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AI & Democracy, and The Importance of Asking the Right Questions

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Abstract

Democracy is widely praised as a great achievement of humanity. However, in recent years there has been an increasing amount of concern that its functioning across the world may be eroding. In response, efforts to combat such change are emerging. Considering the pervasiveness of technology and its increasing capabilities, it is no surprise that there has been much focus on the use of artificial intelligence (AI) to this end. Questions as to how AI can be best utilized to extend the reach of democracy to currently non-democratic countries, how the involvement in the democratic process of certain demographic groups (e.g. ethnic minorities, women, and young people) can be increased, etc. are frequent topics of discussion. In this article, I would like not merely to question whether this is desirable but rather argue that we should be trying to envisage ways of using AI for the exact opposite purpose: that of replacing democratic systems with better alternatives.

History

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1. Introduction

The rapidly increasing ubiquity of technology, and AI, in so-called ordinary people's lives has prompted much interest in questions focused on the impact of these on democracy. All but invariably, the questions discussed in published literature boil down to the potential threats faced by democratic countries, the democracy itself [19], and the means of adapting democracy in a manner which would make it more resilient to such challenges [9]. What is really worrying in this debate, which takes place both in academic circles as well as popular media, are the presumptions, not in the least hidden, when such questions are asked. Namely, it is taken as primafacie that democracy is desirable [31]. Herein I argue that it is not and that rather than asking how AI should be used to preserve democracy, we should be focusing how AI could be used to supplant democracy in a manner which is broadly supported and peaceful, with an alternative political system which is both ethically principled and practically feasible. I understand that this may sound like a controversial proposal and having discussed it numerous times with individuals with different backgrounds, I kindly ask the reader to consider the content herein as it is stated rather than projecting a priori expectation onto my word. As I suggest already in the title of the article, the proposal should be seen as a propaedeutic, and to this end I have tried to make a compromise between breadth and depth for the sake of clarity.

2. Challenges

It is a truth nearly universally observed that when challenging democracy, one is responded to by a reference to a quote attributed to Churchill:

"Democracy is the worst form of government, except for all the others."

Ironically, this short retort illustrates rather well some of the key problems with modern democracies. Firstly, it is a needless¹ appeal to authority, a highly morally dubious one that too² This reflects both the intellectual superficiality and inertia of the general public. Secondly, the quote itself is incorrect, and the correct statement instead reads:

"Indeed it has been said that democracy is the worst form of Government except for all those other forms that have been tried from time to time. . ."

Notice that Churchill does not express his own views here, nor is the claim as strong (merely referring to the forms of government which have been tried, rather than universally all others). Further to the aforementioned superficiality of intellectual scrutiny, here we see an example of confirmation bias which discourages healthy skepticism and so-called fact-checking when a claim conforms to preformed or otherwise preferred opinions. This is arguably a particularly serious problem in an era of rapid mass communication, and the overall information load.

While the idea that democracy is a poorly constituted system may be considered provocative in the present-day

¹ There are perfectly valid appeals to authority, e.g. as somebody who has little knowledge about cars, I defer much of my decision-making in connection to my car, to those whom in my best judgement I consider authorities, say a local car mechanic

² It is worth pre-empting any attempts at vindicating Churchill's attitude by a reference to 'different times' by noting that he was severely criticized for his abhorrent views by more ethically minded individuals at the time.

zeitgeist, it is far from new. Indeed, nearly two and a half millennia ago, Aristotle discussed democracy with impressive clarity and thoroughness, describing it as one of the degenerate forms of government. His dislike of democracy is illustrated well by the discussion in The Politics of which is worse, democracy or tyranny.

Aristotle's arguments ring true today probably more than ever. In particular, and with a reference to the aforementioned superficiality, lack of education, and intellectual inertia of the public, Aristotle quite correctly predicted what can be now very clearly seen in practice: that nominal democracies quickly become de facto oligarchies whereby a powerful few control the opinions of many. Given that the human nature has not changed since, but that the volume of information and the complexity of issues of relevance have vastly increased, modern technology makes this control that much more potent. The incredible amounts of money spent on political advertising and campaigning provide strong evidence of this. Would those who spend this money really be doing so were it not conducive to their goals?

2.1 Perceived Legitimacy

As just noted, democracies as constituted in modern times, quickly become de facto oligarchies. The distal power of oligarchs is exercised by means of proxy layers. The first of these features in the form of demagogues – public figures who appeal to the broad public, usually both by personal charisma and by superficially attractive messages. Most proximally though, what one observes is the tyranny of majority (indeed, Diogenes observed: "The mob is the mother of tyrants."). This is extremely worrying as the sheer power of numbers gives this dominant group a genuine feel of legitimacy, often

cynically but correctly described as the counting of heads without taking into account what is inside them [27].

2.2 Vanity and Jobs at Stake

It has been observed over long periods of time and across cultures that tyrants relish and demand flattery [23, 12]. And it is a rare tyrant more demanding of it than the mass. Quite literally not a day passes without an exasperating call from one or another that 'all that we [the public] want is for politicians to tell us the truth' [28]; yet only about 13-14% believe that they do [21]. Indeed, much of work on the use of AI and data analysis for perceived social benefit focuses precisely on this - on so-called 'fact-checking'. Putting aside that many of the questions that the public seeks answers to are complex and cannot be expressed meaningfully in a simple sentence, requiring nuisance and often containing extra-scientific, philosophical elements, one major reason for the scarcity of truthfulness lies in that being a democratically elected politician is now seen as a job or a career, as opposed to a social and public duty. This fundamentally changes the nature of relationship between the governing and the governed. One consequence is that politicians are invariably fighting for their job and telling the public the somewhat uncomfortable truth (such as that they are not sufficiently educated to make or judge certain complex decisions) would quickly bring one's career to an end [40, 14, 2]3.

2.3 Inertia or Devils Those you do and those you do not know

After the numerous fundamental flaws with democratic governance are exposed, the usual attempt at halting further engagement with the topic comes in the form of the claim that there is no better alternative. When this view is challenged, the inadequacy of public education again,

³ For specific examples see: https://www.dailymail.co.uk/debate/article-7084113/STEPHEN-GLOVER-politician-tells-whopper-taken-court.html, https://www.mailtimes.com.au/story/6056940/the-greens-field-mallee- candidate-in-federal-election/, https://www.derbytelegraph.co.uk/news/extinction-rebellion-protesters-stage-big-3341517

becomes apparent: as the alternatives, virtually without exception tyranny (dictatorship) and communism are the only alternatives that people are aware of. The latter is arguably not even a valid alternative, in the sense that it is not necessarily a political system but more so a way of organizing economy, ownership, etc, (succinctly and somewhat simplistically put, given the tangential nature of the issue and the manuscript length constraints) - for example, there is no fundamental reason why a communist government could not be democratically elected [10]. But what is clear is the woeful lack of awareness of the rich body of work on political theory. Few are aware of even the basic concepts, such those of duocracy, elected monarchy, and many others [4], let alone of the rich milieu of mixed constitutions which can be weaved by having different decision-making systems interlocked in a coherent manner. Indeed, while this discussion is outside the scope of the present article, it is a kind of a mixed constitution that we should be seeking to replace modern democracies with one which uses democratic decision-making in one realm, aristocratic bodies (in the original sense of the word, rather than the modern pejorative one) in another, possibly random polling constituted bodies in yet another, etc.

This ignorance of political theory is in part caused by and in part complemented by ignorance of history. The general public is virtually entirely unaware of why and how the current electoral processes came to be (e.g. the Electoral College system in the USA, or the extent of suffrage in the UK). To give but one of a plethora of possible examples, few people are aware of the major changes that the British democracy has undergone even in its recent history not the least of which is the expansion of suffrage rights (save for women's rights, which are discussed frequently), with the electorate size of 5.7 million in 1885 (cc. 16% of the population) to 45.8 million in 2018 (cc. 69% of the population).

3. Ube Ire, AI?

The previous discussion of the key fundamental flaws of present-day democracies, as well as the reasons why these flaws remain largely unnoticed or attributed to practical (rather than inherent) factors, shines a light on the steps which need to be taken to pave a way towards alternative political systems. An outline of some which I propose is presented next, in the rough order in which they need to be implemented.

3.1 Person's Value vs Political Role

As intimated in the previous section, an appealing aspect democracy lies in the perceived equality between people 'at the ballot box'. Thus, any deviation from this state inherently creates inequality amongst those previously seen as equal, and this is all certain to provoke a vitriolic response in many, seeing it as elitism (the kind of elitism will depend on the criteria used to effect differentiation between individuals). I expect that many (or most) would see this as some individuals being seen as 'better' than others. As the first step towards the liberation from the democracy fetish, it is crucial that this incorrect inference is rebutted credibly and with clarity.

Firstly, let us observe what ought to be a simple fact: the perceived equality does not exist even now even at the ballot box. For example, all elections require the voters to be at least of a certain age (say, in UK general elections, at least 18). This certainly does not mean that children are less valued as individuals. Equally, people with some mental impairments are prohibited from voting, and yet nobody would suggest that they are any less entitled to happiness, the freedom from suffering, etc. More subtly, there is geographic discrimination (n.b. herein I use this word in a non-moralistic, objective sense, and attach no judgement to it). Two individuals on different sides of an international border do not have the right to vote in the other's country's general elections. This seems 'natural' and is accepted by virtually everybody. Yet, how does it make sense that an arbitrary chance of birth, entirely amoral in nature, should affect such differential power (consider the power of a voter in a prosperous country, rich in natural resources, and say, with powerful international presence vs a small and impoverished one, with scarce natural resources and no international power whatsoever)? Moreover, inequality already exists not only in the eligibility to vote but also in the eligibility to be voted in - in the UK for example, only persons aged 18 or over can be candidates in general elections (until 2006

the threshold was 21); in the USA, presidential candidates must be at least 35 (which has remained unchanged since 1787).

All of the above can be the starting points in demonstrating that differential roles in the political process do not imply differential appreciation of individuals, their rights as sentient beings, etc. The usual cliche' used to describe democratic rule is 'rule by the people'. Appealing as this appears to be, it is actually entirely beside the point – the aim should be 'rule for the people', or what Aristotle termed polity.

3.2 Knowledge, Education, and Complexity of Politics

That the equality of individuals with respect to their right to pursue happiness, etc. does not necessitate equality in terms of their political roles is the first step towards the goal. Nevertheless, the argument put forward thus far not does imply that political inequality is desirable, and therein lies the next challenge. The focus here has to be on the complexity that underlies effective and principled political decision-making. This balancing act requires a strong background in history, geography, statistics, natural science, economics, and a plethora of other challenging subjects. Yet, most people lack sufficient knowledge in any one of these [34]; indeed, some prove to be extremely challenging even to highly educated professionals [24]. This makes policy driven electoral choices, purportedly favoured by voters in democratic societies, an unwise proposition. There are likely to be two main factors at play here, which have been and continue to be studied extensively: a person's perception of own ignorance (i.e. lack of knowledge) in a certain domain and the associated perception of risk [11]. Put simply, in the context of interest in this paper, the voter may be underestimating their ignorance of, for example, geography, or they may be failing to appreciate the significance of this ignorance in their political decisions. After all, nobody is suggesting a popular vote on, say, the approval of drugs for therapeutic use - there is an understanding that few are qualified to make such decisions, despite the

consequences 'affecting us all' as democratic demagogues often say. The issue is simply that of competence and it must separate from any associations with one's worth, as discussed previously.

One should not be under the illusion that the problem succinctly expressed by section's title can be appreciably remedied though more or better education – a less radical means than that advocated herein – a panacea like solution frequently espoused by the political and intellectual classes alike. What is wanting here is not mere knowledge. Knowledge of procedural or factual matters - veritism, in short [18] – even if reasonably comprehensive, does not suffice in the context of modern political decision-making where the complexity of challenges encountered requires extensive synthetic judgements. Rather, what is is necessary is understanding [33]. Admirable in spirit as it is when proposed by honest advocates, the idea that the general population cane be expected to develop a level of understanding of the intellectual realms important for meaningful participation in democracy, is utterly unrealistic. The idea's phantasmic nature already becomes apparent after a simple consideration of the cognitive abilities of the majority, to speak nothing of a myriad of additional practical challenges, including the cost that implementing such education would entail, the impact on the economy effected by universally prolonged studies, etc.

3.3 The Cult of Science

Given that my aim is not to provoke controversy for the sake of it but rather to highlight important issues that AI can help with, it has been my aim to constrain myself to a single blasphemy only – that of rejecting democracy. Nevertheless, I could not avoid touching upon another, without which the complexity of political decision-making would be severely incomplete. As the section title reads, it concerns what rightly can be called the cult of science. This may be strange to read following the discussion thus far, so I must elaborate.

Over the last century or so, the West has witnessed a remarkable change in religiosity [17]. To quote Franck and Iannaccone [17], whose findings are representative of the

body of work in this area:

"...our statistical tests offer no support for traditional theories of secularization (which link decline to changes in income, education, industrialization, urbanization, and family life). Nor can we attribute much of the observed decline to growth in the welfare state. But increased school spending by governments does reduce church attendance, and this effect is not the result of greater educational attainment. In shaping the content of schooling, governments may strongly influence long-run religious trends."

A consequence of this decline (which I do not regret, lest the reader infer otherwise) has effected a vastly disproportionate emphasis and reliance on physicalism, with extra-scientific philosophical topics being all but entirely marginalized. This is not merely a blue sky intellectual objection (or should I say a philosophical one?) - political consequences are serious and frequent. Science cannot, by its very nature, address questions such as how compromises between two lives can be made, how a trade-off between the cost of building materials and the safety of future residents should be made, and a plethora of others encountered each day [35]. Not only important, these are issues which are difficult to address in a systematic and rigorous way, which requires years of training - again, training which few undergo to virtually any degree. Thus, it is imperative to make efforts to explain the limitations of the scientific method [15], promote philosophy as a useful – nae, necessary [6] – tool in politics [29], and as before highlight that the general public cannot be expected to be sufficiently qualified in this domain [22].

4. The Role of AI

Having considered in the previous sections the reasons why a transition from democratic (or at least nominally so, as I argued) to alternative forms of government is desirable, as well as what the key obstacles to making this change are, we are in a good position to discuss what this means in the context of AI, i.e. both how and if AI can contribute to making the aforementioned change successful and lasting, and what (if any) changes to the manner AI is governed may be needed. Thus, here I would

like to begin by considering the two questions separately: (i) the role of AI in making the transition from democracy, and (ii) the place of AI following the transition.

4.1 Moving Away from Democracy

In the previous section, we saw that the nearly universal acceptance of democracy and the outright rejection of even the mere consideration of alternatives, is rooted partly in a lack of knowledge but perhaps even more so in value based perceptions (e.g. the association of one's intrinsic value as a human being, or indeed a sentient being more generally, and the person's role in the political system). Changing these is far from an easy task – often requiring considerable time and demanding patience in a struggle against ad hominem and straw man arguments and I very much doubt that there is anything inherent to AI that could make a fundamental difference to this process. In other words, AI may make the process more convenient, accessible, or engaging, i.e. offer quantitative change, but no qualitatively different, groundbreaking solution to the challenge should be expected from it. The focus should be on leveraging the strengths of AI to shift the so-called 'window of political possibilities' [7]. Indeed, considering that intellectual challenges to democracy are so rare, to the best of my knowledge, the present article is the first one to consider the potential role of AI in transition from democracy. A good illustration of what a taboo this very suggestion is, comes in the form of a principle from the Montre'al Declaration for Responsible AI, entitled "Democratic participation principle" which states that artificial intelligence systems "must be subjected to democratic [my emphasis] scrutiny, debate, and control".

Before I venture any further into the territory, which is doubtlessly speculative, I would like to remind the reader that the main purpose of the present article is to put forward a proposal and an argument as regards the direction of effort in the use of AI in the context of democratic governance, that is, the goals rather than means of achieving these. Considering that my expertise does not lie in the use of AI for knowledge or understanding transfer, I think that there is limited value in my thoughts on the matter. I am confident that there is

a proverbial army of people who can come up with far more innovative and effective ideas in this realm than myself but for the sake of completeness I would like to plant a seed by suggesting a few which readily spring to mind and which may prove useful.

Having said the above, one avenue that comes to mind immediately could be categorized under the broad umbrella of 'gamification' [25]. It is easy to envisage, let us call them games, simulating processes such as political decision-making in differently constituted parliaments with the 'player' working with and against intelligent actors whose values, motives, and behaviours are driven by a learning AI. This could bring into light many of the issues previously discussed, e.g. how different organizational systems constrain power or facilitate consensus, how the distorting effects of selfishness are exhibited in various settings, etc. Alternatively, the same can be done in simulating the impact of different decisions on the social level, with AI used to model the behaviour of the public, which affects and is affected by electoral results, etc. As a caveat, it is important to be aware of potential pitfalls [38] and in particular ensure that the eye is firmly on the actual goal, and not trivialize important matters, turning the end product into mere entertainment.

4.2 AI Within the Alternative System of Government

Unlike in the previous case, when our concern was the role of AI in making a political transition, the discussion of which is entirely absent in the current literature, when it comes to the consideration of AI within a system of government which we desire to maintain and strengthen, we are on a somewhat more familiar territory. While it is true that the literature thus far focuses on the aforementioned goals within the democratic system only, many of the same aims and concerns remain unchanged in alternative systems (at least in those of the kind which I would consider advocating and which I would like to see discussed more widely).

Considering our ever greater reliance on AI and the increasing delegation of decisions which would have traditionally been made by humans, to AI, I would err if I

did not touch upon the possibility of AI being directly involved in our political systems, i.e. of AI itself making some legislative decisions. I trust that at least with this point I am on safe ground when I say that such suggestions should be firmly rejected (that is, as long as we are talking about non-sentient AI; the development of sentient AI, which I would not welcome on ethical grounds, would demand that this question is revisited). As I noted earlier, while there is no doubt that the relevant knowledge, understanding, and reasoning skills, all of which are necessary for meaningful political engagement, are woefully lacking in the general public – and AI already exceeds human capacity in regard to these in many specialist areas [5], and can reasonably expected to do so in many more in future - political decision-making is at every stage intricately interwoven with ethical, value based judgements which cannot even in principle be formalized [1] (in no small part because our belief systems are internally inconsistent; the very simple example of Arrow's impossibility theorem [3] should be enough for one to imagine the actual complexity of making consistent political judgements in the real world).

Having rejected direct involvement in AI, we are in the familiar territory of the kinds of discussion which have been taking place for a while now. Issues such as privacy (including security and data provenance) [20, 26], transparency and Explainability [31, 41], decisional autonomy [16, 26, 37], monopoly over developments in AI [31], legislators' expertize [31], bias [32], and numerous others are hotly debated in academia, industry, legislature, and mainstream and alternative media, and they are not sui generis to democracy. While it is outside the scope of the present article to discuss these issues in detail (and I should note that I do find myself in disagreement, if not with conclusions then with the form of the arguments put forward in many of the papers I cited), their nature in large part transcends the specifics of political governance (again, with an understanding that we are constraining our discussion to the political alternatives of the kind I suggested, rejecting e.g. tyranny, etc.), and thus in an alternative system of governance their role remains largely unaltered from that which they have in democracies.

Take privacy for example, and with it the family of issues which fall within the broad cluster of related

considerations. Our collective desire to protect individuals' right to privacy is first and foremost motivated by what we all but universally feel is a part of our self⁴ [30], and hence something that we deem a universal right (there should never be any doubt that the recognition of this right is a decision, rather than an expression of some objective truth). This principle is not altered with the change of a political governance model within which it exists. At the same time, the ability of individuals to protect their privacy is also important in preventing any sound political system from being perverted (e.g. by compromising individuals' autonomy within the system).

As regards the underpinning principles, many similar remarks to those made about privacy also apply to issues related to autonomy. However, there are some interesting considerations pertaining to the concept of individual autonomy which do emerge as we move away from democratic societies. The reader will recall my objection to the professionalisation of politics from Section 2.2, and the distortion of the decision-making process which it effects. This distortion results from what can be seen as a loss of autonomy – political decisional autonomy is traded off for greater job security, the opportunity to make a difference in future, etc. It is self-evident that this distorting pressure is lessened (I have little doubt that its complete elimination, and that of the variety of sources it can emerge from, is impossible whatever the political structure may be) when legislators are not democratically elected. But even in admissible non-democratic systems of government, the right to autonomy in political decisionmaking on the level of an individual remains of paramount importance. In particular, one should be under no illusion that there is a form of government perfectly resilient to human folly. Therefore, there must remain a legal and orderly mechanism for an extraordinary suspension of the normal governing structures, e.g., by means of spontaneously evoked referenda, similar in nature to

Federal Popular Initiatives in Switzerland [39], initiated by members of the public. For this mechanism to serve its intended purpose, a number of prerequisites for political decision-making autonomy have to be ensured. Amongst these I would include the right to free speech and the right to education⁵, amongst others. The legitimacy of any government must, in one form or another, come from the people that it governs. The reader should not be under the misapprehension that this is not possible in nondemocratic societies; quite in fact, I would consider it a requirement for a system to be admissible to consideration. As in many other instances, the potential of AI both as an ally and an adversary has been recognized. There is, for example, no doubt that AI can be used to improve the quality and reach of education delivery [8]. However, it is the concerns over the capacity of AI to undermine autonomy which largely dominate the debate, both within and without academia [31, 26, 13]. These concerns were made – the reader will not be surprised to hear so at this point - with the mechanistically and unquestioningly taken presumption which I highlighted right at the start of the present article, that the context is that of a democratic political system and that this system is indeed desirable [36]. One of the reasons why AI poses threat in this context stems from its ability to amplify many of the inherent flaws of democracies which I highlighted in Section 2. It is again the case that we are not yet dealing with any sui generis aspects of AI but rather with a change in scale; quantity rather than quality. Take so-called "fake news" for example. It is hardly a new phenomenon - there are plenty of examples of it to be found on ancient Roman Imperial coins, or in history of the Achaemenid Empire, to give just a couple of examples. What AI made possible, of course with the complex facilitatory infrastructure underlying it, is to increase the reach of false information (speed of spread, rate of generation, etc.), while maintaining its specificity and personalization. While misinformation being spread cannot be welcome in any political system, it is particularly

⁴ At the same time, it should be noted that this nearly universal agreement regards the principle in rather vague terms. Defining the term with any precision while maintaining this consensus has proven to be a challenge in practice [37].

⁵ The details pertaining to these are well beyond the scope of the present article. However, for clarity, it is worth making a couple of notes. Firstly, my use of the word 'right' is different in the two prerequisites mention. In the case of free speech, the right is a guarantee against persecution by state but does not imply a guarantee of a platform (or indeed, a lack of legal, social consequences). In contrast, the right to education should, in my opinion, entail more. The weakest interpretation thereof is the right not to be refused education. A stronger understanding of the right would be to understand it as a guarantee of education, whatever one's circumstances. I would argue for the latter – and more, a *requirement* of a certain level of education. Without it, individual autonomy in political decision-making can only be illusory.

damaging in democracies because it targets the primary agents from whom political decision-making starts. And these agents are rather easy to manipulate, for reasons related to education, ability, etc. I outlined in Section 3.

5. Conclusion

The progress made in artificial intelligence technology over the last decade has been nothing short of staggering. Considering that artificial intelligence – its nature and the potential for the good and the sinister – has been a topic of serious discussion since the earliest days of modern computers, it is rather ironic that the aforementioned progress caught many on the back foot. On the one hand, the benefits of AI are difficult to overlook, so it is of little surprise that AI is rapidly finding its use in so many aspects of our lives. Considering its power (already realized or potential), it is equally unsurprising that AI is having effects on our systems of governance, and in this there is possible danger. Hence, a lot has already been said and written about the manner in which artificial intelligence and its developments should be regulated or otherwise directed so as to protect, strengthen, or maintain modern democracies. In the present article I made a radical departure from the published scholarly work. Firstly, I challenged the presumption that democracy is at all desirable and described a number of its serious, fundamental flaws. Hence, I argued that the focus of AI in this realm should rather be to facilitate a transition from modern (nominal) democracies to alternative forms of government which comprise a mixture of democratic and non-democratic elements. I elucidated the key obstacles to this process and identified what the focus points of AI should be so that they can be overcome. Finally, I discussed what role of AI should play both in the aforementioned political transition as well as in a society governed by an acceptable alternative political model of the kind which I argue for.

In closing, as the reader reflects on my arguments, I stress that while my ultimate desire is to have the reader fully convinced of the soundness of my proposals, I would be content with achieving a much more modest goal of making it understood that non-democratic governance can be founded on philanthropic, compassionate, and

humanistic grounds (rather than on selfishness, subjugation, and nihilism), and as such a topic which is not summarily and unthinkingly rejected by emotive cliche' charges of "extremism", "elitism", and the like.

References

- 1. Allen, C., Varner, G., Zinser, J.: Prolegomena to any future artificial moral agent. Journal of Experimental & Theoretical Artificial Intelligence **12**(3), 251–261 (2000)
- 2. Anomaly, J., Winegard, B.: The egalitarian fallacy: Are group differences compatible with political liberalism? Philosophia **48**(2), 433–444 (2020)
- 3. Arrow, K.J.: A difficulty in the concept of social welfare. Journal of political economy 58(4), 328–346 (1950)
- 4. Arrow, K.J.: Social choice and individual values, vol. 12. Yale university press (2012)
- 5. Assael, Y.M., Shillingford, B., Whiteson, S., De Freitas, N.: Lipnet: End-to-end sentence-level lipreading. arXiv preprint arXiv:1611.01599 (2016)
- 6. Barnett, R.: The limits of competence: knowledge, higher education and society. ERIC (1994)
- 7. Beck, G.: The Overton Window. Simon and Schuster (2010)
- 8. Beck, J., Stern, M., Haugsjaa, E.: Applications of ai in education. XRDS: Crossroads, The ACM Magazine for Students **3**(1), 11–15 (1996)
- 9. Boyte, H.C.: John Dewey and citizen politics: How democracy can survive artificial intelligence and the credo of efficiency. Education and Culture **33**(2), 13–47 (2017)
- 10. Bruszt, L., Stark, D.: Remaking the political field in hungary: from the politics of confrontation to the politics of competition. Journal of International Affairs pp. 201–245 (1991)
- 11. Buratti, S., Allwood, C.M.: The effect of knowledge and ignorance assessments on perceived risk. Journal of Risk Research **22**(6), 735–748 (2019)
- 12. Bushnell, R.W.: Tragedies of tyrants: Political thought and theater in the English renaissance. Cornell University Press (2019)
- 13. Calvo, R.A., Peters, D., Vold, K., Ryan, R.M.: Supporting human autonomy in ai systems: A framework for ethical enquiry. In: Ethics of Digital Well-Being, pp. 31–54. Springer (2020)
- 14. Carl, N.: The fallacy of equating the hereditarian hypothesis with racism. Psych 1(1), 262–278 (2019)
- 15. D'Amato, M., Moore, T.R., Baxter, A., Rapone, E., Scott, M., McConnell, M., Nelson, S.: Limits: Essays on the limitations of science and religion (2016)
- 16. Feldstein, S.: How artificial intelligence systems could threaten democracy. The Conversation (2019)
- 17. Franck, R., Iannaccone, L.R.: Religious decline in the 20th century west: Testing alternative explanations. Public Choice **159**(3-4), 385–414 (2014)
- 18. Goldman, A.I.: Reliabilism, veritism, and epistemic consequentialism. Episteme 12(2), 131–143 (2015)
- 19. Helbing, D., Frey, B.S., Gigerenzer, G., Hafen, E., Hagner, M., Hofstetter, Y., Van Den Hoven, J., Zicari, R.V., Zwitter, A.: Will democracy survive big data and artificial intelligence? In: Towards Digital Enlightenment, pp. 73–98. Springer (2019)
- 20. Helbing, D., Frey, B.S., Gigerenzer, G., Hafen, E., Hagner, M., Hofstetter, Y., Van Den Hoven, J., Zicari, R.V., Zwitter, A.: Will democracy survive big data and artificial intelligence? In: Towards digital enlightenment, pp. 73–98. Springer (2019)

- 21. Ipsos MORI: Trust in professions annual survey. Research Study Conducted by Ipsos MORI for The Royal College of Physicians [online: https://www.ipsos.com/sites/default/files/publication/9200-03/sri-trust-in-professions-2009.pdf] (2009)
- 22. Keren, A.: The public understanding of what? laypersons' epistemic needs, the division of cognitive labor, and the demarcation of science. Philosophy of Science **85**(5), 781–792 (2018)
- 23. Landauer, M.: Parrhesia and the demos tyrannos: Frank speech, flattery and accountability in democratic Athens. History of Political Thought **33**(2), 185–208 (2012)
- 24. Leisman, D.E.: What do icu clinicians really need to know about statistics: Time to give up or time to bridge the gap between the evidence and the reader? Critical Care Medicine **46**(12), 2052–2054 (2018)
- 25. Majuri, J., Koivisto, J., Hamari, J.: Gamification of education and learning: A review of empirical literature. In: Proceedings of the 2nd International GamiFIN Conference, GamiFIN 2018. CEUR-WS (2018)
- 26. Manheim, K.M., Kaplan, L.: Artificial intelligence: risks to privacy and democracy (2018)
- 27. McCartney, M.: Our messy divorce from the EU. BMJ 353, i3551 (2016)
- 28. McLellan, C.J., Mullins, C.E., Schumacher Aparicio, D.A., Collins, M.: Promoting sustainability through online platforms (2019)
- 29. Mercer, D.: Why popper can't resolve the debate over global warming: Problems with the uses of philosophy of science in the media and public framing of the science of global warming. Public Understanding of Science 27(2), 139–152 (2018)
- 30. Mumford, L.: Authoritarian and democratic technics. Technology and culture 5(1), 1–8 (1964)
- 31. Nemitz, P.: Constitutional democracy and technology in the age of artificial intelligence. Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences **376**(2133), 20180089 (2018)
- 32. Parikh, R.B., Teeple, S., Navathe, A.S.: Addressing bias in artificial intelligence in health care. JAMA **322**(24), 2377–2378 (2019)
- 33. Pritchard, D.: Knowledge and understanding. In: Virtue epistemology naturalized, pp. 315–327. Springer (2014)
- 34. Sinatra, G.M., Hofer, B.K.: Public understanding of science: Policy and educational implications. Policy Insights from the Behavioral and Brain Sciences **3**(2), 245–253 (2016)
- 35. Snyder, B.F., Hooper-Bui, L.M.: A teachable moment: The relevance of ethics and the limits of science. BioScience **68**(4), 249–250 (2018)
- 36. Susser, D., Roessler, B., Nissenbaum, H.: Technology, autonomy, and manipulation. Internet Policy Review 8(2) (2019)
- 37. Thomson, J.I.: The right to privacy. Philosophy & Public Affairs pp. 295–314 (1975)
- 38. Toda, A.M., Valle, P.H., Isotani, S.: The dark side of gamification: An overview of negative effects of gamification in education. In: Researcher Links Workshop: Higher Education for All, pp. 143–156. Springer (2017)
- 39. Trechsel, A.H., Kriesi, H.: Switzerland: the referendum and initiative as a centrepiece of the political system. In: The referendum experience in Europe, pp. 185–208. Springer (1996)
- 40. Weaver, R.K.: The politics of blame avoidance. Journal of Public Policy 6(4), 371–398 (1986)
- 41. Winfield, A.: Ethical standards in robotics and ai. Nature Electronics 2(2), 46–48 (2019)