

# The Future of Sustainable Transportation and the White Supremacist trappings of the Environmental Movement

**Abstract**—One of the greatest challenges of developing a future of sustainable transportation is that existing paradigms in transportation are far removed from sustainable systems. This paper explores existing and emergent sustainable transportation systems using the three horizon's model, but also explores the manner in which racism has influenced the priorities of mainstream paradigms in transportation, and how the influences of racism undermine the goal of sustainability.

**Index Terms**—Climate Change, Transportation, Racism

## Part 1: Research

### I. INTRODUCTION

In Adam Bledsoe's paper for the Royal Geographical Society, *The primacy of anti-blackness*, Professor Bledsoe writes about anti-blackness as separately manifesting from class oppression, and this anti-blackness was the prime factor in the systematic destruction of black communities, such as the Rondo Neighborhood, by highway infrastructure. This transportation infrastructure, built to segregate white people in the suburbs, and to destroy black middle-class neighborhoods, is the same transportation infrastructure that we must reconcile with climate change (Bledsoe, 2019). In the quest to find solutions to this crisis however, the same forces of white supremacy which are responsible for our unsustainable infrastructure are often being called upon, consciously or not, in the fight against climate change. Indeed, one of the formative thinkers on climate change, Garrett Hardin, who spoke extensively about the tragedy of the commons, was a known eugenicist, and his influential work on the tragedy of the commons supports an ideology of racism in solutions to climate change (Locher, 2013). If the commons will be destroyed by the people, then community-oriented solutions to climate change, such as community solar gardens, and robust transit infrastructure are doomed to fail.

Luckily, racism does not make for a good scientist. Elinor Ostrom challenged Garrett Hardin's science in her Nobel Prize winning paper, *Governing the Commons*. In it, she describes the multiple ways in which the commons, rather than doomed to exploitation as Hardin would have you believe, are instead a product of the systems that protect them, or the lack thereof (Ostrom, 1990). We can see this in the way that the commons are applied, for example, it is seldom said, except for occasionally with

respect to the implementation of toll roads, that the interstate highway system, the commons of the car, is doomed due to its extensive use by the car community. Ostrom's work showed what we know intuitively, that we are not doomed to exploit the commons, so long as the commons are protected, such as the protection of the national highways as an institution (Ostrom, 1990).

### II. THE WHITE COMMONS

In Sharpe et. al's paper, *Three horizons: a pathways practice for transformation*, they outline the use of the three horizons model of thinking to work with uncertain futures by looking at the past, elements of innovation in the present, and where those elements of innovation could stabilize into the future (Sharpe et. al, 2016). A common example of an element of innovation found in the present is the electric car company Tesla. These vehicles are often touted as the sustainable future we are looking for, but in his paper, *On the Sustainability of Electrical Vehicles*, Mechanical Engineering Professor, Tai-Ran Hsu raises problems with this approach, in that these electric vehicles are not inherently green, they simply use the power from the grid, and excess demand on the grid from these electric vehicles if they are adopted mainstream, may have to be powered by fossil fuels due to the excess demand on the energy grid (Hsu, 2013). Luckily, in the paper *Net emission reductions from electric cars and heat pumps in 59 world regions over time*, it is found that electric cars save fossil fuels, but there are other environmental concerns (Knobloch et. al, 2020).

Nkulu et. al. in their paper, *Sustainability of artisanal mining of cobalt in DR Congo*, outlines the sustainability challenges of cobalt mining, a necessary part of lithium ion batteries (Banza Lubaba Nkulu et. al, 2018). The mining of this mineral causes oxidative DNA damage in children living near the mines. This exploitative mining of minerals for our electric cars in the Congo is only possible due to King Leopold II's brutal colonization of the Congo [7]. In Ryan Frank's paper, *Playing the Game: Leopold II's Foundation of the Congo Free State*, Frank details Leopold II's use of the idea of the White Man's Burden, that white people must bring civilization to 'uncivilized' nations of color. Evidently, civilization means white supremacy, there is nothing civilized about the mass enslavement and death of the congolese people, and the

mass extraction of resources, the hegemony of which continues to today (Frank, 2020)

Not only does the electric car fail to extricate itself from the white supremacy of the car, but its rise in the modern age cannot be divorced from the white supremacy that allowed for its rise. Elon Musk, Tesla's CEO, grew up in the segregated Pretoria, South Africa, an affluent white neighborhood, with white supremacist ties to the international community, as detailed by Saul Dubow in *Racial Irredentism, Ethnogenesis, and White Supremacy in High-Apartheid South Africa* (Biography.com, 2020; Dubow, 2015).

Robust public transportation, touted as the alternative to the electric car, can also fall into the trappings of white supremacy. The introduction of the Metro Transit Green Line to the neighborhood of Frogtown has caused rent to rise unaffordably, and threatens to push out the existing racially diverse tenants for white people, as detailed in *Beneath The Surface: A Snapshot of CURA's Gentrification Interview Data* (UMN, 2018).

Emerging solutions to the climate crisis as motivated by COVID-19, such as online coursework and school work threaten to follow the same path. None of these solutions are white supremacist in their design, but a lack of considerations of perspectives of color, specifically black perspectives, leads to these solutions inheriting the racism of the wider society, only innovating superficially on behalf of sustainability, but attempting to do so by maintaining the white commons, a commons by and for white people at the expense of the greater commons. Examples of the white commons include the way that we prop up aging highway infrastructure from the white suburbs into the cities, and create white transit infrastructure, such as the Green Line, which prioritizes white needs over the broader community as a whole. The white commons is also self-sustaining in that the avenues for change are often closed off to communities of color, both historically, and in the present. This is an academic paper which cites academic sources, but the power invoked by this format over other forms of discourse is also an example of the white commons, forms of knowledge stamped for approval by historically white institutions such as the University of Minnesota are prioritized over oral traditions and histories of color. In order to pursue a truly sustainable future, second horizons innovations such as the electric car risk the first horizons trappings of white supremacy.

### III. PLANS FOR A SUSTAINABLE FUTURE

Given the limitations that current second horizons glimpses of solutions to climate change, I see the sustainable future arising not from these solutions, but

from a second horizons process not relating to climate change directly, but relating to the rise of awareness of the struggles of people of color, and the reemergence of black power movements such as #BlackLivesMatter. Strong political voices such as Alexandria Ocasio Cortez espouse policies such as the Green New Deal. The Green New Deal has been floating around as a concept for some time. A. Aşıcı and Z. Bünül wrote about the idea of the Green New Deal in 2012 (Aşıcı et. al, 2012). The strength of the Green New Deal is that it addresses the inherent unsustainability of white supremacy by attempting to redress the economic problems of white supremacy by creating a New-Deal style economic stimulus. Its indirectness could easily become its achilles however. Like Adam Bledsoe argues in his paper, it is anti-blackness, not classism, that is the primary cause of the destruction, and it will become especially important to directly address racial inequality as the current, and next administration, with its more direct ties to white supremacy, could easily water down this idea to serve the white commons (Bledsoe, 2019). It would be easy to see a distorted Green New Deal which acts as a large stimulus package to fossil fuel and other existing white industries to subsidize their transition to a quasi-sustainable future, continuing to prioritize the white commons over the commons, and fueling future challenges in sustainability. The Green New Deal is a step in the right direction however, in the paper *Combining Climate, Economic, and Social Policy Builds Political Support for Climate Action in the US*, it describes the power of engagement that policies such as the Green New Deal in engaging the masses in climate action, especially people of color (Bergquist, 2019).

The most challenging problem with finding a way to tackle the sustainability challenges associated with the continued prioritization of the white commons over the commons is the ability to see the white commons. In the paper *Understanding White Privilege*, Francis E. Kendall, Ph.D. explains the intractability of white privilege (Kendall, 2002).

“Often it is not our intent, as individual white people, to make use of the unearned benefits we have received on the basis of our skin color. Most of us go through our days unaware that we are white or that it matters. On the other hand, the creation of a system in which race plays a central part – one that codifies the superiority of the white race over all others – has been in no way accidental or haphazard. Throughout American history white power-holders, acting on behalf of our entire race, have

made decisions that have affected white people as a group very differently than groups of color. History is filled with examples of the purposeful construction of a systemic structure that grants privileges to white people and withholds them from others.”

In this way, viewing the white commons as a white person can only be done directly indirectly, akin to the way an astronomer locates a planet by watching the light dim in a nearby star, that is to say, in order to tackle the sustainability challenges brought forth by the white commons, it is necessary to cultivate scholarship of color. We are not doing enough in that regard however. In *Black Students in 21st Century Higher Education: A Closer Look at For-Profit and Community Colleges*, the authors, Professors Constance Iloh and Ivory A. Toldson write about the common trajectory of black students going to community college and for-profit two-year schools (Iloh et. al, 2013).

“The community college and for-profit conundrum also presents a problem for the resources provided to Black students, since Black students are less likely to be enrolled in the selective institutions that bestow the most resources to students. The 82 most selective colleges spend almost five times as much annually per student and the most selective 468 colleges spend twice as much on instruction per student as open access schools (Carnevale & Strohl, 2013). For-profit colleges spend the least amount per student among all sectors of higher education, spending on average, \$9,758 per student in 2008-2009, while public colleges spent almost double that amount and private non-profits spend nearly four times as much per student (Bennett, Lucchesi, & Vedder, 2010). Because of these differences in resources and student spending, more selective colleges provide considerably more resources per student, leading to higher graduation rates, allowing greater access to graduate and professional degrees, producing higher lifetime earnings, and ultimately providing greater access for White students to managerial and professional elites (Carnevale & Strohl, 2013).”

The path from community college to graduate school is harrowed and narrow. In *Transfer Shock: Why is a Term Forty Years Old Still Relevant?*, Professor Karen Thurmond writes about the now nearly fifty-year old problem of dipping grades when students transfer to a new institution. This dip in grades can destroy the possibility of

graduate school for a student, as competitive graduate school admissions will notice the lower GPA. Without these students, the majority of black students, to be able to attend grad school, this limits the output of sustainability scholarship which addresses the problems of the white commons. This is especially true in Science, Technology, Engineering, and Math, making technical solutions to climate change, such as the electric vehicle, particularly vulnerable to shortcomings. In the paper *Academic and Social Barriers to Black and Latino Male Collegians' Success in Engineering and Related STEM Fields*, the authors write about the challenges that even Male Black and Latino college students have in attaining college success (Strayhorn et. al, 2013). To be able to address the unsustainability of the white commons, one must first address the lack of those who can see the white commons, both the lack of black scholarship, and the lack of white people with black mentorship. From a three horizon's perspective, a future which addresses the unsustainability of the white commons is more of a five-horizon's problem.

#### CONCLUSION

Contemporary solutions for future transportation systems to address the climate crisis fail to address white supremacy as a root cause of unsustainable action, and thus, fail to address the underlying unsustainable ideology, which may lead to inadequate solutions to the climate crisis, and future crises of sustainability. It is imperative that we address the unsustainability of the white commons, to preserve our planet, and therefore, we must take action to end white supremacy especially in our higher education system so that there are scholars, especially those in the STEM fields equipped with the knowledge to dismantle the unsustainable prioritization of the white commons over the commons, and create a transportation system that is part of the broader commons rather than the white commons.

## Part II: Plan of Action

To carry out this change at my institution, the University of Minnesota, so that the future graduates will be equipped to dismantle the white commons, and bring forth a sustainable sustainability, it mostly means working with the College of Science and Engineering Diversity and Inclusion alliance to impart the importance of equitable education on Professors, working with student powers such as the Minnesota Student Association to pressure admissions to take action to promote sustainability through ridding the institution of its white supremacy, and creating strong transfer pathways between black-frequented community colleges such as Saint Paul College and Minneapolis Community and Technical College into the University of Minnesota College of Science and Engineering through working with those community colleges, and also examining biases in existing transfer pathways, such as the manner that whiter schools such as Century College and Normandale College have better transfer pathways to the University of Minnesota's College of Science and Engineering, and fostering a sense of community among students in the College of Science and Engineering. The benefits of doing this would come about both in the direct benefits that working on the first three of the five horizons would offer broadly increasing, human, intellectual, and social capital, from which I believe would arise the capacity to dismantle the white commons and bring forth sustainable sustainability. A successful plan would have all students, especially black students in STEM able to pursue their engineering degree to such an extent that they can compete toe to toe with white students for graduate-level positions in those fields. For that you are generally looking at a percent success rate, how many students go through these levels of academia and are able to pass through them when they want to, but also, I think it's hard to want anything when it objectively is a miserable endeavor, so, a secondary measure of how many people want to pursue educational achievement such as graduate school would also be good. Having the percentage for marginalized students match the percentage of non-marginalized students is ideal, but that information alone will take advocacy work to gather in any reliable capacity.

Doing any of this is much larger than the scope of this class, luckily, I've already accidentally done parts of this. I have been working with the Diversity and Inclusion alliance to point out the manner in which transfer students are excluded, this is where I have made the most progress, but mostly in the form of micro changes that only I can see.

Working with the Minnesota Student Association to bring forth change is challenging, I worked with the Minnesota Student Association in 2018 to attempt to do just that, and I found that there are some destructive feedback loops, the Minnesota Student Association gets its power from an agreement with administration to tell them what they do before they do it, meaning, that MSA's power is strictly limited to getting into the room with administrators, and other than that, it can be an active hinderance, because it means telling administration what you are doing, so if administration disagrees with you, such as with the rename and reclaim project that MSA has been working on for from time to rename the student union building, it can actually mean such changes take significantly longer. MSA does have significant media power, but by utilizing someone else's media power, such as the Minnesota Daily, or strange sources of media power, such as UMN Memes for Frozen Northern Teens, one can make much more changes.

Professor David Orser in the College of Science and Engineering is the author of most of the major Electrical Engineering labs, which are the courses that generally have the largest trouble transferring from community colleges to the University. I worked with him over the summer to make sure that these formative Electrical Engineering labs were more friendly and welcoming to incoming transfer students, and also attempted to email key faculty at my home institution, such as Professor Pam Schumacher about those changes in curriculum, as transfer articulation is usually about curricular matching.

A major challenge that the University of Minnesota faces in increasing transferability is that at these institutions of color, Saint Paul College and MCTC, colleges are focused on developing curriculums that will either get jobs or transfer, and so the University of Minnesota College of Science and Engineering's low acceptance rate for transfer students, especially the transfer students of color which these institutions primarily serve, means that these institutions, with limited resources, prioritize institutions which care more about giving these students academic opportunities, such as Metro State. MCTC and Metro State however, do not have engineering programs, engineering programs are expensive to create and run, and because these institutions largely graduate students of color, whom have lower rates of matriculation and of pay in their career, and because these institutions are in the cities, which have higher expenses relating to land than their suburban relatively white counterparts, Century College and Normandale. I hypothesize that these institutions do not have the funding to start an engineering program. Saint Paul College, which has an engineering program, has only managed to start its

engineering program fairly recently, and is very poorly resourced compared to comparative programs at Century College and Normandale College. You could get money to develop programs at these institutions, but with a relatively conservative state legislature, and limited philanthropic funds earmarked for the purpose, my capacity to help is limited. If one were to convince faculty at Metro State and MCTC to develop engineering programs, and then pull funding for Metro State, MCTC, and Saint Paul College out of engineering advocacy organizations, such as IEEE, SWE, NSBE, Project Lead The Way, and industry sources such as 3M, Boston Scientific, and other engineering fortune 500 companies in the Twin Cities, and work directly with the University of Minnesota, or around the University of Minnesota by creating laws during a more liberal legislative session, in terms of earmarking seats within the College of Science and Engineering for students from these institutions, so that these institutions are motivated and economically able to keep their articulation agreements with the University of Minnesota. That is within the scope of what I can plan, and outside of the scope of what I can do, realistically, as an undergraduate college student who is also trying to get a degree in Electrical Engineering.

In terms of creating community, as an autistic person I feel uniquely ill suited to the task, but regardless, I have created the Electrical and Computer Engineering Discord, to connect students to each other, which other more sociable people such as Melissa Wenthin have made homely to some. There are students who could conceivably become faculty someday, such as Arnav Solanki of the UMN IEEE, and Farris Al-Humayani of the UMN Solar Vehicle Project who are doing much better work just by breathing, and I have attempted to replicated their work in my capacity as an officer of oSTEM, Out in Science, Technology, Engineering and Math, to no avail.

Ultimately, the largest barrier that I have to achieving any of this, is my existence as Amethyst O'Connell, I am white, so I cannot see the force that I am fighting, like the person blindfolded and going after the pinata with a bat, my ability to see the change I've made is limited to the concrete and the measurable. I'm autistic, I have a limited capacity to recruit people who are not also autistic as allies, and a limited capacity to stay organized and accomplish things in a timely manner. I am graduating (hopefully) eventually, and planning on entering more direct sustainability actions (or given my pace of completion, entering sustainability *reactions*.) My ability to succeed rests entirely on my ability to counter my flaws long enough to assemble the avengers to take over: to be Nick Fury, use my recognition of what must be done to find people capable and willing to do it.

## REFERENCES

- [1] Bledsoe, A. The primacy of anti-blackness. *Area*. 2019; 00: 1–8. <https://doi-org.ezp2.lib.umn.edu/10.1111/area.12599>
- [2] Locher, F. (2013). Les pâturages de la Guerre froide : Garrett Hardin et la « Tragédie des communs ». *Revue d'histoire moderne et contemporaine*, no 60-1,(1), 7-36. <https://www.cairn.info/revue-revue-d-histoire-moderne-et-contemporaine-2013-1-page-7.htm>.
- [3] Ostrom, E. (1990). *Governing the commons: The evolution of institutions for collective action*. Cambridge [England] ; New York: Cambridge University Press. Retrieved May 4, 2020, from <https://digitalrepository.unm.edu/cgi/viewcontent.cgi?article=1848&context=nri>
- [4] Sharpe, B., A. Hodgson, G. Leicester, A. Lyon, and I. Fazey. 2016. Three horizons: a pathways practice for transformation. *Ecology and Society* 21(2):47. <http://dx.doi.org/10.5751/ES-08388-210247>
- [5] Hsu, Tai-Ran. (2013). On the Sustainability of Electrical Vehicles. <https://arxiv.org/ftp/arxiv/papers/1311/1311.6015.pdf>
- [6] Knobloch, F., Hanssen, S., Lam, A. et al. Net emission reductions from electric cars and heat pumps in 59 world regions over time. *Nat Sustain* (2020). <https://doi.org/10.1038/s41893-020-0488-7>
- [7] Banza Lubaba Nkulu, C., Casas, L., Haufroid, V., De Putter, T., Saenen, N. D., Kayembe-Kitenge, T., Musa Obadia, P., Kyanika Wa Mukoma, D., Lunda Ilunga, J. M., Nawrot, T. S., Luboya Numbi, O., Smolders, E., & Nemery, B. (2018). Sustainability of artisanal mining of cobalt in DR Congo. *Nature sustainability*, 1(9), 495–504. <https://doi.org/10.1038/s41893-018-0139-4>
- [8] Frank, Ryan. (2020). *Playing the Game: Leopold II's Foundation of the Congo Free State*. Retrieved May 4, 2020, from [https://www.researchgate.net/publication/28626282\\_Playin\\_g\\_the\\_Game\\_Leopold\\_II's\\_Foundation\\_of\\_the\\_Congo\\_Fre\\_e\\_State](https://www.researchgate.net/publication/28626282_Playin_g_the_Game_Leopold_II's_Foundation_of_the_Congo_Fre_e_State)
- [9] Biography.com (2020). Elon Musk Retrieved May 4, 2020, from <https://www.biography.com/business-figure/elon-musk>
- [10] Dubow, S. (2015). Racial Irredentism, Ethnogenesis, and White Supremacy in High-Apartheid South Africa. *Kronos*, (41), 236-264. Retrieved May 4, 2020, from [www.jstor.org/stable/43859441](http://www.jstor.org/stable/43859441)
- [11] UMN, *Beneath The Surface: A Snapshot of CURA's Gentrification Interview Data*. (2018). Retrieved May 4, 2020, from <http://gentrification.umn.edu/sites/gentrification.dl.umn.edu/files/general/frogtown-2-23-18.pdf>
- [12] Aşıcı, A.A. and Bünül, Z. (2012), Green New Deal: A Green Way out of the Crisis?. *Env. Pol. Gov.*, 22: 295-306. doi:10.1002/eet.1594
- [13] Bergquist, Parrish and Mildnerberger, Matto and Stokes, Leah, *Combining Climate, Economic, and Social Policy Builds Political Support for Climate Action in the US* (October 29, 2019). Available at SSRN:

<https://ssrn.com/abstract=3477525> or  
<http://dx.doi.org/10.2139/ssrn.3477525>

- [14] Kendall, Frances. (2002). Understanding white privilege Retrieved May 4, 2020, from <https://www.cpt.org/files/Undoing%20Racism%20-%20Understanding%20White%20Privilege%20-%20Kendall.pdf>
- [15] Iloh C., Toldson I. (2013). Black Students in 21st Century Higher Education: A Closer Look at For-Profit and Community Colleges (Editor's Commentary). *The Journal of Negro Education*, 82(3), 205-212. doi:10.7709/jnegroeducation.82.3.0205
- [16] Strayhorn, T. L., Long, L. L., Kitchen, J. A., Williams, M. S., & Stenz, M. E. (2013). Academic and Social Barriers to Black and Latino Male Collegians' Success in Engineering and Related STEM Fields. , (). Retrieved from <https://commons.erau.edu/publication/295>