

Introduction

Throughout the history of mankind, industrial revolutions have had the potential to create profound effects on the way in which the world is structured and operates. Each new iteration of the industrial revolution has been characterized by the advent of some technology. It was the steam engine for the first industrial revolution, the ability to harness electricity for the second, and computers alongside the internet for the third (Schwab 11). The Third Industrial Revolution is often seen as the most recent revolution. However, Klaus Schwab contends that we are currently in the midst of the fourth industrial revolution and at its epicenter is artificial intelligence (AI) and machine learning (ML) (12).

In the broadest sense of the term, AI involves “the use of a computer to model intelligent behavior with minimal human intervention” (Hamet and Tremblay 36). Most modern-day implementations of AI apply an algorithm to data for the purpose of prediction or decision making (Marr 4). Further specialization of AI, results in machine learning which allows the computer to make its own algorithm based on the data it is given either with or without the help of a human (Marr 4). Within the private sector AI is prolific and has become an integral component of many companies. For instance, many sites offer a personalized user experience tailored to your wants such as in the case of Amazon or Netflix. Both of these companies give their users recommendations for items to buy or movies and series to watch based on previous purchasing and viewing patterns, respectively (Marr 30). AI has also infiltrated most people’s daily lives through personal home assistants like Alexa or Echo.

Although AI has unknowingly become a mundane aspect of many people’s lives, there is still an air of mysticism about this sort of technology. As a machine-based technology, it is often considered to be an impartial agent that removes the emotional aspect of decision making. For this reason, its reach has stretched passed the bounds of the private sector into the public sector. In countries like the US, AI can be found in both the judicial and

health systems. Some uses include facial recognition, recidivism predictions, treatment plan predictions, or detection of illnesses based on imaging (Davenport and Kalakota). On the surface, such implementations would seemingly streamline many tedious processes; therefore, paving the way for the expansion of access to services and reduction of crime. For these reasons, the implementation of AI based governmental services could be beneficial in a region like Latin America with high levels of inequality and crime. However, there are pitfalls to using AI due to its use of actual data. The data as a product of the real world can have hidden biases within it such as racism and or sexism. This paradoxical “combination of coded bias and imagined objectivity” is what Ruha Benjamin has termed the New Jim Code (3). As a racially diverse region that has a colonial history as well as a culture with an undercurrent of machismo, it is difficult to determine how AI will affect any given country in Latin America. Thus, is AI, given the possibility of algorithmic bias, a tool that can help reduce inequality in Latin America within the healthcare and judicial systems, and if so under what circumstances?

Theoretical Framework

I will be using Latin American decolonial theory as the basis for my research. Decolonial theory as developed in Latin America posits that modernity and coloniality are two closely linked phenomenon that coproduce one another. Under this theory, modernity is seen as a Eurocentric center – periphery system. Therefore, as stated by Harding, “the local characteristics—on both sides of the Atlantic—of the Spanish and Portuguese colonization of the Americas also played a significant role in the formation of modern social orders and, consequently, of the coproduction of their sciences and technologies” (1066).

The theory is important because many of the societal biases in modern day Latin America that have the ability to skew AI systems can be linked to the colonization of the region. Furthermore, the history of the Eurocentricity of knowledge in Latin America can

factor into the way in which AI systems are developed and what models are prioritized, regardless of whether the systems are imported or created within the country. Lastly, as stated above, technology and science have historically been used to validate and perpetuate prejudice. However, within the AI field the developers are most likely to perpetuate prejudice as a result of not thinking about the ways that race and gender biases can affect the data rather than intentionally building these factors into their code. This lack of forethought can be very dangerous because AI can potentially exacerbate already existing bias and prejudice within a country (Duster xii).

Data and Methods

I would like to use a comparative study between Colombia, Argentina, and the United States in order to assess current and future risks associated with AI use in the public sector and its effect on inequality. I chose Argentina and Colombia because they both currently implement AI systems in their public sectors. Specifically, the judicial systems of Argentina and Colombia are incorporating AI systems known as Prometea and PretorIA, respectively (Corvalán 24; Jaimovich). Not only are both of these countries rapidly expanding their utilization of AI, but they also represent two ends of the spectrum for racial composition and crime rates within Latin America. Although, despite the many differences between the two countries, Colombia's PretorIA system is actually based upon Argentina's Prometea system (Jaimovich). The recreation of another country's AI implies that the future of AI systems within Latin America could be relatively uniform which could be problematic if the AI is biased or flawed in some way. Furthermore, I am including the US in my analysis because the US is also an ethnically and racially diverse nation with a colonial past that is heavily utilizing AI. Unlike many Latin American countries, however, many AI systems in the US are not in their infancy and have had time to exhibit hidden flaws.

In my research, I will be including an analysis of the history of the country in regards to the treatment of marginalized people. Following this, I will look at modern day breakdown of health outcomes and incarceration based on markers such as gender, race, and ethnicity. These two sections will allow me to identify ways in which marginalized groups have been under or over accounted for in specific data pertaining to the healthcare and judicial systems. I will then analyze how AI systems such as Prometea and PretorIA were created and what precautions were taken to mitigate algorithmic bias. In order to further support the validity of my findings for Colombia and Argentina, I will then identify comparable AI systems within the US and research the ways in which bias has or has not been found in the years following their implementation.

Limitations

I do not believe that I will be able to find exactly how each AI system was made in order to find fault in the code itself nor will I be privy to all of the information used in training the AI systems. Therefore, my findings will reveal the possibility of algorithmic bias and not concrete evidence in favor or against the ability of specific AI to increase or decrease inequality. Furthermore, I am using Argentina and Colombia as case studies but Latin America contains a very diverse group of countries whose main connection is linguistic. So, the extrapolation of my findings to represent the entire region could allow for discrepancies in how AI could manifest within any individual country.

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