West Darrell M and Allen John R (2021) Turning Point: Policymaking in the Era of Artificial Intelligence. Washington, DC: The Brookings Institution Press. 297 pages. ISBN: 9780815738596

Pedro Robles
par13@psu.edu

Daniel J. Mallinson

Philosophy of science and technology presents critical arguments challenging the motives behind technological innovation (Sismondo, 2010). The accumulation of scientific knowledge also contributes to solving real-world problems (Fuller, 2005). Moreover, modernization theory envisions a social process coupled with economic improvement and, as a result of technological developments, that contributes to social development as well (Hälterlein, 2023; Misa et al., 2003). AI technology is applied science that offers social benefits through economic development (Biegelbauer, 1998). However, AI technology should not be the final determinant in enhancing human development (Cross, 2018). It can offer enhancements to decision making and resource allocation where there are human limitations (Hälterlein, 2023), but humans still play a pivotal role in making ethical decisions. It is this theme that pervades Darrell M. West and John R. Allen's *Turning Point: Policymaking in the Era of Artificial Intelligence*. Their work shows how the three threads from research on science and technology studies are pulled together with respect to emergent AI technology.

Artificial Intelligence has evolved as a transformative technology with the opportunity to revolutionize various aspects of our lives (West and Allen, 2020). Its capability to analyze vast amounts of data, recognize patterns, and learn from experience has significantly improved healthcare, transportation, and finance (Ben Yahia et al., 2021; Davenport and Kalakota, 2019; Xie, 2019). For example, AI-powered medical systems can provide personalized patient treatment plans, leading to better health outcomes and reduced costs. Self-driving cars promise to make transportation safer and more efficient (Amann et al., 2023; Stilgoe, 2018). Financial institutions use AI algorithms to detect fraudulent activities and make more accurate predictions (Goodell et al., 2021). However, as AI becomes increasingly capable, there are concerns about its potential risks and ethical implications (Charles et al., 2022). The rise of automation and AI-driven systems may lead to significant job displacement in some sectors, raising questions about how society will address this displacement and support those impacted (Howard, 2019). In addition, there are public concerns about the potential for biases in decision-making, particularly in areas such as hiring, lending, and criminal justice, where AI systems may perpetuate existing inequalities (Yam and Skorburg Joshua, 2021). As such, it is crucial that we carefully consider the development and deployment of AI technologies to ensure that they are designed and used in ways that align with ethical and social values (Elliott et al., 2021). It will require a collaborative effort from policy-

makers, industry leaders, and society to establish clear guidelines and regulations that balance the benefits of AI with its potential risks (The Anh et al., 2020). By doing so, we can unlock the full potential of AI while ensuring that it benefits everyone fairly and equitably.

West and Allen lay out in significant detail many of these benefits. However, they are not pollyannaish about AI. Another clear theme are the myriad social challenges presented by the technology. These include privacy concerns, ethical decision making, the role of humans in the AI chain of action, and much more. AI safety issues been raised across multiple fields, including healthcare and transportation (Winter and Davidson, 2019; Winter and Carusi, 2022). Each of these concerns presents thorny issue for policymakers, but also opportunities for governments to protect citizens against ethical problems, including discrimination, and promote transparency. For example, bias reduction in the education sector may require reformation of school system structures and technology training for educators. In terms of equity, everyone should have access to technology regardless of their economic condition. Drawing from Brookings Institution survey data, the authors reveal the degree of public concern about AI safety.

Success in maximizing the benefits of AI while reducing its potential downsides requires a suitable governance framework that establishes ethical guidelines and vertical and horizontal rules and enforces laws and appropriate regulations (Winter and Davidson, 2019; Winter and Carusi, 2022). West and Allen offer a variety of thoughts on regulation, including the issue of governments balancing not squashing innovation with properly protection the public from corporate and government excesses. To do so, government institutions should promote accountable processes and transparent methods within public and private organizations and with the public. In the private sector, some organizations, including IEEE and Microsoft, have considered integrating computer code that promotes ethical values like human safety, privacy, and fairness. There is a significant information asymmetry between private sector companies developing AI and governments trying to regulate a rapidly changing technological landscape. To do so effectively requires collaboration between the public and private sectors.

While the book is excellent in its broad scope and gives the reader a solid understanding of the current state of AI, it cannot do everything. The regulatory recommendations are specific, but understandably limited in their depth. The authors raise the need to balance innovation and regulation, but do not offer a prescription for how to do this. Further, save brief attention in the chapters on defense applications and building a responsible AI, there was little discussion of the use of AI in the criminal justice system (Wirtz et al., 2020). Given the stark inequalities in the United States and concerns about surveillance and over policing of minority communities, application of AI to the criminal justice system could stand its own chapter. For example, governments are considering integrating AI to assist lawyers in processing legal cases and research investigations on previously archived cases (Xu and Wang, 2021). In the courtroom, AI has been proposed to assist judges in reviewing cases and improving sentencing decisions (Xu and Wang, 2021). Finally, AI can analyze large volumes of unstructured data and images to support law enforcement (Xu and Wang, 2021).

Overall, the book is a valuable resource for anyone interested in understanding the potential benefits and challenges of AI integration in various sectors and highlights the need for ethical considerations and regulatory frameworks.

References

Amann J, Vayena E, Ormond K E, Frey D, Madai V I and Blasimme A (2023) Expectations and attitudes towards medical artificial intelligence: A qualitative study in the field of stroke. *PLOS One* 18(1). https://doi.org/https://doi.org/10.1371/journal.pone.0279088

Ben Yahia N, Hlel J and Colomo-Palacios R (2021) From Big Data to Deep Data to Support People Analytics for Employee Attrition Prediction. *Ieee Access* 9: 60447-60458. https://doi.org/10.1109/access.2021.3074559

Biegelbauer P S (1998) Mission impossible: The governance of European science and technology. *Science & Technology Studies* 11(2): 20-39.

Charles V, Rana N P and Carter L (2022) Artificial Intelligence for data-driven decision-making and governance in public affairs. *Government Information Quarterly* 39(4): 101742. https://doi.org/10.1016/j.giq.2022.101742

Cross G S and Szostak R(2018) *Technology and American Society A History*. New York: Routledge.

Davenport T and Kalakota R (2019) The potential for artificial intelligence in healthcare. *Future Healthcare Journal* 6(2). https://doi.org/10.7861/futurehosp.6-2-94

Elliott K, Price R, Shaw P, Spiliotopoulos T, Ng M, Coopamootoo K and van Moorsel A (2021) Towards an Equitable Digital Society: Artificial Intelligence (AI) and Corporate Digital Responsibility (CDR). *Society* 58(3): 179-188. https://doi.org/10.1007/s12115-021-00594-8

Fuller S (2005) Is STS truly revolutionary or merely revolting? *Science & Technology Studies* 18(1): 75-83.

Goodell J W, Kumar S, Lim W M and Pattnaik D (2021) Artificial intelligence and machine learning in finance: Identifying foundations, themes, and research clusters from bibliometric analysis. *Journal of Behavioral and Experimental Finance* 32: 100577. https://doi.org/https://doi.org/10.1016/j.jbef.2021.100577

Hälterlein J (2023) Technological Expectations and the Making of Europe. *Science & Technology Studies* 36(2): 26–46. doi: 10.23987/sts.110036.

Howard J (2019) Artificial intelligence: Implications for the future of work. *American Journal of Industrial Medicine* 62(11): 917-926. https://doi.org/10.1002/ajim.23037

Misa T J, Brey P and Feenberg A (2003) *Modernity and technology*. Cambridge, Mass.: MIT Press.

Sismondo S (2010) *An introduction to science and technology studies* (Vol. 1). Chichester: Wiley-Blackwell.

Stilgoe J (2018) Machine learning, social learning and the governance of self-driving cars. *Social Studies of Science* 48(1): 25-56. https://doi.org/10.1177/0306312717741687

The Anh H, Luis Moniz P, Santos F C and Lenaerts T (2020) To Regulate or Not: A Social Dynamics Analysis of an Idealised AI Race. *The Journal of Artificial Intelligence Research* 69: 881-921. https://doi.org/https://doi.org/10.1613/jair.1.12225

West D M and Allen J R (2020) *Turning point : Policymaking in the Era of Artificial Intelligence*. Washington: The Brookings Institution.

Winter J S and Davidson E (2019) Governance of artificial intelligence and personal health information . *Digital Policy Regulation and Governance* 21(3): 280-290. https://doi.org/10.1108/dprg-08-2018-0048

Winter P and Carusi A (2022) 'If You're Going to Trust the Machine, Then That Trust Has Got to Be Based on Something':: Validation and the Co-Constitution of Trust in Developing Artificial Intelligence (AI) for the Early Diagnosis of Pulmonary Hypertension (PH). *Science & Technology Studies* 35(4): 58–77. doi: 10.23987/sts.102198.

Wirtz B W, Weyerer J C and Sturm B J (2020) The Dark Sides of Artificial Intelligence: An Integrated AI Governance Framework for Public Administration. *International Journal of Public Administration* 43(9): 818-829. https://doi.org/10.1080/01900692.2020.1749851

Xie M (2019) Development of artificial intelligence and effects on financial system. *Journal of Physics: Conference Series* 1187(3): 032084.

Xu N and Wang K-J (2021) Adopting robot lawyer? The extending artificial intelligence robot lawyer technology acceptance model for legal industry by an exploratory study. *Journal of Management & Organization* 27(5): 867-885.

Yam J and Skorburg J A (2021) From human resources to human rights: Impact assessments for hiring algorithms. *Ethics and Information Technology* 23(4): 611-623. https://doi.org/https://doi.org/10.1007/s10676-021-09599-7