

THE HEGEMONY OF AUTOMOBILITY: IMPLEMENTING CYCLING
INFRASTRUCTURE IN A POLITICIZED SPACE

by

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AUTHOR'S DECLARATION

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ABSTRACT

The implementation of cycling infrastructure has been argued as a means to increase the overall mode share of cycling in communities. However, the implementation of such infrastructure has been fraught with political contentiousness across North America. In this paper, we interview ten municipal planners and engineers in the Greater Toronto and Hamilton Area, in order to determine how they implement cycling infrastructure in the face of political opposition. We find that there are four principal strategies used to secure the political support and ensure the construction of cycling infrastructure across the region: 1) piggybacking on public works projects, 2) using external grants and funding, 3) pre-emptively re-routing bicycling infrastructure, and 4) using a political champion. Through these strategies, we theorize that the politicization of cycling infrastructure is a result of the dominance of automobility in mobility, and that this politicization may lead to incomplete and less-than ideal cycling networks.

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INTRODUCTION

In recent years, municipalities and public agencies across North America have dedicated significant resources to the implementation of cycling facilities (Pucher *et. al.*, 2011). This policy emphasis is supported by scholarly evidence that has identified cycling as a healthy and sustainable alternative to the use of the private automobile (Dill, 2009; Fuller *et. al.*, 2013). Aggregate and disaggregate studies have found that there is a statistically significant relationship between the presence of bicycling infrastructure and levels of bicycling (Dill and Carr, 2003; Dill, 2009; Moudon *et. al.*, 2005). Despite proven health, congestion, and emissions benefits of cycling; the implementation of cycling infrastructure has been fraught with political contentiousness.

Past attempts to implement bicycling infrastructure on Burrard Street Bridge in Vancouver, on Bloor Street in Toronto, and on Prospect Park West in Brooklyn, NY have shown that bicycling infrastructure creates overt political debates (City of Toronto, 2017; Siemiatycki *et. al.*, 2014). In order to understand why bicycling infrastructure proposals elicit such political debates, it is necessary to contextualize the infrastructure propositions within the broader hegemony of the politics of automobility. Existing research has acknowledged the hegemony of automobility in mobility practices in Western culture (Koglin, 2015). The concept of automobility arose from the unique combination of six components that generate the automobile's character of domination. According to Urry and Sheller (2000), automobility is: the quintessential manufactured object produced by the leading global firms; the major item of individual consumption after housing, which also serves to provide status and success; a powerful machinic complex that occurs through the car's linkages with other industries; the predominant form of 'quasi-private' mobility which has subordinated all other forms of mobility including walking and cycling; the dominant culture that sustains ideas of what constitutes 'the good life'; and the most important cause of environmental resource use resulting from materials and space required for manufacturing of cars and roads, as well as consequences of medical, air quality, social, and others. Moreover, automobility promotes values such as freedom, autonomy, individualism, and unfettered mobility, which are simultaneously values of classic liberalism (Walks, 2015a).

Ideas of automobility arose as researchers sought to understand how distinct forms of mobility, in particular the automobile, had become embedded in society (Wells and Xenias, 2015). Research has consistently shown that significant portions of the population globally are intrinsically linked to the automobile and the ideals it supposedly purports (Sheller, 2004; Wells

and Xenias, 2015). One of the key facets of automobility is the domination it subjects over society; one such aspect of this involves the political system. The dominance of automobility does not occur in a silo and is in fact supported by large portions of the populations. It has been said that automobility creates popular political demands for policies that continually entrench automobility in both the political and public realm.

It has been argued that since the formalization of the automobile as the dominant form of transportation, the bicycle has been in a battle for space against it. During the interwar period, the upper and upper-middle classes shifted away from the bicycle, and began to entrench themselves in the automobile (Oldenziel and de la Bruheze, 2011). It is in this time that the bicycle began to be viewed as a means of mobility for the lower classes and as a toy for children, while the automobile and all it represented became something to aspire for. Despite the active role that cycling enthusiast organizations played in the extensive reorganization, widening, and paving of streets; they were soon pushed off the roads and aside by the automobile (Furness, 2010). In the 1960s, bicycling came to be viewed as a political symbol in opposition to automobility and came to be linked to counter-culture and was socially constructed as a greener non-polluting alternative to the automobile (Walks *et. al.*, 2015). Moreover, in the same period, the bicycle became intertwined with various political agendas and philosophies including anarchism, Marxism, left-liberalism, and eco-socialism, which stood and continues to stand in opposition to the dominant political form in North America (Furness, 2010; Horton, 2006; Walks *et. al.*, 2015). Furthermore, Furness (2010) theorized that bicycling is fundamentally political in nature given that it represents a commitment to change, both in the way people think and act. Any move to take space away from the automobile may be seen as an affront to automobility, while decisions to promote bicycling may elicit notions of counter-culture that run-in opposition to the overarching political system.

This research seeks to examine how municipal planners/engineers implement cycling infrastructure, within the dominant context of automobility and politicization. Further, it looks to explore how the potential politicization of cycling infrastructure may impede the ability of municipal planners/engineers to implement such infrastructure. This research was conducted within the context of the Greater Toronto and Hamilton Area (GTHA) in Ontario, Canada, however, where possible we will generalize our findings based on the similar municipal and jurisdictional nature of municipalities throughout North America. Existing literature has explored how major transportation infrastructure is implemented in North America, with a focus on road

and highway infrastructure. These works have examined both the perspectives of politicians and those of state and regional officials. However, little research has been conducted on small local-level transportation infrastructure projects such as cycling infrastructure, and the research that does exist, does not explore the role of local non-elected officials such as planners and engineers. This research will inform practitioners and researchers regarding how automobility affects the abilities of municipal planners and engineers to implement cycling policy goals. In addition, it will highlight how these municipal officials develop strategies to garner political support for what can often be politically contentious cycling projects. This knowledge may be expanded beyond cycling to include other active transportation infrastructure projects.

LITERATURE REVIEW

Scholarly research exploring the politicization of bicycling infrastructure is limited. For example, Siemiatycki *et. al.* (2014) discussed the political impediments of implementing cycling infrastructure along Burrard Street Bridge in Vancouver, BC, Canada. In this case, a cycle lane was implemented on the bridge on a trial basis in 1996, however public outcry caused the 6-month trial to end prematurely after 7 days. In 2008 during his mayoral campaign, Mayor Gregor Robertson ran on a campaign to implement cycling lanes on the bridge on a one year trial basis. After winning the election, the lanes were installed in 2009, and after significant increases in cycling along the corridor, the lanes were made permanent in 2010. The article examines the political strategies and considerations made by politicians to support investment in bicycling infrastructure. The key strategy employed by Robertson was that the bike lanes on the bridge would be a core wedge issue in Vancouver, and would galvanize his core support base and lead them to go to the polls on election day. Bicycle policy thus functioned as a source of political divisiveness which was expected to mobilize voters to participate in municipal elections (Siemiatycki *et. al.*, 2014). Robertson's cycling lanes can also be interpreted within a broader framework of the politicization of the infrastructure by positioning the literature within the context of automobility. Additionally, Burrard Street bridge was a highly public campaign promise, and after the successful election of Mayor Robertson, it was evident that the project would move ahead. Given that the publicity of the project, it removed the role of the local planners and engineers to bring proposed projects to elected officials. For this reason, the Burrard Street Bridge example, while significant, does not represent the typical process of implementing cycling infrastructure.

Research by Catillo-Manzano and Sanchez-Braza (2013) has shown that in Seville, Spain, one of the most significant risks to implementing new cycling infrastructure is that citizens may be politically opposed to the group that drives the policies to promote bicycling. In the case examined, it was shown that cycling has been intrinsically linked to the Communist Party, which causes opposition from members of the population who support different political views. The findings from this study are significant, however, they do not apply across North America, as not all municipalities hold local elections with candidates running under particular political parties. In North America, existing research has shown that implementing cycling infrastructure is difficult due to the fact that it is difficult for municipal officials to show that the infrastructure will make a difference in mode share, or that the infrastructure will solve any overarching transportation

problems (Krizek *et. al.*, 2009a). Furthermore, research has theorized that new cycling infrastructure tends to be implemented in areas where there is already considerable support for such infrastructure (Krizek *et. al.*, 2009b). In fact, Krizek *et. al.* (2009b) suggested that it is possible that this infrastructure is implemented because local residents have lobbied for it, thus minimizing political opposition to such a project. Krizek *et. al.* (2009b)'s findings are echoed by other studies that have suggested that cycling infrastructure is being implemented where demand currently exists, and therefore suggests that implementation does not lead to increases in bicycle mode share (Goodman *et. al.*, 2013; and Pucher *et. al.*, 2010)

Work by Piatkowski *et. al.* (2019) sought to examine what the challenges are to implementing active transportation infrastructure, specifically when deterring driving and enabling active transportation. Through their qualitative interviews, they identified four themes of challenges that municipalities are facing: leveraging opportunity in relation to receiving funding; shifting priorities away from recreational infrastructure to creating an active transport system; picking the most important battles when attempting to implement infrastructure by removing lanes of traffic; and attempting to move from quantity of infrastructure to quality of infrastructure. This work sheds light on the actions of municipal planners/engineers that our research seeks to explore, by determining that the receiving of funding helps to implement active transportation infrastructure, and that attempts to discourage driving are considered politically infeasible by municipal officials (Piatkowski *et. al.*, 2019). While Piatkowski *et. al.* (2019) explored some of the impediments to implementing active transportation by municipal officials, they did not contextualize their work within the broader theme of automobility, nor did they seek to examine directly how municipal officials act in light of the broader politicization of infrastructure. The authors identified that municipal planners/engineers pick their battles when implementing infrastructure, however, they did not explore how these battles were chosen and what methods were used in them.

However, there is a much broader literature examining factors that influence political decisions regarding larger-scale infrastructure projects, particularly regional roads and highways. Research conducted by Nyborg (1998) determined that decisions made by politicians in Norway regarding regional road infrastructure were influenced principally by the extent of local conflicts and business sector interests. In addition, Walden and Eryuruk (2012) examined local highway spending in North Carolina, USA and found that employment market conditions and a county's

relative vote in the last election for the state's governing political party had significant effects on the implementation of infrastructure in particular counties. These works provide insight into the political decision-making process in regard to infrastructure implementation, however, they do not examine the roles of non-elected officials.

Wachs (1985) found that when proposing new infrastructure, planners are mindful of the political realm that is responsible for final decision-making. He suggested that planners examine broader transit policymaking through a lens that recognizes both the economic/technical and political criteria for implementation. The author argued that this perspective held by planners led to a practical approach to transit policy decision-making, whereby planners favour incremental changes and not sweeping changes as they recognize that such changes would displace powerful political constituencies (Wachs, 1985). This work represents an early insight into the decision-making process for municipal planners.

Some existing literature has attempted to gain insights into the determinants of decision-makers' preference for particular infrastructure projects over other viable options. For example, McFadden (1976) examined how California, USA's Division of Highways decision-makers made highway route decisions. In his research, the author found that there was an emphasis on economic benefits versus costs, that local governments can significantly influence route choices, that political pressures outside of local government have a weak effect, and that political and public interest groups had little effect influencing the divisions decisions (McFadden, 1976). However, the research specifically focused on sixty-five routing decisions by the Division of Highways in the San Francisco and Los Angeles Districts between 1958-1966. Therefore, the findings from this study may not be generalizable to local-level decision-making regarding smaller projects such as bicycling infrastructure.

The existing literature to date is limited in scope and has little focus on bicycling and other local-level infrastructure projects. It has explored to varying degrees the political decision-making process of politicians for various infrastructure projects, and the considerations and processes that non-elected officials use for large infrastructure projects. While some literature to date has examined how local-level municipal planners and engineers implement infrastructure projects such as bicycling infrastructure, there has been little research regarding how local planners and engineers navigate highly politicized spaces to implement infrastructure and how this politicization impedes their abilities to proceed with recommended infrastructure projects.

LOCAL GOVERNANCE STRUCTURE IN ONTARIO AND BEYOND

In order to determine the generalizability of the findings of this research, it is important to understand how local governments are structured in the Province of Ontario, Canada, where the GTHA is situated, and how it is similar and dissimilar to local government structures across North America. Within Ontario, there are both two-tier and single-tier municipalities. Two-tier municipalities are made up of both an upper-tier and one or more lower-tier municipalities, which all have councils to provide decision-making (Government of Ontario, 2018). However, typically the upper-tier council is not elected, while the lower-tier is elected. In the two-tier municipality circumstance, both have the responsibility for cycling infrastructure implementation, with the upper-tier responsible for regional roads and the lower-tier for all local roads. Meanwhile, a single-tier municipality's council is elected and the council is responsible for all for all cycling infrastructure implementation decisions within the municipality's jurisdiction (Government of Ontario, 2018).

An additional factor influencing municipal decision-making in Ontario is that some of its 444 municipalities use a ward-based system to elect councils (133), while others use the at-large system (240) (AMO, 2019). There exists other municipalities that use a combination of both systems (40). Both the at-large and ward-based systems are found across North American municipalities. Within the context of infrastructure implementation, both systems have key considerations to understand, which may affect the ability of municipal decision-makers to implement contentious infrastructure. In the ward-based system, if the proposed infrastructure is located wholly within one councillor's ward, that councillor's particular support may be seen to be more important. Despite the location of the proposed infrastructure, all councillors would still vote on the proposal, and therefore the rest of the councillors can override the preferences of the one councillor. However, in the at-large system, all councillors share responsibility for the entire municipality, and therefore there are not infrastructure projects located wholly within only one councillor's jurisdiction.

In the GTHA, transportation infrastructure is shared between two significant stakeholders; the local municipalities and regional governments, and Metrolinx which is a provincially owned corporation. Metrolinx is responsible for regional transportation plans in the GTHA, which principally operates commuter rail and bus lines. The municipalities and regional governments are

responsible for local-level busses, road maintenance and construction (excluding highways), cycling and pedestrian infrastructure, and subways in the case of the City of Toronto.

In both Canada and the United States, local governments receive their power and structure through the individual provinces and states that they are found within. In both countries, the Federal government has no role in the structure and functioning of local governments. In both Canada and the United States, local governments elect their respective councillors, alderman, and other local-level representatives principally through the ward-based or at-large based systems. However, given that each province and state is unique, it is important to note that there exist differences between many local governments throughout North America. While responsibilities for funding and construction of transportation infrastructure varies widely across North America, the responsibility for the construction of bicycling infrastructure primarily rests in the hands of local governments throughout the two countries.

STUDY DESIGN

STUDY AREA

The study area for this research is the Greater Toronto and Hamilton Area (GTHA), which is located in the Province of Ontario, Canada and has a population of 6.954 million people (Statistics Canada, 2017). The GTHA is centered around the City of Toronto, which is a major urban centre and the largest city by population in Canada with 2.732 million inhabitants in 2016 (Statistics Canada, 2017). Other major cities found within the region include the City of Brampton (593,638 inhabitants), the City of Mississauga (721,599 inhabitants), and the City of Hamilton (536,917 inhabitants). The GTHA comprises of two single-tier municipalities (Toronto and Hamilton), four regional municipalities (Durham, Halton, Peel, and York) and 24 lower-tier municipalities. Of these 30 total municipalities, 19 use the ward-based system of governance while the remaining use either the at-large system or a combination of both.

The GTHA municipalities are tied together by a series of major highways and commuter rail lines, and suburban communities are now experiencing increased access to the City of Toronto due to renewed investment in transit networks. However, the area's rapid transit network is historically limited to servicing Downtown Toronto.

The policy context surrounding cycling in the GTHA and Ontario can be generalized as being supportive of the expansion of the existing cycling network. The province has released two action plans regarding cycling, the first in 2014 and the second in 2018. The most recent cycling plan, *#CycleON Action Plan 2.0*, called for: designing healthy, active and prosperous communities; improving cycling infrastructure; making highways and streets safer; promoting cycling awareness and behavioural shifts; and increasing cycling tourism opportunities (*Ontario Ministry of Transportation*, 2018). 118 municipalities in the province had received money for cycling projects as part of the Ontario Municipal Commuter Cycling (OMCC) program, which has since been cut by the recently elected Progressive Conservative government. Municipally and regionally, many local governments have dedicated cycling master plans, including but not limited to, Toronto, Mississauga, Hamilton, and the Region of Durham. Despite overarching supportive policy in the region, there continues to exist an impediment to the implementation of new cycling infrastructure.

DATA COLLECTION

A total of 10 municipal planners/engineers were recruited to participate in this qualitative research. Data was collected through semi-structured in-depth interviews, which consisted of open-ended questions based on an interview guide. The guide was designed to prompt participants to consider all the factors that influence their ability to implement cycling infrastructure, and to allow them to discuss the ways in which the political environment may or may not affect their ability to implement cycling infrastructure. The purpose of qualitative research is not to provide statistical generalization (Denzin and Lincoln, 2005; Onwuegbuzie and Leech, 2007). Instead, the study was designed to allow for analytical generalization, which permitted us to acquire deep insight within the specific context of the research. This specific context is that of cycling infrastructure implementation, within the governance structure of the GTHA.

Participants were recruited by sending emails to all 30 municipalities and regions in the GTHA in the fall of 2018. Emails were sent to local officials whom we knew had been involved in the implementation of new cycling infrastructure, from previous research, in every jurisdiction where possible. In jurisdictions where we did not have any previous knowledge of cycling infrastructure implementation, we directed emails to the local official whose title most closely resembled that of who would be responsible for cycling infrastructure. The emails described the scope of the proposed study, asked for voluntary participation, promised the participants' anonymity, and stated that the questions would ask only for answers from the participants' professional perspectives. After the first 30 emails were sent out, we received responses from 12 municipalities, with 7 opting to participate in the interview process. In December 2018, we sent follow-up emails to the 18 municipalities that we had not heard back from, once again describing the research and asking for voluntary participation. Of the 18 emails sent, we received 4 responses, resulting in 3 additional participants. Ultimately, of the 10 participants interviewed, 4 were previously known to us, while the remaining 6 were new contacts. Interviews took place in the fall and winter of 2018 and 2019. The professional positions of those recruited included, but was not limited to: Senior Planners, Senior Transportation Planners, Engineering Managers, and Active Transportation Managers.

Interviews were designed to last 45min-60min, however interviews were booked for 90min to ensure the participants had enough time to discuss all factors they felt were relevant. During the interviews, participants were asked several general questions regarding the processes and policies

in place to implement cycling infrastructure in their region/municipality. Participants were then asked to describe the typical implementation process, before being asked to walk us through an example of cycling infrastructure that had been implemented during their time at the region/municipality. Finally, participants were asked more pointed question in regards to how important the political process, political champions, etc. were to the implementation process. As the interviews were semi-structured, follow-up and unique questions were asked throughout the interviews. Prior to conducting the interviews, we asked all participants if they were comfortable having the interviews recorded, in order to facilitate reporting. Of the 10 participants, 8 allowed for auto-recording while the remaining 2 did not. For those that did not, we took detailed electronic notes during the interview, and frequently asked participants to repeat answers for clarity and to ensure accurate detailed quotations.

QUALITATIVE ANALYSIS

This research was constructed with aim of developing and building a substantive understanding of the guiding research questions, and to examine the resulting findings within the broader theorization of automobility. However, other than this broad theoretical context, there were no pre-determined hypothesis that we were attempting to test. Therefore, the purpose of the interviews in this research were inductive in nature. This was necessary given the lack of existing knowledge in the field of linkages between cycling infrastructure and automobility. With the interviews, we aim to provide deep insights into how cycling infrastructure is implemented at the municipal and regional level. While generalizability of our findings may be found across other forms of active transportation infrastructure, it is not the goal of this study. We have sought to provide the literature with a deep understanding of how cycling infrastructure in particular is implemented in the context of automobility.

In order to build an understanding of our research question using inductive methods, we used a thematic analysis. The thematic analysis allowed us to identify and analyze themes that appeared within our qualitative data. Thematic analysis is commonly applied in qualitative transportation research (Adorno *et. al.*, 2018; Ashmore *et. al.*, 2018; Bean *et. al.*, 2008; and Xylia and Silveira, 2018). In this study, we reviewed the transcripts from the interviews to first categorize and determine factors that were related to the research questions. Second, we analyzed the categories and factors to determine how they may be linked or have systematic relations, thus

condensing the number of categories and factors. Finally, we took the emerging patterns and reduced their complexities to produce tightly connected and descriptive responses.

RESULTS AND DISCUSSION

The interviews conducted sought to determine how municipal planners/engineers implement cycling infrastructure, within the overarching context of automobility. In addition, we looked to examine how the politicization of cycling infrastructure is impeding planners/engineers from implementing such infrastructure. Through the 10 open-ended interviews four key themes emerged as strategies by which municipal planners and engineers attempt to implement cycling infrastructure, in light of the politicized environment. Two or more of these strategies were discussed by every participant during the interview process, with each single strategy having been discussed by at least four different participants each. These strategies were always combined with multiple overarching components that made up any infrastructure or transportation ask from council.

For the purposes of this study, a ‘strategy’ is an overarching means by which a municipal official uses to implement active transportation plans, that are unique to transportation and cycling issues. These strategies are implemented as a means to garner political support for cycling infrastructure, which is required despite the inclusion of such infrastructure in active transportation plans. Meaning, that these strategies are unique to considerations surrounding automobility. Strategies identified in this study are: piggybacking on public works projects; using external grants and funding; pre-emptively re-routing bicycling infrastructure; and using a political champion.

Components on the other hand, are means that municipal officials commonly use to gain support from political officials, and are by no means unique to transportation or cycling infrastructure in particular. Components include: building a business case; proving there is a need; public consultation; inclusion in a master-plan; environmental assessments; and more. These components will not be discussed in this research, as they do not vary in response to concerns regarding automobility, and are in fact constant across all planning initiatives taken by city staff. Throughout the interviews, all participants acknowledged that cycling infrastructure support amongst council members was the most important factor in getting new cycling infrastructure built. Furthermore, the support varies over time, depending on each elected council. Participants additionally noted, that the vast majority of opposition to cycling infrastructure came from councillors who had concerns regarding the loss of road space to vehicles.

PIGGYBACKING ON PUBLIC WORKS PROJECTS

The most common strategy employed by municipal officials to construct new cycling infrastructure was through existing and planned road resurfacing, widening, and construction projects, which were under the purvey of the Public Works Department/Division. In this situation, planners/engineers would advocate that new bicycle infrastructure should be added to any particular street, given that it was being resurfaced, widened or built as part of an existing public works project. This allows planners and engineers to implement cycling infrastructure that is called for in municipal plans, without significant added costs and without requiring dedicated cycling funding. A Transportation Planning Engineer interviewed underlined this finding by stating:

“When it comes to implementing cycling infrastructure we’re pretty much piggybacking on our capital works budget where we’re, for example, resurfacing a section of street A...”

It was found that this means of implementation was essential, particularly in communities where there was no dedicated funding for new cycling infrastructure. In addition, it was used frequently to implement non-priority infrastructure, that was identified in active transportation plans, but slated for construction at a later date. A Transportation planner interviewed stated that:

“Obviously if the road is getting re-done...even though we realize it’s not urgent we would still look at [as] an opportunity to implement the cycling facility...”

This form cycling infrastructure implementation was discussed by every participant in the interviews, however it was more prevalent in certain jurisdictions. While such projects still required political support, it was found that adding in cycling infrastructure during road works was simple and without political contestation if the implementation did not require the loss of a lane of traffic or vehicle parking spots. However, if the infrastructure resulted in the loss of space for vehicles, piggybacking on the public works projects did not subdue political tensions. The lack of opposition when implementation does not interfere with vehicles, demonstrates that the automobile and automobility continue to press against the implementation of cycling infrastructure. Planners and engineers interviewed were acutely aware that the easiest way for them to implement new infrastructure was to ensure that the priority of the automobile was maintained. Through these findings it is possible to theorize that it is not bicycle lanes themselves that are politically contentious, it is the automobile that is political. Participants were clear in stating that as long as automobiles were not being deterred, the implementation of new cycling infrastructure

lacked a political nature. However, when automobiles and automobility were challenged, for example through the loss of a traffic lane, the infrastructure became political.

While Furness (2010) theorized that bicycles and their related infrastructure were perceived as political due to their representation of change; our findings suggest that municipal planners and engineers find this politicization occurs through challenges to automobility, rather than the any social representations of the bicycle.

USING EXTERNAL GRANTS AND FUNDING

A majority of participants indicated that receiving external grants or funding from the Province, the Federal Government, or a combination of both facilitated the construction of new cycling facilities. According to participants, projects receiving external funding or grants were able to be built with less than normal opposition, despite still requiring political support to implement projects with this funding. These projects generally allowed the municipality/region to improve transportation options with little to minimal costs to the local government. A senior planner interviewed described external funding as a means to garner political support:

“Probably the biggest way for staff to pursue projects without political support is if we are able to obtain external funding for the project. Not necessarily for the entire project but for at least a portion of project...”

This statement that receiving funding for a least a portion of the project helps in creating political support for it, is consistent with the findings made by Piatkowski *et. al.* (2019), as well as findings by Weber (2017) which suggest that external funding opportunities are important to implementing cycling infrastructure. Piatkowski *et. al.* (2019) had found that external funding serves as means to ‘get people to the table’ to discuss active transportation infrastructure projects that were previously not feasible. A Senior Transportation Manager interviewed in our study confirmed this by stating that:

“One key thing that changed a lot of timelines was the Federal funding that was given...there were very specific projects that were eligible for it...it advanced projects that would not have been otherwise.”

It is possible that the primary reason that external grants and funding are a successful means for building new cycling facilities, is that it is money that can only be used for reasons prescribed in

the grant/funding, meaning that the money may only be allowed to be used for active transportation projects. In the application for these funds, planners and municipal officials will have indicated which projects they want to implement. If the municipality/region does not proceed with the proposed active transportation projects, the money may be lost. Participants indicated that this made it easier to get elected official approval, as the politicians did not want to be seen as refusing ‘free’ funds for improvements to the community. In addition, these external grants and funds may be successful in implementing new projects given that they provide municipal planners and engineers an opportunity to discuss the potential projects openly with politicians, as the funds ‘bring people to the table’, as found by Piatkowski *et. al.* (2019).

However, participants noted that the none of the projects that received external funding led to the loss of road space to private vehicles. It appears through the course of our interviews, that the preference for the automobile and the opposition to anything that discourages automobility, lessens when the money being spent is not from the municipality itself. In this case, it appears that politicians may find it difficult to use their constituents tax dollars to discourage automobility and create change. This may be the result of an underlying belief that their voters overwhelmingly support the principles of automobility, which takes its roots in classic liberalism and typically purports prudence in the spending of public tax dollars. Meaning that if politicians were to use tax dollars to combat automobility, they would be seen as doing a double disservice to their constituents.

However, when one of the two disservices is no longer occurring (e.g. using an external grant), the politicians may find themselves having to make decisions between using ‘free’ funding or continuing to support automobility principles, which may both be seen as serving in their constituents’ best interests. While considerations around the automobile are still present and taxpayer dollars are still used, politicians may believe that they can convince their constituents that it is not in their best-interests to pass up ‘free’ funding to better their community. This highlights a potentially interesting relationship between automobility and tax dollars, which should be further explored.

PRE-EMPTIVELY RE-ROUTING BICYCLING INFRASTRUCTURE

Municipal planners/engineers on occasion engage in the pre-emptive re-routing of particular cycling infrastructure options as a response to known or perceived political opposition.

This was found to be common during the process of creating transportation plans that lay out where future cycling infrastructure shall be implemented; however, it also existed in the implementation of the plan whereby alternates to the plan were suggested in light of potential opposition. In these cases, when municipal planners and engineers are determining where to propose new cycling infrastructure, rather than proposing it goes along the ‘best’ street for purposes of connectivity, usage, and urban design, they propose the infrastructure go along an alternate route. The proposal on the alternate route may still involve the loss of space for vehicles, however the idea is that the alternate street is less used or viewed has less significant for drivers and politicians. This is done given that the municipal planner/engineer perceives or knows that there will be significant political opposition to building cycling infrastructure along their preferred route, due to lane removal, parking removal or other considerations. Automobility and the dominance of the automobile in this scenario, interferes with the abilities of municipal planners/engineers to implement infrastructure where they deem it most appropriate. This situation was highlighted by a municipal Project Manager who stated that (road names have been removed to preserve anonymity):

“X has a lot of on-street parking and there would be a huge backlash – but this was not the same with Y and taking away a lane there would be a better option. It would avoid a political quagmire and the rationale was that it was only a block away from X which is where people would like to end up.”

This statement is consistent with the findings made by Piatkowski *et. al.* (2019) who found that municipal officials persistently ‘pick their battles’ when implementing new active transportation infrastructure. Municipal planners and engineers interviewed explained that they do not always pre-emptively re-route projects, and that it depends on whether they think they can win over council with their more controversial plan or not. This finding is consistent with research by Wachs (1985), who theorized that planners are mindful of the political realm when making decisions. Through our interviews we found that the decisions of whether to ‘pick the battle’ or not can depend on which particular councillor represents the ward that the project will be located in. An Active Transportation Planner interviewed underlined this finding by stating that:

“...in the creation of the [cycling] plan...they were consulting councillors in the development of it [the cycling plan] you can see on the map that some areas have less [proposed cycling routes] than others and I think that some of that aligns with which councillors were where...staff are a little hesitant to go down a path that they think is likely to get shut down.”

In municipalities where councillors are elected using the at-large system, rather than the ward-based system, decisions of whether to ‘pick the battle’ or not appeared to be made based on the individual merits of each project, and where the municipality’s or region’s plan called for the infrastructure to be located.

This strategy came up particularly in larger municipalities with denser populations in the core, which is likely due to the constrained right-of-way along particular arterial streets. However, when the right-of-way is not constrained, as is more often the case in less dense municipalities, the implementation of cycling facilities does not result in the loss of space for automobiles. When this is the case, there is often no need to pre-emptively re-route the proposed cycling facility. Similarly to our findings in cases of ‘public works road resurfacing, widening and construction’, the fact that municipal officials only consider pre-emptively re-routing when there will be a deterrent to vehicles, suggests that the political nature of cycling infrastructure is a result of automobility. Moreover, this finding raises the distinct possibility that cycling networks are not being built where municipal planners and engineers believe they should be located, directly as a result of automobility causing them to pre-emptively re-route projects.

USING A POLITICAL CHAMPION

In all cases, participants stated that the ultimate factor to the success of an implementation proposal, is finding a political champion on council. These political champions in most cases do not support the hegemony of the automobile on municipal and regional streets, and are therefore not adhering to and promoting automobility. A Transportation Technologist interviewed stated that:

“[It is] absolutely critical to have a political champion’s support when trying to build a cycling network.”

The belief that a political champion on council was a political necessity was emphasized by multiple participants, including a Transportation Manager who stated that:

“You need an advocate on the project before it gets approved...usually you need someone on council to be champion...You need a champion on council to push the agenda forward.”

Participants indicated that this political champion is most useful in municipalities that use a ward-based system; however only when the proposed project is in the political champion’s own

ward. In these circumstances, it provides the political champion with leverage over other politicians on council, given that the effects of the project will mostly be felt in their ward. This is significant as it represents the possibility that cycling infrastructure is being implemented in neighbourhoods where there is existing support and advocacy for cycling. In these areas of support and advocacy, the effects of automobility are less pervasive, and it is easier for municipal officials to receive political support for cycling projects that deter automobiles. This is consistent with existing research that has shown that new cycling infrastructure is typically implemented in areas where there is such existing support (Krizek *et. al.*, 2009b; Goodman *et. al.*, 2013; Pucher *et. al.*, 2010).

While the political champion is most useful in ward-based systems, it does not lessen the need for a political champion the at-large system. In the at-large system a political champion can still advocate on behalf of the project at council meetings, which can help to build broad support.

CONCLUSION

In this study, we interviewed 10 planners/engineers from across the Greater Toronto and Hamilton Area to determine how they implement cycling infrastructure within the context of politicization and automobility, while also exploring how such politicization impedes their abilities to implement cycling infrastructure. Our interviews have shown that municipal planners/engineers rely on four principal strategies to navigate the political influences of municipal/regional councils, in order to build new cycling infrastructure. Without any particular order of preference, these officials typically rely on one of the four following means to attempt to get cycling infrastructure approved: 1) piggybacking on public works projects, 2) using external grants and funding, 3) preemptively re-routing bicycling infrastructure, and 4) using a political champion.

The findings from our interviews have shown that the politicization of cycling infrastructure likely occurs as a result of automobility. Any infrastructure seen to deter automobile usage may be viewed by politicians as an attack on the perceived principles of their constituents. This is consistent with theorizations that automobility is the dominant form of mobility in North America (Koglin, 2015; Urry and Sheller, 2000; Walks, 2015a). While existing research had theorized that it is the bicycle that is political due to its associations with environmentalism and left-leaning political ideologies (Castillo-Manzano and Sanchez-Braza, 2013; Furness, 2010; Horton, 2006), it may in fact be the automobile that is political. The bicycle only becomes political when pushed in opposition of the dominant automobile complex.

We have also made findings consistent with Piatkowski *et. al.* (2019) and Weber (2017)'s research in that external grants and funding can serve as a successful means to implement active transportation infrastructure, and that municipal officials 'pick their battles' on these infrastructure projects. However, we have shown that these findings must be contextualized within the broader theory of automobility. Automobility both leads to confrontations in the ideals and decisions made by politicians when they elect to use or not use external grants and funding to implement cycling infrastructure; and it may result in the implementation of non-ideal routes and networks of cycling infrastructure due to the fears of municipal officials to suggest projects that run against the automobile.

Finally, we have made findings consistent with existing research (Goodman *et. al.*, 2013; Krizek *et. al.*, 2009b; Pucher *et. al.*, 2010) that suggests that bicycling infrastructure may ultimately be principally implemented in neighbourhoods where there is existing demand, due to

political constraints. Overall our findings suggest that bicycling infrastructure is being implemented where it causes the least disruption to the automobile and where there is existing constituent demand and advocacy.

We have found that the difficulties of implementing cycling infrastructure at the local municipal level is inherently linked to the politics of automobility. Our interviews with planners and engineers have shown that it is the overarching dominance of automobility and the concerns of politicians to remove space for automobiles that has led to the politicization of cycling infrastructure. Existing research has shown that automobility is the dominant form of mobility in North America, however it had not yet been linked to difficulties in implementing non-automobile serving infrastructure.

As a result of our findings, there is a potential that the ongoing policy emphasis on cycling may not lead to the creation of robust and complete cycling network as desired by many transportation planners and community advocacy groups. Additionally, it may not lead to the construction of infrastructure in neighbourhoods where there is potential for large shift in mode share. We have found that by using political champions and pre-emptively re-routing bicycling infrastructure to ensure the political support of projects, that infrastructure may be the most successful in areas with existing support, thus echoing the findings of other scholarly research (Goodman *et. al.*, 2013; Krizek *et. al.*, 2009b; Pucher *et. al.*, 2010). This also may serve as part of the rationale as to why the implementation of new cycling infrastructure may not result in changes in mode share (Nkurunziza *et. al.*, 2012; Parkin *et. al.*, 2008; Song *et. al.*, 2017). Therefore, despite active transportation plans to implement complete cycling networks, political support may hinder any efforts to implement such plans.

The automobile is much more than simply a vehicle to travel, it represents a culture and a mindset that many politicians believe most of their constituents share. Planners and engineers must consistently navigate a space dominated by private automobiles and have shown in some instances to sacrifice connectivity or ideal locations for cycling infrastructure in order appease the ongoing dominance of the automobile. As long as the automobile remains seen as more than simply a mode of transportation, it will be difficult for municipal planners and engineers to implement cycling infrastructure that they deem ideal and that creates meaningful change in mode share.

Our research was based in the GTHA and focused on the implementation of cycling infrastructure within this defined area. However, the findings in relation to cycling infrastructure

are likely to be applicable to all areas in North America, with similar organization structure in relation to the responsibility for bicycle infrastructure implementation.

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