

Car pride or bus pride? It's all in the branding

A conversation with MIT Energy Initiative researcher Joanna Moody on shifting toward more sustainable travel behavior

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Laura: Today, I'm with Joanna Moody at MIT, specifically the MIT Energy Initiative. Welcome Joanna.

Joanna: Thank you for having me.

Laura: You recently started working as a Research Program Manager here at the MIT Energy Initiative. Could you tell us a little bit about your role here?

Joanna: Sure. So the MIT Energy Initiative has just launched its newest Low-Carbon Energy Research Center that's focused on the transportation of people and goods. It's called the Mobility Systems Center. And as the Research Program Manager of this new Center, I'm responsible for monitoring our research projects and supporting cross-team communication and collaboration within the research projects in our portfolio. I'm also a lead investigator on one of the research projects that's looking at how mobility-as-a-service might disrupt the existing paradigm of private vehicle ownership.

I was also a coordinating author of *Insights into Future Mobility*, which is the final report of a three-year study on Mobility of the Future, which was focused on trends in the global market for light-duty vehicles, or cars and light-trucks. And the study analyzes how different factors, including technological innovation, public policy, and consumer preference could affect these future trends in the light-duty vehicle market.

Laura: Could you tell us a bit about the overlap of transport and energy, which is obviously a focus of the report, and some of the findings or recommendations?

Joanna: Sure. When it comes to the overlap of transportation and energy and climate, we looked at alternatives to gasoline- or diesel-powered internal combustion engine [vehicles], these are the typical or conventional vehicles that most people drive on the roads today. And alternatives to these could include things like plug-in hybrid vehicles, pure battery-electric vehicles, or even hydrogen fuel-cell electric vehicles. And so one of the things that the study does is look at the, sort of, technical and economic and emissions tradeoffs across these different types of vehicles. And what we really found is that we are still very much in the early stage of any transition towards a low-carbon mobility system.

And so battery-electric vehicles, fuel-cell vehicles, all have a role to play when you are talking about larger scale transportation decarbonization and efforts to reduce air pollution. And so because we are in this early stage, it's also a fairly fragile stage that's really very sensitive to cost barriers. Still battery electric vehicles (and fuel-cell vehicles even more) are more expensive to purchase than a traditional internal combustion engine vehicle. And even if these cost barriers can be overcome, then there become issues of range anxiety or the availability and convenience of locating the charging or the fueling infrastructure that you would need to be able to continue getting where you need to go with these vehicles.

Laura: And that's what you mean by range anxiety?

Joanna: Exactly. So range anxiety is really about: "I'm getting in my vehicle, am I going to be able to get all the way to where I need to go either on my current charge or with my current fuel, or is there going to be a convenient way for me to recharge or to refuel to get me to that destination."

Laura: Were there any main implications on the U.S. transportation supply and, I guess, implications for the sustainability of the transport system?

Joanna: Yeah, I think one of the things that was really highlighted was that as we move towards these alternative fuel vehicles—and we do feel that we are moving in that direction; the technology is getting there—we still need government support in terms of the cost and in terms of deploying the charging and fueling infrastructure, but that this is a near-term need and that they [battery electric vehicles in particular] are moving towards a more self-sustaining and growing part of the market. But as we get greater penetration of these vehicles in the market, the real benefits for climate come when you also simultaneously decarbonize the grid. So the idea is that currently a battery-electric vehicle *is* less polluting than an internal combustion engine vehicle, but if you are fueling it on greener and greener electricity, that benefit becomes much more significant. And that's going to be true of the electricity for battery electric vehicles or for producing greener hydrogen for fuel-cell vehicles maybe in the future.

Laura: I'm from Australia where a lot of our, well, energy supply [or] electric energy comes from brown coal. So I believe that EVs, in Australia for example, wouldn't actually constitute a great improvement in greenhouse emissions. At least now.

Joanna: We didn't look at Australia, but we did look at the different states within the United States. And so West Virginia is an extremely coal-dependent state within the United States. If you compare that to Washington state, which actually has the greenest electric grid because of a lot of hydroelectric power, there is a four-fold difference in the overall lifecycle emissions of using a battery-electric vehicle if you compare across those two states.

Laura: That's huge.

Joanna: That's huge; it really is. But I would again say and reiterate that, still in West Virginia you are not worse-off with a battery electric vehicle. And we only expect that people will continue to green their electricity. The electricity sector in some ways is easier to decarbonize than the transportation sector. And so if we can match that, match the decarbonization of transport with the decarbonization of electricity, that's really where you get the most gains.

Laura: Well that's very interesting and great insight from the report. Can people access this report?

Joanna: Yeah, absolutely. So the entire report is publicly available online. It's at <https://energy.mit.edu/insightsintofuturemobility/>.

Laura: It is a bit of a move-away from the research that you've previously done. Before you came here to the MIT Energy Initiative you were working with urban planners, transport planners here at MIT. Could you tell us a little bit about your research there that looked at the concept of "car pride" and what the implications of that concept are?

Joanna: So my dissertation research and a lot of the work that I have done here at MIT previous to this position was looking at this concept of "car pride." And I define it as the attribution of social status and personal image to owning and using a car. So the idea is that people may see themselves or see others as more successful, having higher status, if they own and use a car compared to using another mode of travel, whether its public transit, walking, or biking. And there is significant anecdotal evidence that car pride exists, and it exists in multiple contexts, and that this really is a symbolic value of the car that encourages people to own and use cars beyond their simple utilitarian value, so their ability to get you from point A to point B or where you need to go. And so my research looked at how we can measure, or actually quantify, this symbolic value and then how it encourages these sort of less sustainable travel behaviors.

Laura: Could you go a bit into the implications of the concept; why it is important to understand, to get to the root of this "car pride" notion?

Joanna: Yeah. So the world is really increasingly recognizing that reliance on privately-owned, gasoline-powered vehicles is not a sustainable current trajectory. That if current levels of car ownership and car use, particularly in developed countries, is achieved in rapidly motorizing and rapidly developing economies, we are going to see a significant increase in transportation's contribution as a sector to global greenhouse gas emissions and other local pollutants. And so, really we need to understand how to avoid this new car ownership and use growth in developing economies and how to shift current users toward more efficient, environmentally-friendly, safe, inclusive travel behaviors and travel modes. That's really a critical vision for meeting any sort of sustainable transportation goal.

And if we want to understand how to shift people away from cars, then we need a more rigorous understanding of how different attitudes and perceptions of those vehicles play a role in influencing their ownership and their use. And then also how all of those attitudes and their influences might vary across different people and different places. Because we know that car ownership may not have the same meaning in one place over another.

Laura: So you touched on the importance of understanding car pride in different contexts. Most recently you've compared car pride here in the U.S., I think, comparing Houston and New York. Sort of opposite ends of a big country here. Could you tell us about anything interesting you uncovered in those two locations?

Joanna: Sure. So New York City and Houston were chosen because they are very different urban contexts and transportation contexts. And that's particularly true when it comes to car ownership and use. So actually if you look at U.S. census data, New York City has lower household vehicle ownership and a much lower share of drive-alone commuting trips than the U.S. average. It's got the most robust public transport network in the United States; it's got the highest public transit ridership. And because

of that you see a lot lower car ownership and use. Houston is actually the opposite. So despite having a public transit agency which runs buses, their share of car ownership is actually higher than the U.S. average and their share of drive alone commuting trips is 80.8% of all trips from home to work are done by car in a single-occupancy vehicle, and that's higher than the national average, which is about 75 or 76%.

So we expect to find higher car pride in Houston—in this place where there is greater car ownership and car use—than in New York City. And indeed we did find that, even after controlling for the types of individuals that live in those different cities. But the difference was actually not as large as we might have expected after controlling for the types of people that already self-select into wanting to live in a more public transit friendly city like New York City versus a more car dependent city like Houston.

Laura: That's quite interesting. And just to delve into that self-selection notion, it's something that comes up a lot in travel behavior, but I am not familiar with it being applied at a whole city level. That within a city, people might choose their neighborhood, but actually having the option to move cities is just another level. So that itself is a very, very interesting finding: after controlling for that, that car pride was more similar in the two cities.

And you mentioned the mode share of journey to work, and some of our Australian listeners might be scratching their heads because I think that most of our suburbs would probably be more alike to Houston than to New York City.

So you said earlier that it's very important to understand how car pride plays out in a developing contexts where there is a rapidly growing rate of car ownership, and that could potentially bring a burden of emissions onto the transportation system. So you also explored this in Shanghai and in other countries, could you tell us what you found there?

Joanna: One of the things that I did in my research was to conduct a survey, a mobile-phone based survey, across close to 42,000 people in 51 different countries. And we were able to measure car pride for each of these individuals and then get a sense of sort of the country average, or country effect, of car pride. And what we really found was that developing economies with less mature car markets, particularly in Southeast Asia and the Middle East (countries that are fairly rapidly motorizing in those areas) have the highest car pride of any of the countries in our sample. And so what this really suggests is that, without accounting for car pride we expect these developing countries to have the highest growth rates of car ownership and use in the future—that's where we expect the growth in transportation emissions to be coming from—but that if they also have higher car pride, that might be an additional driver that's not being accounted for. And so the relationship between an individual's car pride and the likelihood of car ownership, together with these current patterns of car pride across countries, is likely only going to exacerbate these existing projections unless we can start to tackle these, sort of, symbolic drivers of car ownership that we haven't really been discussing previously.

Laura: Now I know that your research has recently looked at the potential that there is a bidirectional relationship between car ownership or attitudes and use of the car. What did you find when you looked to see whether car pride influenced car use?

Joanna: This is a really important question because in the past researchers have often assumed that attitudes cause behavior. But there are alternative theories out there that suggest that attitudes might

actually reinforce behavior. And so in the car pride sense, you can think about it as: “I observe that someone who has high car pride also owns a car; is it that they had high car pride and that’s what drove them to purchase their car, or is it that they purchased their car and then they created a symbolic attachment and they, like, their car pride increase to match that car ownership?” So there’s really theoretically reasons to think that there could be bidirectionality and that’s true for car pride and car ownership, and also for car pride and car use.

So in my analysis I look at both of these different causal pathways and I can actually determine the strength and direction of the relationships between car pride, car ownership, and car use. And so, I find that car pride predicts car ownership, not the other way around. So it really is that if I have higher car pride, I’m more likely to buy a car. And then that car ownership enables greater use. Right? If I own a car, I’m more likely to use it. And then using a car is what reinforces car pride. So, if I use my car more, then I am creating, in that usage, a stronger connection with that car; I’m starting to attribute my social status, my personal image to that use. So then car use reinforces car pride and you get this cycle by which car pride causes car ownership, which causes car use; and then car use reinforces car pride.

Laura: I guess that has important implications for policy. What does it suggest about what we need to do or the potential to reduce auto ownership and use in this causal loop, this causal cycle?

Joanna: Right. So in areas where you really have this established car ownership and car use patterns in these developed countries, this reinforcing loop is really already well established. And my research suggests that it’s going to be pretty difficult to upset that status quo. There are multiple ways to intervene. We can try to reduce car pride; we can sort of target that symbolic value, that attitude. Or we can try to reduce car ownership or car use. But any of these interventions come at a cost to the individual. And I use cost generally, not in a financial sense. But that you would be taking away their ownership, or their use, or their attitude (or trying to sort of fight their attitude), and all of those have value to someone. And as human beings we are extremely loss averse; it’s much harder to take something away from someone, whether it’s a symbolic value or some utilitarian part of actually owning and using a car, once it’s established.

So there may be hope for areas where car ownership and use are not yet as entrenched, where people are, still have this, sort of, desire, this aspiration to own and use a car and it has this symbolic value of meaning something about social status and success. If we could reframe that social narrative and that image around private car ownership and use now, we might be able to sort of pre-empt this feedback loop and this future growth in car ownership and use. I don’t think that’s the trajectory we are on now. I don’t think people are really engaging in what this social narrative is around cars, but that’s one place where maybe the research gives a little hope that there is an intervention point there.

I would say in either case, whether you are in a mature developed car market or a nascent car market, we need to be thinking about what can replace the car in terms of meeting people’s mobility needs *and* in terms of providing that symbolic connection. And we need to find a way to focus the narrative on gains rather than losses. So help people relate with alternative forms of travel, whether it’s walking or biking, whether it’s public transit. And in order to do that we need to be providing real, high-quality alternatives to the car and then finding ways to sell these alternatives to the public.

Laura: I think it’s really useful to frame car pride in terms of a cost. If you take away the option of car ownership, or if the objective is to intervene in someone’s car ownership, to think of it in terms of a cost

might help transit agencies find the solution to replace that cost. Even though it might seem simplistic to put it into terms of cost, the reality is that putting it in those economic terms is very helpful for achieving a solution.

You said that we need to find ways to “sell” these alternatives. How easy is it for transit agencies to market their services in this way?

Joanna: In some ways, it’s very easy and that’s because transit agencies already have a lot of assets that they can leverage for branding, for marketing. Those are things like bus stops and train stations; those are the buses and the trains themselves. And public transit has a lot of unique, and I would say wonderful, aspects that they can use to connect the services they provide to people on an emotional and a symbolic level. And there are a number of things that they could play on. And those could be the social nature of a shared space—that public transit is public space where you can meet new people, you can be exposed to diversity of thought, of culture, of behavior. It could be the fact that they are environmentally-friendly and sustainable in this environment of growing concern about climate and our impact on climate change. And there is also, in a sense it’s also a chauffeured mode, where you can use your time productively or multi-task while you are in a bus or train, which you can’t do while you’re sitting and driving, stressed in traffic. So the right message or brand is going to depend on the local context, the target user group you want to connect with. But there are definitely aspects of public transit that we really could help to promote and to connect to the people that are going to be using it.

There really is a stigma around public transit in a lot of places. Just like how there is car pride, in a lot of places there is sort of bus shame, in particular, and rail has maybe a more middle-ground or moderate view, but really buses in particular are seen as, sort of, these things that people don’t want to ride unless they have to because they don’t, they can’t afford an alternative. They’re really seen as the poor-people’s mode of transport. And how can we revamp the image of the bus to be something that is “cool”, that people want to ride.

Laura: We do forget to speak those benefits to the users and it’s really only a recent development that transit agencies have become interested in service design and putting their users at the center. And what your research is uncovering is even more impetus for doing that. Have you seen any examples of how this has played out well or maybe not so well?

Joanna: I think one of the ways that people are starting to do that is by tapping into this idea of it being really environmentally friendly. So one example is AC Transit in Berkeley, CA: Berkeley, CA is probably one of the most environmentally-progressive areas in this country. This is one of the first transit agencies to integrate hybrid electric, hydrogen fuel-cell buses (so zero tail-pipe emission vehicles) into their bus operations. And these buses had their own special paint work. They had a green stripe around the top; they had “zero emissions” written in all-caps, in large letters; with pictures of flora and fauna, to really get people to see that this bus wasn’t just any old bus, where they may have this previous narrative or social construct in their minds, but to really say “no, this is something new, this is something exciting.” So I think that is a really good example of how you can couple service and fleet improvements with marketing, to better connect to the things that local people care about. In this case, that’s the environment and its climate change.

And it’s a great first step, but I also don’t know of any follow-up. So these buses were introduced maybe 5 years ago, they’ve been in operation for multiple years. Are there ways that the agency can, like,

continue to engage in this brand, whether it's something like putting up placards at bus stops on the routes that are served by these vehicles showing how many tons of CO₂ or how many trees have been saved by the fleet so far, or even telling riders how each trip that they make by transit instead of taking a car contribute to those savings. Really, making it something that connects to everyone's individual choice and knowing that "yes this bus is cool and, if I take it, I'm making a difference towards this goal." That really provides that connection.

Laura: Those sorts of nudges that you're talking about are awfully familiar. I mean, we see them in other domains. It's essentially the way that other products and services are sold to us and marketed to us. That ["marketing"] might be something of a dirty word for something that is ultimately, generally speaking, a public service, but if cities desire this behavior change then they might have to adopt these methods. Have you any idea if that is, in fact, one reason why transit agencies aren't doing more in this space or have any other ideas why there are so many low-hanging fruit that don't seem to be tapped into?

Joanna: Yeah, I think the greatest challenge is this really requires a mindset change among public transit agencies themselves to really embrace their role in branding and, sort of, shaping, as you said, the public and individual's travel decisions. And I think historically within PT agencies, people have seen their role as serving the interests of the public not trying to actively shape or nudge the interests of the public. And so they try to provide neutral information on services to passengers, just, you know, what buses are we running when and where are they going. But they don't try to sell their services beyond that.

But I think one thing that's important to recognize is that a lack of a clear message or brand is in itself influencing behavior; so by choosing not to engage in marketing and branding, they are actually influencing people's behavior. That there is no such thing as a neutral position. And part of that is because they are going up against a private car, which is heavily marketed by private industry. And that these symbolic attachments, the idea of the car as freedom as social status, is not something that is inherent or organic in that car, it's something that has been shaped by hundreds of years of marketing from this industry. And so they are losing a branding war by not engaging at all. I would argue that they have to actively engage. Because they're influencing people's behavior whether they like it or not, and why not do so in a way that serves the public good and the public policy objectives that our cities have for more sustainable travel, for more equitable travel.

Laura: Yeah. And your research points to the evidence base for doing that, which is extremely helpful. So for any transit agencies or planners listening, who are sort of looking for the justification, I think Joanna's research really points to the need for this [marketing of public transit] and provides the evidence base to start acting.

So you've noted that there is the need for a mindset change among public transit agencies; that they need to embrace their role in shaping individual travel behavior and nudging people towards more sustainable choices. But beside the industry culture, were there any other challenges that you thought of?

Joanna: I think the other challenge is funding. Transit agencies across the board are often struggling to secure reliable funding sources, even to maintain and operate their services. And so it's hard to sometimes justify the money spent on marketing. And I think that it's important to remember that first, that branding is a pretty small investment compared to a lot of the investments, in capital programs in

particular, that these transit agencies are engaging in, but also that marketing can help with the funding challenge. Because the dollars that you spend in marketing can help to attract riders and can increase the fare revenue that your system is obtaining. And it can open up opportunities for other types of commercial revenue through merchandising or other activities. I think one of the greatest examples is London's "mind the gap" slogan and all of the actual merchandise that they sell with the transit maps, with the "mind the gap", that actually is a source of revenue that they can reinvest in their system. And I mean this is not ever going to compete as a revenue source with something like fare revenues for a public transit agency, but that little bit of money can help to continue to build that brand, to build that marketing, and it can be self-reinforcing.

Laura: That's a great point. In your research, you have also found that there are perhaps other factors impacting car ownership. So, I guess just to put a caveat on, or open up a research agenda, what other factors might be influencing/impacting car pride?

Joanna: I do research on attitudes and I feel very confident that attitudes really do matter in shaping people's behavior. But we can't forget that the preferences and attitudes that exist are shaped by our environment. And so if our cities are built in such a way that there isn't a reasonable alternative to owning and using a car, if it really is the only way that I can get where I need to go on a daily basis—this is, sort of, car dependence as a broader idea—then it's really going to be hard to *break* this cycle of symbolic and utilitarian value. We need to plan our cities and our transportation networks to encourage compact, mixed use development around our public transit that enable active and car-free lifestyles. And we're going to need to accompany these infrastructure and policy actions with clear reframing of social norms around personal mobility. And so, I'm not here to argue that if we re-market the car or we re-brand public transit, that's going to solve the issue; but I think that there is growing evidence that as we make infrastructure and policy changes towards sustainable transport, as we improve the public transit services and the alternatives to the car, we need to connect those to people so that they buy-in to that new narrative and that new type of lifestyle. And that's what I hope to see going forward.

Laura: Very insightful. And just to summarize that, I guess you've touched on two key aspects that can potentially intervene in the cycle of car ownership and car pride and car use, and that is to have the alternatives available—the quality transportation alternatives—and to market them effectively. And the one without the other is a bit of a blunt instrument, so you need both. And that's great insight to take away from your research. Thank you very much Joanna.

Joanna: Thank you so much.

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