Title

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Publication Date

2025-03-17

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Abstract: This essay examines the impacts of autonomous vehicles and how they affect the working class. Drawing parallels to a framework established by Imani Perri, we will understand the extent to which autonomous vehicles reshape society by exploring them as a tool of power.

INTRODUCTION

Throughout history, human transportation has evolved significantly. Not only has the evolution of travel shaped societal structures, but it has also improved the daily lives of many people in the economy. In 1885, Karl Benz built the first automobile powered by a gas engine [1]. In 1908, Henry Ford then developed a new model of the car, the Model T, which was affordable due to its mass production [1]. By utilizing the assembly line, Ford was able to lower costs effectively and change the scale of cars in America from about 8,000 to 8 million between 1900 and 1920 [1].

This mass production transformed the economy by making car ownership more accessible to the working class, enabling them to travel on a greater scale and creating job opportunities in production and transportation. As the usage of these vehicles increased, so did the reliance on them. The dependencies of fuel, infrastructure, and automobile manufacturers were now a core part of the economy, fueling the functionality of a thriving economy. For example, in today's economy, jobs such as delivery drivers make up over 4% of the workforce across the country [2]. The daily lives of these individuals revolve around a mode of transportation, confining them to a dependence on these vehicles.

Humans also have always had the desire to expand, develop, and create. An automobile isn't enough. Since the creation of automobiles, the concept of self-driving vehicles has been a futuristic dream, but that dream is slowly turning into a reality. Autonomous vehicles are now starting to expand in today's economy, signaling an advancement in transportation. On the surface, this not only promises greater efficiency and better accessibility, but it could potentially eliminate the human errors of driving. However, to reveal its truths, we must look at what is beyond the surface, such as the details that go beyond the physical autonomous vehicle. The benefits of autonomous vehicles would not be able to tip the scale when opposed to the disruption of labor markets and shifts in economic power that it would cause. The millions of workers who rely on driving jobs could face potential job displacement due to a potential shift of humans to autonomous vehicles. This work is in partial fulfillment of the ENGR184 course using the blueprint curriculum in Ref.[3,4] and captured in a collection [5].

METHODS

This essay will examine how detrimental effects are placed on the working class through autonomous vehicles. The implementation of autonomous vehicles seems like a promising approach to technology advancement, but there are strong insecurities about these machines.

The disruptions of labor markets, displacement of jobs, and a corporate-controlled system are shadowed by the facade of a better, more sufficient economy.

In Imani Perri's *Vexy thing*s, Perri creates a lens to understand modern patriarchy through a triad of three interconnected components: sovereignty, property, and personhood [6]. Sovereignty holds that authoritative power and control over the other two components, property, which defines who owns resources and labor rather than a physical ownership, and personhood, which dictates who is recognized as a full subject within the system. We can apply this framework to examine how autonomous vehicles reshape power, control, and human agency to discover the underlying power structures, ownership facades, and shifts of legal and labor definitions that affect the working class.

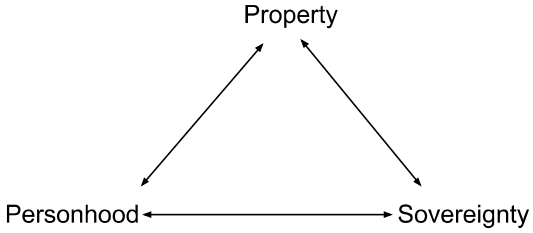

Figure 1: Imani Perri's Triad Framework

RESULTS AND INTERPRETATION

1. Sovereignty as multiple entities

To understand how autonomous vehicles modify societal foundations, we must first consider sovereignty. In this case, sovereignty is the leading force of the triad. It determines what exactly is the property, having utter control over it, and who is allowed to own it, qualifying who is a person within this system. When it comes to autonomous vehicles, ownership is not just about the physical matter of the item anymore. Initially, the government was thought to be the primary sovereign unit, but when you dive deeper into the schematics, such as the implementation of AI itself, data collection, and who can own it, things start to get "muddy." Determining a singular sovereignty unit in this autonomous economy is complex. The government regulates the laws, but corporations own the software/data, while AI itself are the "ones" who make the final decisions when on the road, which opens up another path of ethical inquiry, causing individuals to lose their autonomy over their transportation.

Suppose Autonomous vehicles were the primary method of travel. Even in today's society, the working class already has limited sovereignty over their means of transportation. For example, in 2022, nearly 7.0% of workers in transportation-related occupations were self-employed [7]. Even though very limited, each worker had some sovereignty over their own vehicle. The maintenance, mileage, and anything that had to do with the property of the vehicle itself were the responsibility of the individual. However, implementing autonomous vehicles on a large scale would prevent these individuals from participating in the system at all. Substituting the worker with an autonomous vehicle that could do the same job displaces them from their job but denies the already restricted sovereignty of their vehicle.

2. Property in the Triad

The second aspect of this triad is understanding the property portion. On the surface, the autonomous vehicle itself is the property because it can be owned by someone, but similar to sovereignty, let's break it down deeper. Let's consider other key factors that parallel control

over resources, labor, and value. Valuable resources that reside in this context are data. The machine itself isn't the sum of all property, but the data and valuable information that is collected through the common use of each autonomous vehicle would compile into a grand storage of value. Whether it is the geography of the roads, data of the users, or visual videos, the data is inherently owned by the corporation that runs the software. All of this data holds economic value, but it isn't owned by the users of the autonomous vehicles. It's shifted to the property of the corporations that operate and control the software. Now, the users, let's assume the working class getting to work, are not only consumers of the product but also producers of data that is used as a tool for the monopolizing corporations. Transportation has shifted from individual ownership to a corporate-controlled industry where users generate valuable information instead of maintaining control of their individuality.

Control over the labor market as well is shifted immensely. As mentioned earlier, 7.0% of transportation-related occupations were self-employed. To further my point from before, with the introduction of autonomous vehicles, these jobs are now controlled by corporations, leaving these workers to essentially compete against a multi-billion dollar industry of AI that operates with minimal human involvement [8]. Because this economy is now heavily automated and corporate-driven, the working class loses economic independence, losing control over their financial stability and labor autonomy. But this shift doesn't just affect labor and property. Where does this leave the working class who have been displaced? If AI replaces human decision-making in transportation, does AI itself have a form of personhood? This shift does not just impact displaced workers, but it challenges the reshapes of the definition of personhood.

3. Shifting the Definition of Personhood

The third factor of this triad effect is the personhood aspect. When it comes to an autonomous vehicle, there would be a major shift in the definition of personhood and who would be recognized within the constraints of autonomous vehicles. The first group to be impacted by this shift is the displaced workers. In this autonomous vehicle economy, those who once held transportation jobs, such as taxi drivers, Uber, and Lyft, are all stripped of essentially everything that gives them their recognition. While still a part of the economy, they would be reduced to producers of information for the corporations.

In another perspective, the working class's personhood faces a level of social erasure as well. The identities, communities, and social interactions that are tied through these jobs would disappear, alongside the foundations of their personhood. By the standard of this economic shift, their status would now be socially invisible. The working class would be pushed down to a consumer rather than a contributor to the economy. As Perri critiqued, modern systems exclude those who are no longer deemed necessary. The implementation of autonomous vehicles does this by rendering the working class useless, casting a shadow over their personhood.

While the working class is losing its sense of personhood, autonomous vehicles are essentially gaining a new form of power. If AI is now the primary force in transportation, they are the ones in full control of the "last minute" decisions. Remember, personhood is who is recognized in this economy and if the autonomous vehicle now creates decisions of how to drive itself, it would now hold more value over the displaced workers. This transition not only replaces human agency, but by shifting the authority from humans to a corporate-controlled system, it creates a new hierarchy where AI holds greater economic value than the displaced labor force. In Perri's framework, modern systems don't just exclude marginalized groups but create new forms of power in their place. Therefore, autonomous vehicles do not solely exclude the displaced workers but create a new system where AI is now in their place,

implementing a new form of mechanical personhood. In this shift, personhood is redefined due to economic agency no longer being tied to human labor, but more towards corporate-controlled technology that dictates travel, access, and employment.

CONCLUSIONS

The development of advanced technology isn't a distant concept, it's already shaping our society today. Human advancement is always going to be a factor in the world. When technology is involved, there is always competition and consequences. The rise of autonomous vehicles is a piece of technology that does nothing less than reshape our economy. It is a fundamental component of restructuring power, labor, and economic agency that would disproportionately affect the working class. We can problematize the technology of the future by drawing parallels through Imani Perri's triad framework and other frameworks similar to it. Through these lenses, we can uncover how these technological advancements reinforce existing power hierarchies. Without these conversations of deeper analysis through different frameworks, autonomous vehicles will worsen economic inequality, shift control more towards corporate entities, and reshape definitions of labor in ways that exclude workers. As we develop new technologies, we must push for policies that prioritize these groups that would be unproportionately affected.

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