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Publication Date

2024-03-16

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Abstract: This paper critically references the transportation sector in the United States and examines the modern underpinnings of its foundation. It also advocates for decolonization of the transportation industry as viewed through the Native Feminist ideology. Delving deeper into the foundation of, as well as critically assessing modern ‘norms’ requiring everyone to own a car, the paper advocates for the reevaluation of prevailing power structures, aiming to foster greater equity and environmental inclusivity in transportation, using the Native Feminist framework to design and deploy inclusive, accessible, and environmentally conscious transportation systems.

INTRODUCTION

Modern American infrastructure relies greatly, if not nearly exclusively on cars and trucks. However one might like to phrase it, there is no escaping the fact that the United States is responsible for 13.49% (Scott) of the world’s greenhouse gas emissions, with its population representing approximately 4% of the world population (Census). While many would argue that EVs (electric vehicles) are the answer for climate change, statistical data and lifespan analysis outlined in this article would suggest otherwise. What shall be done, then, in the United States to truly combat climate change and queer the topic of transportation?

Native Feminist thinkers have already found the solution. Not necessarily THE solution, but the right path to determining the solution. For once, let us imagine that we are in an Indigenous Nation in the U.S., observing the people who have called these lands their home for centuries, and continue to do so to this day. Even though the conveniences of Western STEM innovation and scientific advance lured many Native people into embracing a culture unlike their own, there are also those who remain true to their roots as they battle to keep their ways alive and well, which represents the Indigenous way of knowledge. That is the point of focus of this paper. What can we learn from Native communities, and in particular Native Feminist thinkers and philosophers, and apply these learnings to our lives as 21st century citizens.

Long before the 1600s and the voyages originating from the Old World, Native people lived in harmony with the land. Having a sedentary (settled) agriculture, hunter-gatherer practices, and a spiritual way of life, Native societies lived in accord with nature. A common theme that manifested in these societies was the lack of greed and a life characterized by modesty. With modesty, and without greed as a driving factor, whoever had the most prestige, resources, or power was not necessarily relevant or detrimental since life was not a be all end all. It was a cycle, and just as an intricate cycle, a minor disruption would wreak havoc in the Native way of life. With these principles in mind, this paper provides insight into what the transportation industry in the United States has evolved to in modern day and how can Native Feminism teach us how to design and deploy inclusive, accessible, and environmentally conscious transportation systems.

METHODS

Developing an encompassing hypothesis for this research paper initially deemed challenging. After careful consideration of transportation systems in modern American society and how Native Feminist ideology could be used to evaluate scientific articles referencing climate change as well as critique widely accepted American ‘norms’ in transportation, a comprehensive research ensued. This research included weighing and evaluating the merits of different approaches into the methods that could be viably implemented in the future. Moreover, scientific research articles and governmental research studies were evaluated to further develop a viable rendition for the future of transportation in the United States, weighed through a Native Feminist lens and critically addressing the cycle of life as many Indigenous peoples have already established. All information was filtered through the Native Feminist framework and reflected to societal needs and viably implementable solutions for the American transportation sector.

A key group of focus of this critique is governmental organizations, both at local and federal levels, that promote the use of more and more cars for anything that Americans do. Going to the grocery store right around the corner? You probably need a car. Visiting your parents who live 5 blocks away? Easiest way to go there would be in a car. What if I do not want a car or cannot afford a car? Your options would be highly limited, as American society is predominantly reliant on cars. This has been almost a fact of life that is ingrained in heteropatriarchal American culture, something Native Feminists adeptly reject. For instance, some more progressive cities across the United States including Minneapolis, San Francisco, and Seattle have all gained reputations for being cyclist-friendly cities (People for Bikes). On the other hand, cities including New York, Boston, and Philadelphia remained on top of the list of best American cities for public transportation (Bliss), including metro/subway lines, bus lines, and ferries. Numerous examples of public transportation systems that operate in countries around the globe and have been highly successful are found in cities like Hong Kong, Zurich, and Stockholm according to a recent study at U.C. Berkeley (WEF). Using the Native Feminist framework, a deeper investigation into the highlighted cities reveal the desirability of public transportation, which would reduce the tension in mobility, highlighting benefits of surveying land and implementing the right means of transportation including bike lanes, bus lanes, and tram lines. As visible in the figures below, transportation accounts for approximately $\frac{1}{4}$ of the yearly U.S. greenhouse gas emissions (DOT) and is not insignificant by any means. It reflects a scientific finding that should not be disregarded or considered as potentially a fact of life, but something that scientists and engineers should advocate to bring a change to.

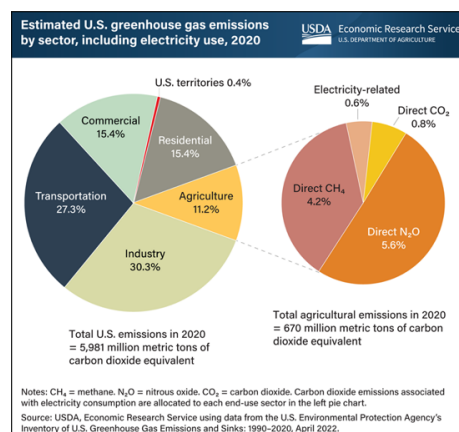


Fig. 1. U.S. Greenhouse Gas Emissions by Sector, 2020 (Sands).

Moreover, although some might argue that numerous other factors are probably included in the transportation sector, and that transportation does not necessarily entail people using their personal cars for transporting to and from places. According to the EPA, light duty vehicles, colloquially known as personal cars, account for approximately 60% emissions within the transportation sector (Environmental Protection Agency).

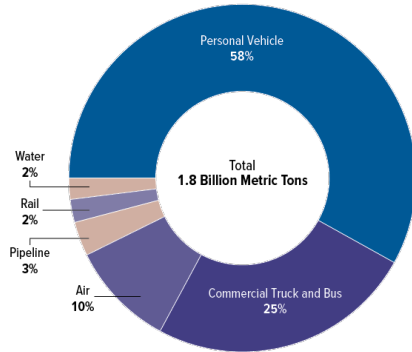


Fig. 2. Breakdown of U.S. Greenhouse Gas Emissions from the Transportation Sector, 2019 (Swagel).

While others would be fast to say that there are more options. And that we could drive cars and save the planet at the same time, research on this topic not funded in any part by lobbyists would disagree, Native Feminist thinkers would also point that this would contradict the principle of reciprocity. The concept of reciprocity means that you give back what you take from the environment, and an EV is only a temporary patch before our transition to making cities that are focused on people, not cars. While EVs might be better for the lifespan of the car, they are inherently very ineffective and inefficient means of transporting a person as the person and the entirety of a car needs to be transported, which highlights a paradigm of wastefulness. As seen in the plot below, 25% of U.S. greenhouse gas emissions are to create electric power, or electricity. Isn't electricity clean? One could get it from the sun, so why would it have any emissions at all? Answering these questions require a deeper dive into electricity, how it is produced and whether it is really what the public thinks it is. Native Feminist theory comes in very handy in examining what we have been told and in differentiating facts from "truth" being told to us by heteropatriarchal leaders.

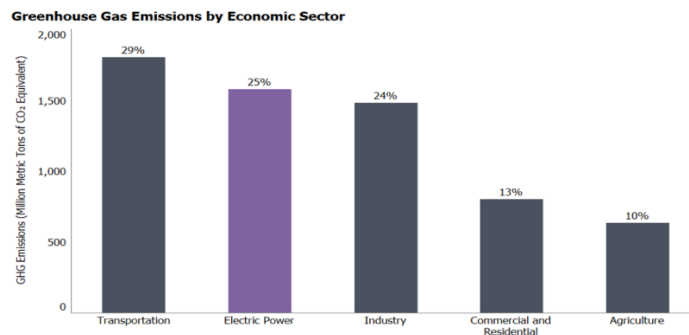


Fig. 3. Impact of Electric Power Generation on U.S. Greenhouse Gas Emissions, 2021 (EPA).

According to a report by the Energy Information Administration, currently only 21.5% of the U.S. electric grid is powered by renewable energy (EIA). However, some cities and even some states, which include California, and others following suit – Vermont, New York, Washington,

Oregon, Massachusetts, Virginia, Rhode Island, and Maryland are also banning ICE (Internal Combustion Engine) cars by 2035 (Karlman). Native feminist thinkers would investigate the true root cause of these decisions, if it is climate change that we are trying to mitigate, why are we not drafting legislation to design communities that have ingrained transportation considerations and implementation of public transit, but only put a band-aid on the problem persisting through American society? While EVs might be better for the environment in the long run, the emissions from the production and processing of raw materials in their batteries create considerable emissions. All in all, it is a very bold move taken by the leaders of the aforementioned communities, with the guidance of lobbyists, to pass what is going to be making them and the state the most money without any concern for the citizens of these neighborhoods, cities, states, and most definitely not the environment.

The concern here, as it appears to be for so many constituents is not that politicians are indeed trying to save the planet, but they are rather doing what will get them the most votes and funding for their upcoming elections. This is the greatest critique outlined in this paper and is very significant. A Native Feminist thinker would ask, if 80% of our electricity is coming from non-renewable resources, how does it make sense to force everyone to buy electric cars that are going to be running on electricity made from fossil fuels without fixing the underlying problems in American city planning as well as public transportation constraints?

RESULTS AND INTERPRETATION

The main results of this study highlight the need for environmentally viable means of transportation to be implemented in American cities. Whether these include building further bike lanes, public transit lines or designing more walkable cities, the need for a novel future in transportation as characterized through Native Feminist principles is evident. A world in which we give as much as we take, live in a delicate balance with the environment and the world around us is crucial in developing a sustainable future through ecologically conscious means of transportation, and of living.

Public transit has long been seen as a not-so-desirable mean of transportation with only two percent of Americans using it to get to work, in contrast to over 20% of the Swiss and more critically, 89% of Americans choose to drive to work compared to 46% of the Swiss (Making Transit Work). Here in the United States, “34% of blacks and 27% of Hispanics report taking public transit daily or weekly, compared with only 14% of whites. Foreign-born urban residents are more likely than urban dwellers born in the U.S. to regularly use public transportation (38% vs. 18%)” (Anderson), which further goes on exemplifying the importance of breaking apart from the mentality and thought process that all Americans should have a car. Having a car in the United States is a heteropatriarchal construct forced on us for generations and contradicts all foundational principles of Native Feminist theory. Native Feminism rejects that certain groups of power have pre-outlined rights that they are born with, and this entails that they can act as they want and destroy the nature around them, which would critique the American gospel that everyone is basically born with a right to drive and own a car. The main underlying reason for the lack of Americans using public transportation compared to other nations is our over-reliance on cars for almost all types of transportation. “For many US households, access to a car unlocks economic opportunities such as jobs and education and time with family and friends ... If the value of car ownership and use exceeds the cost, consumers may continue to want privately owned cars even if lower-cost on-demand mobility solutions are available.” (Moody et al.). The people who designed our cities and built our schools, as well as workplaces and every other community space all thought through the perspective of a car owner and this does not only reflect all American communities, but also forces Indigenous communities to adapt to this ‘ideal’ or suffer the consequences otherwise. That is the reason why some stores have a larger parking lot than floor space, and this is a critical fact in the U.S. that contradicts Native Feminist ideals and environmental advocacy.

Native Feminist ideology has long rejected the nuclear model of family, just as they have rejected established Western norms and ideals. Indigenous communities were places where there were no multiple nuclear families, but a single family that looked out for each other, hunted together, fought together. In some way, Native women were queered, not in the sense that they did not necessarily bear children, but in the sense that they did not reflect the 'norms' reflected on them by the American heteropatriarchy. This manifests in that Native populations have always approached Western 'conveniences' with a sense of distrust, and this is for good reason. From the early stages of colonialism, Native people always suffered a sense of broken trust to Westerners, not because the technologies they proposed were ineffective, but the question always was to determine if there was any malice intended. This issue is anything but different and cars are the manifestation of Western colonialism. Heteropatriarchal figures and government officials are forcing people to buy more and more cars, and while the middleman including dealers, transporters, the heteropatriarchy itself, and politicians are making a great sum of money from the process, the environment is decaying at before-unseen rates and continues to do so. The solution to climate change and greenhouse gas emissions is selling less and less private cars and investing in public infrastructure for truly public transportation, creating bike lanes, accessible spaces, and community centers. The time to take drastic actions is now – to once and for all save our planet from exponential decay and embrace Native Feminist ideology in guiding the future of transportation.

CONCLUSIONS

The current pace of fossil fuel usage as well as the over-dependence on cars as the means for transportation both manifest as the greatest problem we have faced as a society in mitigating climate change and decreasing greenhouse gas emissions. The thinning of the ozone layer by the 1980s had raised alarm bells all across the world due to CFCs released into the atmosphere (McQuicklin et al.). Chlorofluorocarbons, or CFCs “are nontoxic, nonflammable chemicals ... [that] are used in the manufacture of aerosol sprays, blowing agents for foams and packing materials, as solvents, and as refrigerants” (Elkins). However, when they are released into the atmosphere, which is a matter of time, they “deplete the ozone layer when they slowly rise into the stratosphere, are broken down by strong ultraviolet radiation, release chlorine atoms, and then react with ozone molecules” (EPA-2). And even with due evidence, “the chemical industry maintained that the data on CFCs and stratospheric ozone were inconclusive and didn't warrant drastic action” (ACS). However, following the signing of the Montreal Protocol, “a global agreement to protect the stratospheric ozone layer by phasing out the production and consumption of ozone-depleting substances” (Dept. of State) was established. While only becoming recently noticeable, the ozone layer over Antarctica that was damaged is finally healing according to the studies conducted by the United Nations (Borenstein).

This is proof that the world CAN come together and instigate true change. Most critically, even though corporations would argue for a certain future, and influence political figures through considerable donations, the facts and figures represented in this article highlight the need for a future where not everyone is driving a car, but rather everyone is biking, taking the bus or trains for travel. Native Feminism rejects the idea that we accept political gospel and bow our heads to lobbyists, but rather critically challenge the truth based on factual data and Indigenous experiences. In a future where cities are designed with pedestrians in mind, and where kids can ride their bikes, individuals go to work using public transportation, and family units travel across the country in sustainable and public transportation, a true change would only then be possible. The Native Feminist critique would reflect the ideology of taking from and giving back to mother nature (Arvin et al.), never in excess, never when it is unnecessary. A true 'green' future would lie in these principles and is only possible through the contribution and advocacy of scientists, thinkers, engineers, and intellectual collegiate discourse.

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