganizing the production and distribution of material goods. Karl Marx would soon analyze, understand, and criticize its mechanisms. Heilbroner concludes: "Taken together the three forces [i.e., science, democracy, and capitalism] formed

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77 Benjamin, Walter: "Theses on the Philosophy of History," in: *Illuminations*, New York: Schocken Books, 1969, p. 249.

78 R. L. Heilbroner: *Visions of the Future*, loc. 527.

79 Ibid., loc. 1,247.

the basis of an utterly new conception of the future as embodying Progress."[80]

The fuel feeding the escalating speed of progress was, of course, economic growth; a steady expansion of production and consumption like no civilization before had experienced.[81] Until then, greater prosperity could only be achieved through geographical and social redistribution—war and conquest, slavery, colonization, spoliation, expropriation. With industrialization, the millennia-old economic stasis ended. It is true that the evolving capitalistic order, specifically the reign of the market and the unfamiliar phenomenon of seemingly limitless growth, left many contemporaries uneasy. But already in the late 18th century, the view became popular that economic advances were to be accompanied by a steady improvement in human living conditions.[82] Thus, as a consequence of growth, a gradual cultural re-evaluation of the past commenced. Its idolization, the longing for the Golden Age or the admiring imitation of antiquity, gave way to the understanding that the present was in many respects better than former times; an insight which in turn led to the assumption that the future should be even better than the present.

This cultural reassessment had two effects. First, the future became the preferred vanishing point of utopian hopes. "At the end of the eighteenth century, a significant shift from space to time took place in utopian writing. The typical setting of the ideal society (or its opposite, dystopia) radically changed from a different place at the same time to the same place at a different time."[83] Second, since the future was now the central field for utopian action, various efforts started to foresee and plan progress.

The first attempts were made by leaders of the totalitarian systems rising in Europe after the turn of the 20th century. They aimed to conquer and subjugate the new frontier of the future. Like Karl Marx and Friedrich Engels, who mocked the utopian socialists of their time, Vladimir Ilyich Lenin was decidedly anti-utopian. "In politics utopia is a wish that can never come

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80 Ibid., loc. 1,252.

81 Y. N. Harari: *Sapiens*, p. 304ff.

82 N. Montfort: *The Future*, p. 28.

83 J. M. Gidley: *The Future*, loc. 801. Gidley summarizes findings of the sociologist Wendell Bell.—I will discuss this 'temporal turn' of utopian visions in the following section.

true," he wrote in 1912. Consequently, the Bolshevists, once they had consolidated their dictatorial regime, undertook to predetermine the economic future of the Soviet Union through a series of five-year plans.[84] In the same way, the German National Socialists insisted that party and state should control all future progress. Their first four-year plan came into force in 1933, the year Adolf Hitler seized power.

Scientific approaches to investigate the future took more time to come to fruition. Already in 1902, H. G. Wells gave a lecture at the Royal Institution of Great Britain on "The Discovery of the Future."[85] His suggestions, however, were so inconsequential that he could complain thirty years later, as Gidley summarizes, "that although there were thousands of professors of history, there was not a single professor of fore-sight in the world."[86] Only after the Second World War, the gradual establishment of scientific research into the future began. Its main objective was to better understand the mechanisms of progress in the interest of forecasting and long-term planning in the context of democratic politics. Robert Jungk,[87] Ossip K. Flechtheim,[88] Herman Kahn,[89] and Alvin Toffler[90] were among the pioneers of Future Studies. Today, the comparatively young transdisciplinary academic field is "combining education, philosophy, sociology, history, psychology, and economic theory with real-life observation."[91] As the three central methods, J. M. Gidley

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84 The scriptwriters of NINOTSCHKA (USA 1939, D: Ernst Lubitsch), Charles Brackett, Billy Wilder, and Walter Reisch, found prophetic words for the success of this effort: "Comrade. I've been fascinated by your Five-Year Plan for the last fifteen years."

85 Wells, H. G.: *The Discovery of the Future: A Discourse Delivered to the Royal Institution on January 24, 1902*, London: T. Fisher Unwin 1902; online: http://www.gutenberg.org/ebooks/44867

86 J. M. Gidley: *The Future*, loc. 713.

87 R. Jungk: *Tomorrow Is Already Here*.

88 Flechtheim, Ossip K.: "Teaching the Future," *Journal for Higher Education*, 16 (1945), p. 460-65.

89 Kahn, Herman/Wiener, Anthony J.: *The Year 2000. A Framework for Speculation on the Next Thirty-Three Years*, New York: MacMillan 1967.

90 Toffler, Alvin: *Future Shock*, New York: Random House 1970.

91 J. M Gidley: *The Future*, loc. 743.

identifies "the extrapolation of historical experience, the utilization of analytical models, and the use of experts as forecasters."[92]

All forecasting, though, is inherently flawed as every prediction about systems with human actors inevitably changes the process it tries to anticipate. In this regard forecasts of natural processes—weather, earthquakes—differ from, for example, economic forecasts. While nature does not take note of prognoses, market participants do. Exposed to forecasts, they change their behavior accordingly. This is probably one of the reasons why, at least in the long term and in retrospect, the predictive qualities of works of art and entertainment have so far been superior to scientific forecasts: because aesthetic works do not predict the future in plain text, with statistical evidence, and explanatory charts, but in hieroglyphic form, with multifaceted designed worlds, ambivalent characters, and ambiguous actions, all of which must be deciphered before anybody can act upon them.

To summarize, in the 18th century, the Age of Enlightenment and during the transition to an industrial society, political and social, technical and economic development accelerated to such an extent that, for the first time, change could be experienced within individual lifespans. The combination of scientific, political, and economic progress allowed contemporaries to recognize the present improvements over the past. Thus, the belief emerged that life was getting consistently better and, in consequence, the future was the time when utopian desires would be fulfilled.

VII. HIEROGLYPHS OF THE FUTURE IN INDUSTRIAL CULTURE: LITERATURE

In the industrial age, artistic engagement with the future started to differ from earlier times in that it was no longer confined to the medium of print. As early as the 19th century, efforts were made to move beyond theoretical conception and literary description and create a more sensorially perceptible future. World Expositions were the most spectacular vehicle because they combined many media—architecture, model building, graphics, sculpture, theater, music, literature—to create an integrated experience. Later, in the 20th century, technological developments and the needs of the industrial masses

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92 Ibid., loc. 1317.

led to the successful introduction of new media, in particular silent and sound film, radio and television. They all came to contribute to the increasing popular exploration of the future.

In the early 19th century, however, visions of the future were still more or less limited to the spoken and printed word. At first, two works became extraordinarily influential that do not fall into the literary genre of utopia: Mary Shelley's novel *Frankenstein; or, The Modern Prometheus*,[93] published in 1818, and the *Manifesto of the Communist Party[94]* that Friedrich Engels and Karl Marx published in 1848. In hindsight, though, Shelley's novel was a precursor of the science fiction genre, which a few decades later would at least partially inherit utopia, and the *Manifesto* by now "is regarded by many as one of the most influential utopian visions in human history."[95]

Literary utopias exploring the future potential of the nascent industrial society were only to appear in the second half of the 19th century, but then in high numbers. Among the most influential are Samuel Butler's *Erewhon: Or, Over the Range*,[96] Edward Bellamy's *Looking Backward 2000-1887*[97] and William Morris' *News from Nowhere*.[98] The three novels are representative of the main variants of utopian writing in the last third of the 19th century. Butler's vision was traditionalist. He still stuck to the pre-industrial model established by More. Erewhon—an anagram of 'Nowhere'—is introduced as a newly discovered distant country. Butler compares its society satirically

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93 Shelley, Mary: *Frankenstein; or, The Modern Prometheus,* London: Lackington, Hughes, Harding, Mavor & Jones 1818; online: http://www.gutenberg.org/files/84/84-h/84-h.htm

94 Engels, Friedrich/Marx, Karl: *Manifest der kommunistischen Partei*: Office der Bildungs-Gesellschaft für Arbeiter: London 1848; online: http://www.gutenberg.org/cache/epub/61/pg61.html

95 J. M Gidley: *The Future*, loc. 1,156.

96 Butler, Samuel: *Erewhon: Or, Over the Range*, London: Trübner and Co., 1872; online: http://www.gutenberg.org/ebooks/1906

97 Bellamy, Edward: *Looking Backward 2000-1887*, Boston: Ticknor & Co 1888; online: https://archive.org/details/lookingbackward200bell

98 Moris, William: *News from Nowhere; or An Epoch of Rest, Being Some Chapters from a Utopian Romance*, Boston: Roberts Brothers 1890; online: http://www.gutenberg.org/ebooks/3261

with Victorian England. At first glance, Erewhon seems utopian, but at second look things become more ambivalent.

Bellamy and Morris were more daring. Their utopian societies are no longer located in the present but in the future. Since Morris' novel was written as a direct response to Bellamy's, the initial situation is similar: both heroes and narrators fall into a deep sleep in the present and wake up in future socialist societies. The two varieties of socialism, however, could not be more different. Bellamy's utopia is the ideal of a coldhearted technocrat. His Boston of the year 2000 is highly developed. Capitalism has been overcome, private ownership of means of production is abolished. A strong centralized state determines the lives of its citizens. Work is strictly regimented and structured according to the requirements of large-scale industrial technology. In return, citizens enjoy free consumption, and their working life ends at the age of 45.[99]

For Morris, who reviewed Bellamy's book, state socialism was not utopia. Quite the opposite, in fact. Associated with the British Arts and Crafts Movement, Morris sought to combine romantic and aesthetic ideals. The socialism his hero experiences in the British future when he wakes up has overcome not only capitalism but also industrialization. Money has disappeared, as have factories and large cities. People's everyday lives are marked by the absence of the alienating division of labor, including the separation of work and private life. In Morris' utopia, people are happy not because they work less but because they work voluntarily and self-determined.

While Bellamy designed an advanced technocratic industrial socialism, Morris imagined a romantic agrarian socialism. From today's perspective, these utopias are blending progressive and retrograde, democratic and authoritarian, liberating, and oppressive elements. In his review of Michael Robertson's, *The Last Utopians: Four Late Nineteenth-Century Visionaries*

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99 Bellamy's book was not only a sensational literary success, selling hundreds of thousands of copies. It also initiated a political movement. In the United States, hundreds of "Bellamy Clubs" were founded, advocating the nationalization of the means of production, and also some utopian communities, whose members tried to live according to the rules of the novel.

and Their Legacy,[100] Adam Gopnik summarizes the conflicting ideological situation at the end of the 19th century:

"The utopian feminists are also eugenicists and anti-Semites; the men who dream of a perfect world where same-sex attraction is privileged also unconsciously mimic the hierarchy of patriarchy, putting effeminate or cross-dressing 'Uranians' at the bottom of their ladder. The socialists are also sexists, and the far-seeing anarchists are also muddle-headed, mixed-up mystics."[101]

However, by then the time of utopian novels was running out, as the title of Robertson's study indicates. A new variant of writing about a better future developed: science fiction. Although the term science fiction did not come into use until the 1920s, the rise of the new genre began already in the second half of the 19th century.[102] Its pioneer was Jules Verne who published, amongst others, *From the Earth to the Moon* in 1865,[103] and *Twenty Thousand Leagues Under the Sea* in 1869.[104] Around the turn of the 20th century, H. G. Wells distinguished himself as the most influential author in this field, not least because he wrote not only science fiction but also dystopian novels and non-fiction books about the future. His most influential contributions to science fiction were *The Time Machine* in 1895,[105] *The Island of Doctor Moreau* in 1896,[106] and *The War of the Worlds* in 1898.[107]

From a present-day perspective, many of the early works of science fiction stand out for their unusually high ability to anticipate future developments, especially technical inventions. Jules Verne alone described hieroglyphically dozens of later inventions, including air conditioning, television,

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100 Robertson, Michael: *The Last Utopians: Four Late Nineteenth-Century Visionaries and Their Legacy*, Princeton: Princeton University Press 2018.

101 A. Gopnik: "What We can Learn from the Utopians of the Past."

102 J. M. Gidley: *The Future*, loc. 1,171.

103 Verne, Jules: *De la terre à la lune*, Paris: Hetzel 1865; English title: *From the Earth to the Moon*, first translation into English 1867.

104 Verne, Jules: *Vingt mille lieues sous les mers*, Paris: Hetzel 1870; English title, *Twenty Thousand Leagues Under the Sea*, first translation into English 1872.

105 Wells, H. G.: *The Time Machine*, London: William Heinemann 1895.

106 Wells, H. G.: *The Island of Doctor Moreau*, London: William Heinemann 1896.

107 Wells, H. G.: *The War of the Worlds*, London: William Heinemann 1898.

space travel, automobiles, and submarines.[108] The best science fiction writers who followed Verne were no less visionary. H. G. Wells foresaw nuclear power and nuclear war, Arthur C. Clarke conceived of geostationary satellites, Isaac Asimov wrote of robots, driverless cars, wall screens, and satellite phones, Robert Heinlein of rocket ships and waterbeds, William Gibson of global cyberspace which we have at least started to construct.

The gradual, more than a century-long, implementation of science fiction as a literary genre, its path from the margins of early industrial culture to the center of digital culture, was substantially fostered by the fact that the anticipation of scientific-technical progress expanded from the medium of writing—novels, non-fiction, magazines, and newspapers—into other media.

World fairs and world expositions initiated this process of multi- and transmedialization already at a time when print still dominated the conception of the future. Since the late 18th century and up to the present, more than half a thousand such events have taken place all around the world, more than 110 alone between 1890 and 1910.[109] Their history documents "how the future has been envisioned and how future visions have been shared with the public."[110] The heyday of these exhibitions lay between the "Great Exhibition of the Works of Industry of All Nations," held in London in 1851 and attended by over six million people, and the "New York World's Fair," held 1939 to 1940 and visited by 44 million people. Its theme was "The World of Tomorrow." The main attraction was a ride into the automotive world to come, commissioned by General Motors and realized by the industrial designer Norman del Geddes who was also a renowned theatrical set designer.

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108 The engineer Simon Lake read Verne's *Twenty Thousand Leagues Under the Sea* when he was eleven years old and went on to construct the first American submarines. He starts the second chapter of his autobiography with the statement: "Jules Verne was in a sense the director-general of my life." (Lake, Simon/Corey, Herbert: *Submarine. The Autobiography of Simon Lake*, New York and London: D. Appleton Century Company 1930, p. 10; online: http://www.submarineboat.co m/files/Submarine%20The%20Autobiography%20of%20Simon%20Lak e.pdf)

109 See https://en.wikipedia.org/wiki/List_of_world%27s_fairs

110 N. Montfort: *The Future*, p. 59.

Called "Futurama," the ride transported its visitors—552 people at a time, 28 000 per day[111]—twenty years ahead

"over a huge diorama of a fictional section of the United States that was designed with a stunning array of miniature highways, towns, 500,000 individually designed homes, 50,000 miniature vehicles, waterways, and a million miniature trees of diverse species. These elements of the diorama gradually became larger as the visitors, seated in chairs overhead, moved through the exhibit, until the cars and other elements of the exhibit became life-size."[112]

The accuracy of the prediction of how everyday life would change under the influence of mass motorization remains astonishing to this day. In the 1960s, the United States was to be traversed by exactly the new highways and freeways the Diorama envisioned. Also, in "a convergence of different sorts of future-making, the First World Science Fiction Convention was held at the fair."[113] By then, however, science fiction had long since ceased to be limited to printed matter.[114] Apart from world exhibitions, several other new media popularized the genre beyond literature, though mainly through literary adaptations.

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111 Fotsch, Paul Mason: "The Building of a Superhighway Future at the New York World's Fair," *Cultural Critique 48*, Spring 2001, pp. 65–97.—The numbers Fotsch provides are taken from a contemporary *Business Week* report.

112 Wikipedia entry "1939 New York World's Fair," https://en.wikipedia.org/wiki/1939_New_York_World%27s_Fair#cite_note-17.—The entry refers to Herman, Arthur: *Freedom's Forge: How American Business Produced Victory in World War II*, pp. 58-65, 338, 343, New York: Random House 2012.—See also General Motor's promotional film about the Futurama TO NEW HORIZONS (USA 1940: O: General Motors); https://publicdomainreview.org/collections/to-new-horizons-1940/

113 N. Montfort: *The Future*, p. 64.

114 The new and popular medium of comics was presented prominently: The exposition offered a *Flash Gordon* Ride using filmed images and vibrating seats, which transported 150 people by rocket to another planet; see https://en.wikipedia.org/wiki/Flash_Gordon#1939_World's_Fair

VIII. HIEROGLYPHS OF THE FUTURE IN INDUSTRIAL CULTURE: NEW MEDIA

The history of fictional film begins, to a certain extent, with a science fiction film, Georges Méliès' A TRIP TO THE MOON (1902), which makes use of works by two of the most important contemporary authors of that genre: Jules Verne and H. G. Wells. A series of Verne and Wells adaptations, mostly shorts as well, followed in the years up to the First World War. In the 1920s, Fritz Lang directed two groundbreaking feature-length science fiction movies. Both were based on novels, however, presented highly contrasting futures. METROPOLIS (1927) displays a dystopic, highly industrialized and urbanized world with gaping social divides between classes. Two years later, WOMAN IN THE MOON (1929) sketches the future of space travel, anticipating numerous elements that forty years later will actually mark the first flights to the moon.[115]

Comics and radio were two other new media contributing to the popularization of science fiction in the early 20th century. While comics about the technological future appeared since the turn of the century, the period of high growth started in the late 1920s. The first *Buck Rogers* issues came out in 1929, followed by *Flash Gordon* in 1934 and *Superman* in 1938. Radio adaptations were produced only a few years later, with the adaptations of the *Buck Rogers* series, which began in 1932, considered the first science fiction shows on American radio. Radio also adapted many classics of the genre. Orson Welles' 1938 version of H. G. Wells' *The War of Worlds* gained particular notoriety, as the factional 'live broadcast' of the landing of Martians allegedly caused panic among many listeners.[116]

Since the mid-20th century, television became another major source of science fiction entertainment. First, early television served as a kind of cinema museum, broadcasting the classics of film history in ever new reruns, including Hollywood's successful serial adaptations of the *Buck Rogers* and *Flash Gordon* comic series.[117] Second, television soon produced its own

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115 See below pp. 38-39.

116 For audience reaction see headline *The New York Times,* October 31, 1938: "Radio Listeners in Panic, Taking War Drama as Fact"; see facsimile http://en.wikipedia.org/wiki/Image:WOTW-NYT-headline.jpg

117 BUCK ROGERS (1939, 12 episodes); FLASH GORDON (1936, 13 episodes).

science fiction, including the highly influential STAR TREK (1966-69) franchise from the mid-1960s onwards.[118] Particularly film and television reinforced science fiction's influence on the practical design of the future. The makers of STAR TREK, for example, anticipated not only today's smartphones, tablet PCs, and noninvasive surgery. In the last third of the 20th century, they also inspired young people to realize these imagined innovations.[119]

An even clearer example can be found in the production and reception of DIE FRAU IM MOND. Fritz Lang hired Hermann Oberth, one of the three most important space pioneers of the early 20th century, as a consultant for his film.[120] Like his two competitors, the Russian Konstantin Tsiolkovsky and the American Robert Goddard, Oberth had come to space travel in his youth by reading science fiction novels. Like Tsiolkovsky but independent of him, Oberth had developed the idea of chemical propellants and multistage rocketry. Oberth not only advised Lang on the cinematic design of the moon ride, specifically the design of the rocket and astronaut's capsule. He also proposed to construct his first real multistage rocket and launch it as a marketing tool for the film's launch. While Lang's movie rocket started successfully to the moon—after the first countdown in history—, Oberth's real rocket failed. Nevertheless, it would have a significant historical impact. Members of the civilian German "Verein für Raumschifffahrt" (Society for Space Travel), among them the young engineer Wernher von Braun, got their hands on Oberth's left-over materials and used them to construct a new rocket called Mirak (short for "Minimum Rakete," i.e., minimum rocket).

"In August 1932, a Mirak demonstration helped convince the German Army that rockets could be practical weapons, and when Hitler became Germany's chancellor five months later, the Society for Space Travel was ordered to cease all experiments.

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118 This original series was followed so far by an animated series, several feature films, and five more TV series.

119 See HOW WILLIAM SHATNER CHANGED THE WORLD (2005).

120 See for the following Benson, Michael: "Science Fiction Sent Man to the Moon," *The New York Times*, July 20, 2019; https://www.nytimes.com/2019/07/20/opini on/sunday/moon-rockets-space-fiction.html

Screenings of WOMAN IN THE MOON were banned, with all prints impounded. The film simply gave too much away."[121]

The rest is war and space history: the Mirak was developed into the so-called "Wunderwaffe," i.e., "miracle weapon" V2 that killed 8,000 to 12,000 British and Belgian civilians while another 12 000 forced laborers died producing it in Germany.[122] SS officer Wernher von Braun, who was in charge of developing and implementing V2, became the man who finally led, in 1969, the United States to the moon. In the process, NASA adopted the countdown that Fritz Lang's film had invented to increase suspense.[123] Rightfully, Science Fiction writer Michael Solanas asks: "Has there been any major technological advancement that wasn't dreamt up first in man's imagination?"[124]

In summary, three changes mark the artistic engagement with utopian hopes in the industrial age. First, designs of better life shifted from faraway places to faraway times. The future became the core action space for the narrative expression of utopian desires. Second, the designs of utopian changes were no longer limited to printed matter. In the 20th century, ideas of a better life were expressed in many media, especially the new industrial media of film and television. Third, the new genre of science fiction began to compete successfully with the established genre of utopia. The focus shifted from questions of morality and better political organization of a static society to the aspect of technological improvement, which is now understood as the central basis of new, better ways of life in societies subject to rapid progress.

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121 Ibid.

122 Leicht, Johannes: "'Die Wunderwaffen' V1 und V2," *Deutsches Historisches Museum*, Berlin, May 19, 2015; https://www.dhm.de/lemo/kapitel/der-zweite-we ltkrieg/kriegsverlauf/die-wunderwaffen-v1-und-v2.html

123 See M. Benson, "Science Fiction Sent Man to the Moon": "As for Oberth's six-foot-long liquid-fueled rocket, developed in 1929 from the budget of Fritz Lang's WOMAN IN THE MOON, it served as a kind of acorn to the 363-foot-tall Saturn 5, directly linking the first big-budget science fiction film to depict a lunar voyage to the actual landing four decades later."—It should be noted that director Fritz Lang refused to work for the Nazi film industry and fled the country. He went on to have a distinguished Hollywood career.

124 M. Solana: "Stop Writing Dystopian Sci-Fi."

While in popular culture science fiction literature almost supplanted the genre of classical utopia, in high literature and culture a modification of this form prevailed: dystopias.[125] Their establishment began with the horrors of the First World War, which demonstrated to humanity the worst of technological progress. Yevgeny Ivanovich Zamyatin's *We* is regarded as the prototype, anticipating many themes of later dystopias. Written in Russian in 1921 and banned in the Soviet Union, the novel was published three years later in English.[126] It depicts a high-tech police state based on mass surveillance. In *We*'s distant future, numbers have replaced names, and every individuality is suppressed. The closeness of the two most significant dystopias of the 20th century—Aldous Huxley's *Brave New World* and George Orwell's *Nineteen Eighty-Four*[127]—to this forerunner is evident; even though both novels describe futures that are even more different than Bellamy's and Morris' once were.

Huxley wrote *Brave New World* in 1931, at the height of the economic depression. Located in the year 2540, the novel evokes the dangers of advanced technology and the liberal capitalist consumer society whose contours emerged in the 1920s and early 1930s. Orwell wrote his novel after the end of World War II. *Nineteen Eighty-Four* portrays possible further developments of the repressive mechanisms introduced by the totalitarian states of the 1930s and 1940s, in particular, Stalin's Soviet Union and Hitler's Germany. Neil Postman summed up the difference between both dystopias: "In short, Orwell feared that what we hate will ruin us. Huxley feared that what we love will ruin us."[128]

In retrospect, we can see that in the dystopias of the first half of the 20th century a change in Western consciousness loomed—an anti-progressive

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125 See Shiau, Yvonne: "The Rise of Dystopian Fiction: From Soviet Dissidents to 70's Paranoia to Murakami," *Electric Literature*, July 26, 2017, https://electriclite rature.com/the-rise-of-dystopian-fiction-from-soviet-dissidents-to-70s-paranoia-to-murakami/

126 Zamyatin, Yevgeny Ivanovich: *We,* New York: E. P. Dutton, 1924.

127 Huxley, Aldous: *Brave New World*, London: Chatto & Windus 1932; Orwell, George: *Nineteen Eighty-Four*, London: Secker & Warburg 1949.

128 Postman, Neil: *Amusing Ourselves to Death: Public Discourse in the Age of Show Business*, New York: Viking 1985, p. xiii.

shift from optimism to pessimism—that with the decline of industrial civilization would soon take hold in the culture and specifically in science fiction.

IX. UTOPIAN FUTURES IN THE DIGITAL AGE

The last decade marks a crisis of the future as we knew it. Critics and science fiction writers have noticed and lamented it. In 2013, Graeme McMillan wrote in *Time Magazine*: "Science fiction seems to have become stuck in a rut of hopelessness."[129] A year later, cultural critic Mark Fischer noticed "the slow cancellation of the future."[130] In 2017, William Gibson remarked that "we are in a historic phase in which we are losing the future per se. Like people in the Middle Ages."[131] The same year, the American band Dead Cross released a song titled "The Future Has Been Canceled," and the European band Palais Ideal released an album of the same title.[132] In 2018, science fiction writer Tom Hillenbrand observed that "when we talk or think about the future, dystopia seems to have become the standard."[133] And Maria Far-

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129 McMillan, Graeme: "Where Are Our Bright Science-Fiction Futures?" *Time*, March 29, 2013; http://entertainment.time.com/2013/03/29/where-are-our-bright t-science-fiction-futures/

130 Fisher, Mark: *The Ghosts of My Life*, London: Zero Books 2014; the first chapter is titled "The Slow Cancellation of the Future."

131 Cited after: J. Wegner. "William Gibson: 'Ich hoffe, wir sind nicht in negativen Utopien gefangen.'" My translation of the German original: "Wir sind jetzt aber in einer historischen Phase, in der wir die Zukunft an sich verlieren. Wie die Menschen im Mittelalter."

132 Dead Cross: "The Future Has Been Canceled," *Dead Cross* (USA 2017, Label: Ipepac); Palais Ideal: *The Future Has Been Canceled* (Netherlands 2017, Label: Dark Vinyl Records).

133 Hillenbrand, Tom: "Dystopien im Film: Science-Fiction und sein Einfluss auf unser Zukunftsdenken," *Berliner Zeitung*, October 27, 2018; https://www.berline r-zeitung.de/kultur/dystopien-im-film--science-fiction-und-sein-einfluss-auf-uns er-zukunftsdenken-31478062

rell quipped in allusion to William Gibson's famous quote, "The apocalypse is already here. It's just unevenly distributed."[134]

Two factors have been suggested as the primary cause of the prevailing pessimistic view of the present and the future. First, what Neal Stephenson called "innovation starvation," a perceived slowdown or even absence of progress. In an opinion piece, aptly titled: "The Dystopic Leftist Youth of Reddit and Facebook. A Look into the Spaces Where Young People Mock the 'Boring Dystopia' that Capitalism has Built," Corin Faife describes the current stagnation:

"In the 40-year period from 1950 to 1990, consumers were introduced to the microwave oven, color television, ATM and credit card, contraceptive pill, cellphone, and personal computer, and, in 1989—the year marking the fall of the Berlin Wall—the World Wide Web itself was invented. […] Besides the smartphone (which is ultimately a miniaturized computer plus the internet), there have been very few inventions in the nearly three decades since the fall of communism that have so fundamentally changed our lives."[135]

This sense of a historical standstill, at least of technological progress, is reinforced by the feeling of being unable to act, to change anything. Neal Stephenson calls it "a general failure of our society to get big things done."[136] Second, then, the dystopian zeitgeist is supposed to stem from a dramatic loss of agency. It seems to paralyze not only the average citizens of Western

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134 Farrell, Maria: "How to Cope with the End of the World," *Medium*, June 7, 2018; https://medium.com/s/how-to-cope-with-the-end-of-the-world/how-to-cope-wit h-the-end-of-the-world-2520ef9d3dbc

135 Faife, Corin: "The Dystopic Leftist Youth of Reddit and Facebook. A Look into the Spaces Where Young People Mock the 'Boring Dystopia' that Capitalism has Built," in: *Medium*, January 22, 2018; https://medium.com/s/darkish-web/the-dystopic-leftist-youth-of-reddit-and-facebook-cbe4e35dfd6f—See also N. Stephenson, "Innovation Starvation": "My parents and grandparents witnessed the creation of the airplane, the automobile, nuclear energy, and the computer to name only a few. Scientists and engineers who came of age during the first half of the 20th century could look forward to building things that would solve age-old problems […]."

136 N. Stephenson: "Innovation Starvation."

democracies but also the elites. Media theorist Douglas Rushkoff reports how in the summer of 2018 he was invited by hedge fund managers to talk about the future.[137] He had to quickly realize, however, that his hosts had long since resigned themselves to the fact that the world was coming to an end. "For all their wealth and power, they don't believe they can affect the future."[138] They did not invite him to learn anything about the future; they just wanted to find out how they as individuals could survive the inevitable apocalypse. Their view of the world was, Rushkoff writes, "a reduction of human evolution to a video game that someone wins by finding the escape hatch."[139]

The paralysis, which is often triggered by dystopian world views, can of course also be observed outside the circles of the super-rich. It has become pervasive. "We are collectively losing faith in our future at the precise moment humanity as a whole needs to think decades and centuries ahead,"[140] Maria Farrell states and summarizes the consequences in her subtitle: "Thinking the Future Is a Dystopia Is Helping to Make It One."[141] Similarly, J. M. Gidley warns how young people, in particular, can be "very deeply affected by the negative images of the future portrayed in the media and dystopian movies."[142] French philosopher Pascal Bruckner analyzed the effects of the contemporary popularization of catastrophic scenarios:

"Day after day the children are accustomed to catastrophism, they are told […] that we humans pay the price for our activities and will die out. This is how we raise fearful generations: The children are not actually mobilized but rather paralyzed."[143]

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137 Rushkoff, Douglas: "Survival of the Richest. The Wealthy Are Plotting to Leave Us Behind," *Medium*, July 5, 2018; https://onezero.medium.com/survival-of-the-richest-9ef6cddd0cc1—For his advice Rushkoff received an enormous fee, as he reveals, more than he earns in half a year as a professor.

138 Ibid.

139 Ibid.

140 M. Farrell: "How to Cope with the End of the World."

141 Ibid.

142 J. M. Gidley: *The Future*, loc.: 2,556.

143 Bruckner, Pascal: "Klimaproteste: Alt und Jung in Unreife vereint," *Neue Zuercher Zeitung*, April 26, 2019; https://www.nzz.ch/meinung/klimaproteste-alt-und-jung-in-unreife-vereint-ld.1476994—My translation of the German original:

Likewise, writer Ilija Trojanov recently stressed "that the dream of a good world is the basis for its improvement. Without utopias, we are at the brink of hopelessness."[144]

Of course, there are also significant efforts in contemporary culture to counter the dystopian mood and attitude. Three seem to be gaining a particular tack and influence. First, the academic study of the future, which began around the middle of the 20th century and focused on theoretical analysis, is taking an artistic-practical turn. Under various buzzwords such as "design fiction"[145] and "science fiction prototyping,"[146] attempts are made to combine the previously separate approaches to forecasting in the sciences, arts, and literature.[147] Using the tools of media production for "systematic imagination"[148]—especially iterative design, world-building, and storytelling—, mixed teams of futurists, artists, and writers try "to explore different possible

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„Tag um Tag gewöhnt man die Kinder an den Katastrophismus, man sagt ihnen, […] dass wir Menschen den Preis für unser Treiben bezahlen und aussterben werden. So ziehen wir angsterfüllte Generationen heran: Die Kinder werden nicht eigentlich mobilisiert, sondern eher gelähmt."

144 Trojanov, Ilija: "Schlagloch: Nie gut, aber besser," *taz*, April 18, 2019; https://taz. de/Kolumne-Schlagloch/!5585265/; German original: "dass der Traum von einer guten Welt die Grundlage für ihre Verbesserung bildet. Ohne Utopien droht uns die Hoffnungslosigkeit."

145 See N. Montfort: *The Future*, p. 113.—Montfort traces the origin of the term to Sterling, Bruce: *Shaping Things*. Cambridge, Mass.: MIT Press 2005.

146 Johnson, Brian David: Science Fiction Prototyping. Designing the Future with Science Fiction, San Rafael, CA.: Morgan & Claypool 2011.

147 See Bouée, Charles-Edouard: "Creating the Present by Imagining the Future: The Power of Science Fiction," *LinkedIn*, April 15, 2019; https://www.linkedin.com/ pulse/creating-present-imagining-future-power-science-fiction-bouée/; Ettel, Anja, "Science Fiction: Wo deutsche Unternehmen an der Zukunft arbeiten," *Die Welt,* April 20, 2019; https://www.welt.de/wirtschaft/article192166549/Science-Fiction-Wo-deutsche-Unternehmen-an-der-Zukunft-arbeiten.html; B. Merchant: "Nike and Boeing Are Paying Sci-Fi Writers"; Nordberg, Anna: "Silicon Valley, It's Time to Hire Science Fiction Writers," *Ozy*, March 19, 2019; https://www. ozy.com/immodest-proposal/silicon-valley-its-time-to-hire-sci-fi-writers/93038

148 N. Montfort: *The Future*, p. 136.

scenarios for the future."[149] One of the pioneers of this new method of fore-casting is former film production designer Alex McDowell, presently Director of the World Building Media Lab at the University of Southern California. The building of future worlds, McDowell says is not just about "prediction and trends": "We are looking for arcs of history through present to future at multiple scales that properly represent each unique world. From the past and present, we extrapolate forward to immediate, near, or far future horizons."[150]

While the academic-artistic approach confronts present stagnation—whether real or imagined—with pragmatic designs of possible better futures, two more radical concepts are outlining, when taken together, an entirely new variant of a utopia. What the twin ideas of *transhumanism* and the advent of a *singularity* are proposing is as radically different from the utopias of the industrial age as the industrial ideas of a better life once were from those of the pre-industrial ages.

The origins of the philosophy, or ideology, of transhumanism go back to the second half of the past century, to writings of biologist Julian Huxley,[151] Jesuit philosopher Pierre Teilhard de Chardin,[152] and AI pioneer Marvin Minsky,[153] among others. However, transhumanist thoughts gained popularity only in recent decades, in the context of digital culture.[154] Transhumanism shifts the focus of the utopian desire once again: The better life is no longer primarily sought by improving the moral values and political organization of society, as in the utopias of the pre-industrial modern age. Also, the better life is no longer primarily sought, as in the industrial era, by improving technologies to control external nature like in production or transport. Instead, the better life is sought by improving the natural shortcomings of humanity itself: through technical and biological self-enhancement, self-modification,

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149 C.-E. Bouée: "Creating the Present by Imagining the Future."

150 Cited after B. Merchant: "Nike and Boeing Are Paying Sci-Fi Writers."— McDowells clients include corporations such as Nike, Ford and Boeing.

151 See Huxley, Julian: "Transhumanism," in: *New Bottles for New Wine*, London: Chatto & Windus 1957; pp 13-17.

152 Teilhard de Chardin, Pierre: *The Phenomenon of Man*, New York: Harper 1959.

153 Minsky, Marvin: *The Society of Mind*, New York: Simon and Schuster 1986.

154 For the pioneering role of Max More and the Extropy Institute in the 1990s see my book *Cyberland*, Berlin: Rowohlt 1996.

and finally, a complete upgrade of humanity to a new species with a higher life span and significantly increased intelligence.

This possible—or impossible—transformation of the species leads to the second new concept, which is about to replace the Enlightenment narrative of gradual progress: the idea of a singularity, a sudden rupture in human history.[155] The basic idea goes back to mathematician and physicist John von Neumann, who while working on the atomic bomb in Los Alamos suggested in talks with his colleague Stanislaw Ulam that we are "approaching some essential singularity in the history of the race beyond which human affairs, as we know them, could not continue."[156] The concept became more widely known half a century later through Vernor Vinge, mathematician and science fiction author, who presented it at a NASA congress in 1993.[157] The vision that regular progress is over and life on earth will experience a rupture was finally popularized by inventor Ray Kurzweil, today Google's Director of Engineering, who predicted in his 2005 bestseller *The Singularity is Near: When Humans Transcend Biology* that the singularity would occur by 2045.[158]

While it is true that the term singularity suggests that it is or will be a unique event, human understanding of the unknown requires comparison with something known. To explain the term singularity, Yuval Noah Harari speaks of the Big Bang as a comparable event in the realm of nature.[159] Kevin Kelly has even related the—possible—singularity to an earlier incident in human history: the "creation of language." He calls it "the first singularity for humans. It changed everything. Life after language was unimaginable to

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155 For a short overview and arguments against a coming singularity see Walsh, Toby: "The Singularity May Never Be Near," *AI Magazine*, (38/3), 2017, pp. 58-62; here p. 58; https://aaai.org/ojs/index.php/aimagazine/article/view/2702

156 Ulam, Stanislaw: "Tribute to John von Neumann," *Bulletin of the American Mathematical Society* 64 (3), 1958; cited after Bostrom, Nick: *Superintelligence: Paths, Dangers, Strategies*, Oxford: Oxford University Press 2015 (Kindle edition), loc. 6,063.

157 Vinge, Vernor: "What is the Singularity?" Presentation at the VISION-21 Symposium sponsored by NASA Lewis Research Center and the Ohio Aerospace Institute, March 30-31, 1993; https://mindstalk.net/vinge/vinge-sing.html

158 R. Kurzweil: *The Singularity Is Near*.

159 Y. N. Harari: *Sapiens*, p. 411.

those on the far side before it."[160] In the case at hand, the question is whether upgraded transhumanist individuals will still be able to understand or at least communicate with unenhanced Homo sapiens.

To summarize, the first decades of the digital age are shaped by sharply conflicting perceptions of the future: on the one hand, a widespread dystopian view of stagnation and loss of agency and, on the other hand, the just as widespread utopian assumption that humanity will be facing rather sooner than later a massive evolutionary leap. Contemporary anticipations of humanity's future express this contradiction.

X. Hieroglyphs of the Future in Digital Culture

Four fundamental changes resulting from the process of technical digitization and cultural digitalization seem to be of particular importance for the artistic exploration of the future and specifically utopian visions. Together, they indicate a new role for and relevance of media. First, the basic technological innovation of digitization—the virtualization of hardware, i.e., the functional substitution of hardware by software—is creating a common signal basis. The material diversity of analog media, and in particular the heterogenous multimediality of industrial media, transforms into the homogenous transmediality of software. In this transfer, all content that used to be fixed in specific materials—on paper, canvas, celluloid—, becomes changeable ad indefinite and can be copied onto new storage media without generational loss. Objects and processes stored in the new digital transmedium are defined by their creators' as well as their users' ability to arbitrarily manipulate them.

The impact of this shift is particularly profound in film and television. Under the conditions of analog production, cameras had the ability—and imperative—to redeem reality, as Siegfried Kracauer wrote, in his seminal *Theory of Film: The Redemption of Physical Reality*.[161] Digital technology now adds the capability to post-process photographically recorded images as well

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160 Kevin, Kelly: *What Technology Wants*, New York: Viking 2010 (Kindle edition), loc. 441.

161 Kracauer, Siegfried: *Theory of Film: The Redemption of Physical Reality.* New York: Oxford University Press 1960.

as generate seemingly photorealistic images from scratch. Under the conditions of digital production, film and television no longer have to reproduce the real. For example, still and moving images of people who are alive or once lived can be altered at will and seemingly photorealistic images of people who never lived can be created. This potential to generate photorealistic images (and corresponding sounds) without index, i.e., a direct reference to physical reality, marks the transition from photorealism to hyperrealism. The consequences for the design of future worlds—worlds that do not exist and cannot be captured by cameras—are evident.[162]

The second fundamental change results from the experience of virtualization as well: the understanding that constitutive elements of the real world that seemed purely material are actually shaped and controlled by software codes. The most dramatic example, of course, is the discovery of the DNA double helix by James Watson and Francis Crick in 1953,[163] just a few years after John von Neumann and Claude Elwood Shannon outlined the fundamentals of digital technology.[164] In the wake of Watson's and Crick's finding, the assumption gradually prevailed that humans are "an assemblage of organic algorithms."[165] As such, we are like all algorithms "not affected by the materials from which the calculator is built."[166] With the fusion of genetic research and computer science, the techno-biological manipulation of the human body (and mind) approaches that of the human gestalt in audiovisual hyperrealism. Thus, as part of the transition to digital culture, we are

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162 In the 1990s and 2000s, however, the new digital hyperrealism primarily served the creation of spectacular apocalyptic worlds and dystopian futures.

163 Watson, James D., and F. H. C. Cricks: "A Structure for Deoxyribose Nucleic Acid," *Nature* 171, April 25, 1953, pp. 737-738; https://www.nature.com/articles/171737a0.pdf

164 Neumann, John von: "First Draft of a Report on the Edvac," University of Pennsylvania 1945. https://sites.google.com/site/michaeldgodfrey/vonneumann/vnedvac.pdf?attredirects=0&d=1; Shannon, Claude Elwood: "A Mathematical Theory of Communication," *The Bell System Technical Journal* (27/1948), July/October, pp. 379–423, 623–56; http://www.math.harvard.edu/~ctm/home/text/others/shannon/entropy/entropy.pdf

165 Harari, Yuval Noah: *Homo Deus: A Brief History of Tomorrow,* New York: Harper 2017 (Kindle edition), loc.: 5,332.

166 Ibid.

experiencing an escalating process of medialization. DNA code seems to become editable and reprogrammable, and transferrable onto different storage systems. Accordingly, quite a few scientists are predicting a "second genesis," a subsequent total rewrite of the code of life.[167]

The medialization of the biological realm points ahead to the third fundamental change. We appear to be in the process of not only altering the essence of what it means to be human but also of physical reality. With advanced technology, from augmented reality to nanotechnology, we have begun to transform the world in which we live into a medium; that is, something we can design, shape, and modify at will. In the early 20th century, at the height of industrialization, Pierre Teilhard de Chardin famously observed that by wrapping the planet with—analog—networks of transportation and communication, humanity was building something like a global nervous system.[168] Currently, this long-term process is advancing to the next level. Physical reality is turning into a hybrid of hard- and software, matter and media. Information that can be retrieved and interactively manipulated overlays the material world. As a result, the production of the future in reality is increasingly becoming indistinguishable from the production of the future in media.

The fourth fundamental change resulting from digitalization is brought about by digital games. In their analog form, mainly as games of chance, they have been linked to the future since the beginnings of Western civilization.[169] However, in contradistinction to almost all of their analog predecessors, from antiquity to postmodernity, digital games are an audiovisual medium.[170] As such, they play a pivotal role in the current simulative and hyperrealistic exploration of the future. Games owe this outstanding position to the "four prin-

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167 See for the term and an early critique Rifkin, Jeremy: "Dazzled by the Science Biologists Who Dress up Hi-Tech Eugenics as a New Art Form are Dangerously Deluded," *The Guardian*, January 14, 2003; http://www.ekac.org/rifkin.html

168 P. Teilhard de Chardin: *The Phenomenon of Man.*—See also Cobb, Jennifer J.: "A Globe, Clothing Itself with a Brain," *Wired*, January 6, 1995; http://www.wired.com/wired/archive/3.06/teilhard_pr.html

169 "Casting lots was the way to hand over the decision to divine agency." (N. Montfort: *The Future*, p. 22.)

170 The notable exception being game shows on analog television.

cipal properties" or affordances of the digital transmedium which Janet Murray analyzed first.[171]

The first affordance is procedurality: the ability not only to describe or show systems—as literature and film do—but represent them as dynamic simulations. Since games and classical utopias both have in common that they design systems, digital games seem more suited than older media to create and convey utopian experiences.[172] Second, digital games (or at least certain genres) are employing the encyclopedic potential of the digital transmedium in the sense that they can provide considerably more information for possible retrieval than older audiovisual media. Third, unlike film and television, digital games are not primarily time-based but can offer the unique ability to freely navigate narrative spaces. Thus, as a medium, in a privileged way they shape the postmodern experience of "the displacement of time, the spatialization of the temporal."[173] Almost two decades ago, Steven Poole remarked that "a videogame is liquid architecture."[174] Henry Jenkins later argued famously "for an understanding of game designers less as storytellers and more as narrative architects."[175] In this respect, games like no other medium have the affordance to simulate non-existent places—utopias—and render them accessible to individual experience and exploration.

This observation leads to the fourth affordance Janet Murry identified: Digital environments are participatory; they are "inviting human action and

171 See Murray, Janet Horowitz: *Hamlet on the Holodeck: The Future of Narrative in Cyberspace.* New York: Free Press, 1997, chapter "The Four Essential Properties of Digital Environments," pp. 71-90.

172 See Domsch, Sebastian: "Dystopian Video Games: Fallout in Utopia," in: Voigts, Eckart/Boller, Alessandra (eds.): *Dystopia, Science Fiction, Post-Apocalypse Classics—New Tendencies—Model Interpretations*, Trier: Wissenschaftlicher Verlag Trier 2015, pp. 395-409; here p. 398.

173 Jameson, Fredric: "Utopianism After the End of Utopia," in: *Postmodernism, or, The Cultural Logic of Late Capitalism*, Durham: Duke University Press, pp. 154-180; here: p. 156.

174 Poole, Steven: *Trigger Happy: Videogames and the Entertainment Revolution*, New York: Arcade Publishing 2000, p. 226.

175 Jenkins, Henry: "Game Design as Narrative Architecture," in: Wardrip-Fruin, Noah/Harrigan, Pat (eds.): *First Person: New Media as Story, Performance, and Game*, Cambridge, Mass.: MIT Press 2004, pp. 119-29, here p. 121.

manipulation of the represented world."[176] Users can try out the designed systems—whether these are fictitious realms or representations of real places—and 'test' their functioning. Games, of course, surpass in this regard not only the older media but also other digital genres because they not just offer but almost always require agency. Without the players acting, there is no progress in gameplay. The ludic emphasis on (inter-) action correlates with the fact that the question of human agency is at the center of all utopian hopes (and the absence of such agency at the center of most dystopian fears).[177] Sebastian Domsch has highlighted this special connection between digital games and utopian worlds:

> "This sense of agency is then—besides video games' general nature as systems—what so strongly relates them to utopian and dystopian thinking: both are concerned with the extent to which human/player agency is able to influence and change a system."[178]

Thus, due to their specific affordances, digital games can function as a virtual training ground for utopian (or dystopian) change. More than other media, games allow us to test alternative scenarios. Such a playthrough of possible futures seems particularly worthwhile, since right now—in the first decades of digital culture—our cultural expectations are undergoing a radical transformation in regard to both what the future will bring as well as the notion in which way the coming change is supposed to arrive.

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Both aspects are the subject of this anthology. Its first part deals with utopian futures as they are anticipated *in* games, the second part with the future *of* games.

The first part, "Utopias in Digital Games," opens with André Czauderna's paper on "Tinkering with Political Utopias and Dystopias in DEMOCRACY 3."[179] In the analyzed turn-based political simulation, players take on

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176 Murray, Janet H.: "Four Affordances," on: *Humanistic Design for an Emerging Medium*, undated; https://inventingthemedium.com/four-affordances/
177 See S. Domsch: "Dystopian Video Games", p. 403.
178 Ibid., p. 401.
179 In this volume, pp. 69-98.

the role of the prime minister of a Western democracy and are given the op-
portunity to go beyond the constraints of everyday politics and test the con-
sequences of radical concepts of society. In a detailed interpretation of the
gameplay, Czauderna identifies the learning processes and outcomes. He rec-
ognizes the potential of the game "as applied political philosophy which
might be utilized in political education."[180] As a result, he recommends the
game for use in upper secondary school.

This exemplary analysis of a single game is followed by an exploration
of the full spectrum of utopian and dystopian games. In "The Concept of
Utopia in Digital Games," Gerald Farca presents a comprehensive typology
addressing the expression and design of the utopian impulse in digital
games.[181] As the central effect of playing with the future, he recognizes a
particular form of "regenerative play" which allows players to "see beyond
the inoculating powers of the status quo, differentiate societal issues, and ex-
plore potential solutions to these through play."[182]

In "'Everything is true; nothing is permitted.' Utopia, Religion, and Con-
spiracy in ASSASSIN'S CREED,"[183] Lars de Wildt traces how a central change
in cultural perception has inscribed itself into Ubisoft's popular game fran-
chise: the transition from modern paranoia, which places the enemy outside
one's own society, to postmodern paranoia, which suspects the enemy inside
society. By blurring the boundaries between the two factions in the game, the
Assassins and the Templars, the binary distinction between utopia and dys-
topia gradually dissolves as well. The "straightforwardness of utopian pro-
jects"[184] is challenged and "the 'not-place' of Utopia is increasingly mapped
over every-place, to be found all around us, if only we learn to unveil its
conspiratorial hiddenness."[185]

Tonguc Ibrahim Sezen's "Beyond the Holonovel. The Holographic In-
teractive Digital Entertainment Utopia of STAR TREK,"[186] concludes the first
part of the anthology by addressing a central utopian ideal for the future of

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180 Ibid., p. 69.

181 In this volume, pp. 99-147.

182 Ibid., p. 103.

183 In this volume, pp. 149-185.

184 Ibid., p. 179.

185 Ibid., p. 177.

186 In this volume, pp. 187-207.

media in digital culture: the holodeck. This fictitious entertainment medium has influenced—and continues to influence—science fiction writers, filmmakers, and game designers as well as inventors, scientists, and scholars. The paper examines its double evolution: the development of the vision of a holodeck since the 1960s and the development of the holodeck within the many TV episodes and feature films of STAR TREK. On the one hand, the various 'fictional' and 'non-fictional' applications of the holodeck are quantitatively assessed and analyzed, with an emphasis on the genre of the "holonovel." On the other hand, the author discusses the cultural connotations of the holodeck and its "prominent role in academic discussions [...] as a utopia for interactive digital entertainment,"[187] in particular the impact on media and game studies and the scholarly debate about the future of narration.

The second part, "Utopias of Digital Games," starts with an assessment of the problematic working conditions within the games industry as well as the heteronormative, neoliberal and meritocratic value system of many popular games. In "Feminist Interventions for Better Futures of Digital Games"[188], Alison Harvey confronts these "dark realities."[189] Her interim verdict "Games are Dystopias"[190] is supposed to serve as a wake-up call. Stressing that "feminist game studies is premised on a utopian methodology, driven by the desire to transform inequitable systems for better futures for all,"[191] she promotes cultural criticism and political action playing together to bring about urgently needed changes in the industry as well as gaming culture.

The relation between work and digital play is also the starting point for Anne Dippel's "Ludopian Visions. On the Speculative Potential of Games in Times of Algorithmic Work and Play."[192] Based on Walter Benjamin's concept of the "Spiel" as an 'ur-phenomenon' of artistic creation, Dippel explores the ludopian vision "whether computers and computer games may

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187 Ibid., p. 194.

188 In this volume, pp. 211-233.

189 Ibid., p. 224.

190 Ibid., p. 214.

191 Ibid., p. 224.

192 In this volume, pp. 235-252.

open up spaces of possibility to envision utopian societies."[193] The discussion of possible interrelationships between ideologies and the architecture of software and workspaces leads to the realization that games offer "spaces to rethink the society" and that this turn from mere representation to reflectivity "opens a gate to possible worlds and utopias."[194]

Taking the contentious effectiveness of so-called Serious Games or Persuasive Games as a starting point, Hartmut Koenitz, in "Playful Utopias—Sandboxes for the Future," comes to a comparable understanding of games "as vessels for utopias."[195] Many current social problems are extremely complex, from the radicalization of the political climate to the public debates on climate change, and traditional narrative media have obvious problems to represent these multifaceted discourses adequately. Games, however, as an interactive medium of simulation and narration seem particularly suited to make it possible to experience and reflect our current challenges in their complexity. Koenitz' analysis leads to the proposal of "three concrete ideas for utopian sandboxes."[196]

Utopian discourses surrounding the products of one of the world's most famous toy manufacturers are the focus of Hanns Christian Schmidt's contribution. In "Building Utopia, Brick by Brick? Selling Subversiveness in LEGO DIMENSIONS,"[197] he investigates what happens when analog play turns digital. Physical Lego bricks allow children "to construct their very own spaces of the imagination: places that were literally non-existent before—and are therefore 'utopian' (no-places) in the original sense of the word."[198] In the digital realm, however, the company is not granting its players the ability to build an actual digital utopia. Instead, Lego is selling a remix of different popular entertainment properties, thereby creating a deconstructive playfulness. As a consequence, Schmidt concludes, "LEGO DIMENSIONS becomes a sort of super-structure […] that modifies and preserves […] older games within Lego's own specific language of form."[199]

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193 Ibid., p. 235.

194 Ibid., p. 249.

195 In this volume, pp. 253-265, here 261.

196 Ibid., p. 262.

197 In this volume, pp. 267-283.

198 Ibid., p. 267.

199 Ibid., p. 278.

Another popular variant of remediation is 'modding,' i.e., the adaptation or extension of the content and structures of digital games by individual users or teams of hobby programmers. In "'We have won this battle ;)' Utopian Practices in Video Games,"[200] media artist Thomas Hawranke explores this practice both theoretically and artistically. Using the example of two mod projects—the exchange of male and female characters, so-called gender-swapping, and a human-animal swap, in which chimpanzees replace human passers-by in the game world—, Hawranke demonstrates the subversive and critical function of modding. The changeability of games, he declares, constitutes their utopian potential. Like reality, games offer two categorically different options for action. On the one hand, the execution of expected behavior, which means in games: what was implicitly intended by the designers. On the other hand, the discovery of potentially feasible actions, utopian possibilities which are unexpected and unplanned and have yet to be realized.

"The Utopia of Getting Over It" concludes the anthology.[201] On the basis of Jesper Juul's "paradox of failure"— that we avoid failure in everyday life but like to play games in which we fail again and again—, Benjamin Beil reflects on the appeal of the game GETTING OVER IT WITH BENNETT FODDY. Its interface and mechanics are not 'fair,' so most players keep on failing, and the unsatisfactory ending does not offer any rewards. Still, the game attracts players. To understand this fact, Beil refers to Bernard Suits' idea that in a utopian society which has satisfied all basic needs, play is all that remains to fight boredom. Players of GETTING OVER IT, Beil claims, resemble the hero of Albert Camus' "Myth of Sisyphus": a modern everyman trapped in a situation of failure and futility who is nevertheless happy. "Playing GETTING OVER IT is not a Utopia, but it is a remarkably consistent utopian practice in regard to its inefficiency and unnecessariness. It is just a little utopian game in an (as it seems) increasingly dystopian world […]."[202]

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200 In this volume, pp. 285-313.
201 In this volume, pp. 315-325.
202 Ibid., p. 324.

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