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Humanists in Society 5.0: The Need for an Interdisciplinary Approach in Building a Super Smart Society

- Practice Track -

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NOTE: The views and opinions expressed in this paper are our own and not necessarily those of our current or previous employers.

Abstract

This paper shows multiple dichotomies between the classical ideal of *humanitas* and the initial concept of Society 5.0 in the areas of data, diversity, sustainability, and acceleration. It argues that in order to overcome these dichotomies it is required to include humanists in the task of designing solutions to ensure that Society 5.0 will become not only super smart but also worth living in.

1 Introduction

Inhumanitas omni aetate molesta est (Inhumanity is harmful in every age)
Marcus Tullius Cicero

Humanists in business are still exotic. However, their background and critical thinking will be key in ensuring that the emerging "radical technologies" (Adam Greenfield) of Industry 4.0 out of which a new omni-connected "Society 5.0" arises will be used in such a way that ethical standards are safeguarded.

Using examples from various industries, this paper aims at portraying in multiple areas the apparent dichotomy between humanistic values and emerging trends of Society 5.0, while also suggesting ways to overcome it.

The building of multidisciplinary teams that include humanists is seen as a major criterium to successfully design a Society 5.0 that still is human despite its digital components.

2 Humanism and Society 5.0 – Definitions and Context

Humanism is a complex concept and can be interpreted in multiple ways or divided into multiple schools. In the context of this paper the classical definition of humanism as a worldview based on Cicero's ideal of *humanitas* from 1st Century B.C. is applied:

> *Humanitas meant the development of human virtue, in all its forms, to its fullest extent. The term thus implied not only such qualities as are associated with the modern word humanity—understanding, benevolence, compassion, mercy—but also such more assertive characteristics as fortitude, judgment, prudence, eloquence, and even love of honour. Consequently, the possessor of humanitas could not be merely a sedentary and isolated philosopher or man of letters but was of necessity a participant in active life. Just as action without insight was held to be aimless and barbaric, insight without action was rejected as barren and imperfect. Humanitas called for a fine balance of action and contemplation, a balance born not of compromise but of complementarity.*
> (Grudin 2020)

Following this definition, Cicero sees the "liberal arts" (or "the humanities") as the fields of study that deal with humanistic topics. The humanities include the study of language, literature, philosophy, arts and history. Independent of the concrete field of study, a humanist in the classical sense is supposed to think and act based on the concept of *humanitas.* In the traditional sense, *humanitas* was also concerned with exercising power over others in such a way that the comfort, needs and safety of others were considered.

In comparison to Humanism, Society 5.0 is a very recent concept. Despite this, it already also has differing definitions. We focus on the classical one (2016) from the Japanese government that has coined the phrase "Society 5.0" to describe its program of vast digital societal transformation:

> *[…] a society where we can resolve various social challenges by incorporating the innovations of the fourth industrial revolution (e.g. IoT, big data, artificial intelligence (AI), robot, and the sharing economy) into every industry and social life. By doing so the society of the future will be one in which new values and services are created continuously, making people 's lives more conformable and sustainable.*
> (JapGov 2022)

Society 5.0 in this sense can be understood as a rather radical upgrade to the German concept of Industry 4.0. where human and non-human members co-exist alongside (Gladden 2019). While Industry 4.0 strives to transform and optimize business processes with the help of new technologies to achieve higher economic competitiveness, Society 5.0 clearly acknowledges what is an implicit consequence of Industry 4.0: New technologies will not only change business, but have the potential to drastically change the life, thinking, and feeling of all people. Streamlining this change into a societal experience, the concept of Society 5.0 aims at using new technology not only to increase competitiveness but also to tackle multiple societal issues. Target is to make society more sustainable and create new values, creating nothing less than a "super smart society" (Japan Business Federation 2016). Major changes are foreseen in the areas of Healthcare / Care of the Elderly (usage of AI and robots), Mobility (autonomous driving, drones), Infrastructure Maintenance (sensors, AI, robots) and Fintech (blockchain). Building on the Japanese concept, the European Commission vision of Industry 5.0 and Society 5.0 combines economic development and new technologies for the benefit and convenience of each citizen. (European Commission 2021, European Commission 2022).

The Japanese definition (as well as European Commission's) suspiciously leaves out a more detailed definition of which will be the new values continuously created. Will these values be compatible with the values of *humanitas*? When will the humanist need to act and interfere, faced with the promises of a new society?

3 Possible Dichotomies between Humanism and Society 5.0

In mainstream opinion, humanists seem to be seen as an anachronistic tribe practicing studies that are outdated and non-commercializable. Humanities and Science are seen as opposites, with the only advantage of humanities being that they are easier to get a degree in. At least, this is implied by some of Google's "People also ask" suggestions to the search query "should I study humanities":

Is it worth to study the humanities?
Are humanities dying?
What are the most useless degrees?
Is humanities easier than science?

What can be sensed here is the a prori belief that humanities and science are areas that are almost opposed to each other and have few touchpoints. The simplified view is that humanists are the past, while technologists and scientists are the future. If the future is Society 5.0, then will there be any place for humanists in it?

To build the Japanese version of Society 5.0, humanists seem not to be needed among the builders. The needed skill is rather IT literacy, and

> *[a] pressing issue is securing and fostering human resources for cyber security, data science and international standardization which are considered to be essential to realize new economy and society*.
> (Japan Business Federation 2016)

Not so surprisingly, at a first view, multiple promises of Society 5.0 seem in conflict with humanistic ideals.

3.1 Data Density & Omniconnectivity

IoT, self-learning robots and AI, blockchain, virtual reality: All technologies leveraged to build a digital super smart society have one thing in common: They heavily depend on data in order to function.

The deal that every consumer today (and every citizen of Society 5.0 tomorrow) will need to accept is to give away personal data in order to obtain increased comfort of living. In a society where IoT is omnipresent, there are concerns on what happens to the data that is gathered, and what data should be gathered at all. Problems for a humanist arise if

a) the transparency on who will use which data for which aim is limited
b) Data is used to create inequality or to suppress opposition to power
c) there is no personal choice to give away data anymore as a normal life would not be possible if data is not shared

Examples from our daily lives for each of the above points can be found easily:

Despite GDPR and its non-European equivalents it seems that the majority of consumers still have issues to understand what can be done with their data and often consent to conditions they have not read (Human & Cech, 2020). Instead of blaming human stupidity, the question should also be allowed if companies are investing enough in user-friendly consent forms, or rather silently profit from the fact that a long and complicated consent process will result in users consenting to full usage of their data as this is the easiest option. With the advent of IoT, the whole process of consenting to data usage will become even more complicated. With sensors everywhere, how can you consent that your stay in a gym is tracked while your stay in the fastfood restaurant next door should not be?

Lack of transparency aside, data can also be used to "rate" people, thereby creating inequalities. As a producer of wearable fitness trackers, do I provide my data to health insurers? The advantage might be that your insurer can provide personalized advice on health improvement. The backside might be that the insurer will adjust its rates based on the performance of its customers. In its "Social Credit System", China is already using data-based ranking of its citizens beyond pure health measures (Mac Sithigh & Siems 2019).

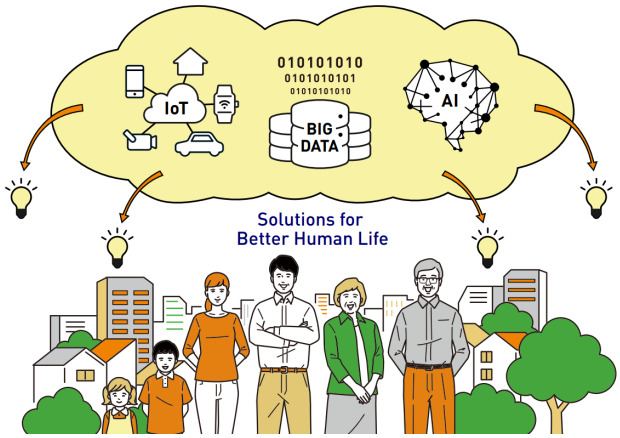
Another example is the usage of sensors in public space. Such smart sensors can foresee large gatherings of people. This could be used to adjust frequency of public transport to ensure everyone gets to a concert on time. It could also be used to mobilize police in time to arrest peaceful protesters.

A final issue with the concept of omniconnectivity is the fact that if this concept is fully implemented then there are no alternatives left. What about people who do not want to be connected? If basic activities like buying food require the consent of sharing your data (e.g., if only supermarkets exist where payment is handled via facial recognition), does it mean that the consequence of not sharing data will be starvation?

The ultimate threat would be the dialectic switch in which instead of us using the data, the data is using us. The result would be a "data-driven" existence with data controlling our daily lives and us unconsciously adapting our behavior to be more efficient and data-pleasing. Data would therefore become something like a Freudian "Über-Ich" which we are conditioned to obey. The quantifiable side would take over the qualitative side of our existence, and everything would be controllable, making the "uncontrollability of the world", which Hartmut Rosa (Rosa 2020) sees as the only state in which we truly experience the world, extinct.

To summarize, big data and IoT do not seem naturally aligned with the humanistic values of prudence and judgement.

3.2 Conformity versus Individualism



The above picture from the official Guide to Society 5.0 issued by the Japanese government (JapGov 2022) involuntarily points out some issues in the areas of smart learning and algorithms. The image depicts what seems to be a Japanese family consisting of grandparents, parents, and two children in front of an urban background. Hovering above them is a cloud of their data that enables and feeds IoT and Artificial Intelligence. If robots and IoT behave based on data obtained from the people represented on the picture, how diverse will be the new society that they are creating?

AI and robots that evolve using machine learning are dependent on the data they learn from, and this data or the algorithms that structure it might be biased or built on limited samples.

The same guide from which the picture is taken states that the
[…] society of the future will be one in which new values and services are created continuously, making people 's lives more conformable and sustainable.
(JapGov 2022)

The usage of the word "conformable" (and even if it was a typo and should read "comfortable" we would see it is a Freudian slip) is raising a red flag, especially when taken out of the specific sociocultural context of Japan and extended to other societies. Should conformity really be a trait of a super smart society? Aren't "super smart" and "conformist" rather antonyms? The danger of using technology to marginalize and exclude minorities and outsider views seems very real here.

Examples can be easily thought of. Studies have shown how already today algorithms that decide e.g. upon education or loans discriminate non-white ethnical groups or women (O'Neil 2017). The risk of using proximity bias when creating algorithms can result in an unwanted global conformity of wants and needs and lead to cultural data-colonialism. Will California-designed artificial intelligence respect the sociocultural context of global-south consumers, or will it "californicate" them, undermining all D&I initiatives of global corporations?

AI might thus impose a new conformity that could reduce creativity and individualism. Take the example of language: AI "learning" a language is known to have issues in detecting irony, sarcasm, or other nuances. But if bots and robots stop using irony and the next generation of humans will be growing up among bots, then will the next generation of humans be able to understand and use ironic figures of

speech? Again, one can see the risk of a dialectic switch: Instead of robots becoming more humanized, humans may become more robotic.

Will the humanistic values of compassion, mercy, or eloquence have a sufficient place in Society 5.0?

3.3 Growth & Boundaries

A virtual society as such seems without boundaries at first sight, with an infinite potential to grow. Taking Moore's law of exponentially growing processing power and the declining cost of IoT sensors as a benchmark, the Internet of Things might soon become the Internet of Everything, while the digitalization of goods and experiences (books, CDs, toys, stores, maybe soon travel) and the usage of a sharing economy for cars, flats, office and machinery means more value can be created with less physical things.

However, this virtual growth also has its boundaries, e.g. rare raw material consumption for servers, microchips, electronic devices and infrastructure to operate the omni-present and constant connectivity and the enormous energy demand that is needed to keep it running at any time, energy that is partially coming from hydro plants or nuclear plants. These real-life externalities of a virtual lifestyle are often ignored, against all humanistic prudence and judgement.

The Japanese concept for Society 5.0 claims to make life more sustainable "*as people are provided with only the products and services in the amounts and at the time needed"* (JapGov 2022). This definition of sustainability as a just-in-time supply of essential goods is however limited as it does not tell anything about the production of these goods or the energy cost of implementing a connected supply chain. A society aiming to be super smart will need to address the topic of sustainability seriously, and it will need to focus on cleaning up the mess created by Industries 3.0 and 4.0 while avoiding to add new mess to it and create more wicked problems on Earth.

3.4 Acceleration & Competition

The lifespan of industry and society versions becomes increasingly short. The evolution from Society 1.0 (a hunter-gatherer-society) to Society 2.0 (agrarian society) and then to 3.0 (industrial society) took centuries, whereas the leap from Society 4.0 (an information society) into Society 5.0 takes a few years. The same situation is to be observed from Industry 1.0 until Industry 4.0 and nowadays the European Commission already talks about Industry 5.0 as a post-Covid vision for Europe that is responsible at the value chain / ecosystem level and focuses on regenerative economics, away from free market ideal of the Chicago School of Economics. (European Commission 2021) (European Commission 2022)

The increased speed has brought disorientation and failure to many small, medium and even large companies in multiple industries because they were unable to compete with innovative, quasi-monopolistic market leaders. Whole industries and professions are in danger of collapse or radical disruption: What will truck drivers do when self-driving cars become the norm? Will teachers be replaced by robots soon? The Japanese case for AI is strongly dependent on the sociocultural context of a highly skilled, ageing society with very limited immigration, aiming to replace low-paid manual jobs with AI. But what about societies with a multitude of young people with lower education, depending on manual work to earn a living? Looking at the globe, such societies are in the majority.

Are humans really built to cope with that much speed of radical transformation, or will the vulnerable be left behind? Are the humanistic values of benevolence and compassion respected?

4 Potential Solutions to Overcome Dichotomies

What can be the solution to the potential issues described above? One thing seems sure: Escape from Society 5.0 is not an option, as the underlying technologies have already started to shape our daily lives and there is no way back into a pre-digital society. In any case it is more than doubtful if such a way back would increase human happiness, as the nostalgia for a pre-digital world seems to idealize the past while forgetting all the comfort that has been achieved by digitalization. As the coming of Society 5.0 cannot be stopped the task ahead of us is to keep a digitalized world human. The following points can help to inject humanistic values into Society 5.0. All of them are still emerging with vibrant discussions around them, so only a short overview on each of them will be given.

4.1 Data Democratization

As opposed to the threat of data colonialism (a chosen few extracting data from many and profiting from it), the concept of data democratization will need to be enforced in Society 5.0, providing clear legal boundaries when it comes to sharing data and ownership of one's own data with transparency on its usage. Legal frameworks like GDPR can only be a beginning here. Education, consent interfaces with a more user-friendly design and the default choice to not consent to full data sharing, and technology like blockchain could all play a role in avoiding data driving people.

Humanists like philosophers focused on ethics need to be part of discussions on data modelling.

4.2 Diversify AI

A larger transparency with regards to algorithms needs to be enforced to ensure that AI will be diversified in its expressions, moving away from a male, western-centric view.

As long as the vast majority of AI developers are males educated at western universities it will be hard to achieve diversity. But at least this situation has recently been recognized as being an issue and has drawn attention from e.g. the World Economic Forum (Khan 2022).

The set-up of machine learning curricula needs to take place in joint discussion between developers and humanists from social sciences, gender studies and cultural studies (Schrader & Martens, 2018).

4.3 Recognize Boundaries

The idea of growth as main indicator for well-being needs to be replaced by alternative, often circular models like e.g. Raworth's Doughnut Economy (Raworth 2017) or indices that include not only growth but also other factors like sustainability or education as KPI (Pilling 2019). Externalities of virtual progress need to be measured and taken into account when making business decisions.

Non-mainstream economists should work with Tech and governments to balance digital growth against sustainability. As "sustainability" and "circular economy" have become buzzwords, extreme caution will need to be applied to identify attempts of greenwashing or "circularwashing".

4.4 Slow Down

Deceleration seems to be a need for humanity in order not to lose resonance with the world (Rosa 2019). Instead of pushing for total digitalization, it seems sensible to pause and first think about impact,

benefits and mitigation of risks. Consider the elderly or less educated when digitalizing activities of everyday life – who hasn't seen older people struggling with supermarket self-checkouts? Spend time to understand how human interaction works before coming with half-baked automations – who hasn't experienced frustration trying to talk to an automated service hotline? Think of solutions for the ones to be made redundant before automating their jobs and consider redistribution of wealth.

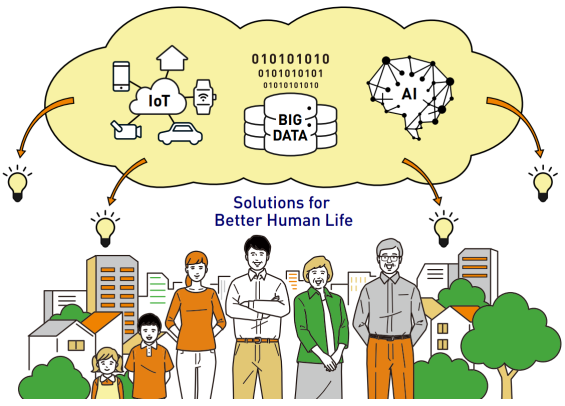
And do not underestimate the beauty of non-digital interactions – the smile of a human cashier at a supermarket, the smell of oranges at a street market or the touch and feel of a leather shoe bought in a brick-and-mortar store.

In multiple areas of life, slow movements have in recent years gained popularity – from slow food over slow fashion to slow living. Maybe "Slow Digitalization"© and "Slow Business"© could become trends of the not-so-far future.

Philosophers need to be involved in discussions on scope and speed of digitalizing society.

5 Conclusion

Society 5.0 is a project that evokes both awe and angst. While there are multiple opportunities to create a better life with the help of technology, there is also the danger of a dialectic process similar to the one described by Adorno and Horkheimer in "Dialectic of Enlightenment" (Adorno & Horkheimer 1947): The rational, open and data-driven society that empowers people to be more creative and educated in the worst-case scenario risks to evolve into a prejudiced, intransparent and oppressive data dictatorship that forces people into conformity. Needs, wants, beliefs and identity are being shaped by a holy trinity of data, AI and IoT. Up to every reader to decide if the iconographic similarities between the below images are purely coincidental.



Are these thoughts crazy, speculative, and non-scientific as they cannot be proven true via quantitative measures?

Maybe, but we argue that when it comes to planning and realizing Society 5.0, also crazy people - e.g., humanists - need to be part of the discussion (and we wonder if an AI bot would have captured the irony in this sentence).

The measures shown to avoid the "Society 5.0 as data dictatorship" scenario (data democratization, diverse AI, circular models, "slow" movements) all have a humanist angle, and in fact they do not seem crazy but resonate with trends and beliefs that are prominent among Generations Y and Z. In order to realize them, scientists and humanists need to work together.

For this cooperation to be fruitful, several prerequisites need to be in place:

- **Recognize the dichotomy between science and humanities as false:** While in popular opinion, science is seen as opposed to "speculative" humanities by being "true" or quantifiable and verifiable via experiments, scientist-philosophers like Carlo Rovelli stress the point that at the core of each scientific discovery lies uncertainty. Rovelli also emphasizes the historical union between science and humanities (especially philosophy) that has been broken only in the last century. At the same time, humanities (again with a focus on philosophy) without a connection to science are in danger to be irrelevant and detached from life. Both disciplines need each other and should focus on common touchpoints (Rovelli 2016).
- **Understand digitalization in a holistic way:** Digital transformation is not just about tech or industrial progress. Digital transformation is about every aspect of human life, even every aspect of life on Earth as such. Therefore, people from all kinds of academic background should be involved in it.
- **Employers to focus on academic diversity in their teams:** Organizations shaping Society 5.0 need to ensure their workforce is diverse enough to tackle not only the technical, but also the political, legal, psychological, ethical or aesthetical issues of the project. Recruitment should therefore be open to hire from different backgrounds.

At the beginning of our professional careers in typical "business jobs" 15 years ago we were both regarded as exotic: What does a philologist do in Procurement? What does a historian do in IT Consulting? Luckily, since then much has changed at our employers and academic diversity has become a reality. A new breed of tech- and business-savvy humanists has emerged that can help companies to stay centered on the human experience, independent on which business they are in.

Still, we are aware of being among the lucky few as many employers still do not even consider humanists for many positions (some of them using AI tools to scan their CVs and sending automated "After careful consideration we regret to inform you…" emails based on the degree detected – another example of biased algorithms).

Society 5.0 is coming, but there is still time to shape it in such a way that it will become a society in which people want to live in. A digitalized world can still stay human, but only if humanists follow Cicero's advice to get out of their ivory towers and act, and if governments and corporations welcome them as equal partners at the discussion table.

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