MSCI 311 Assignment 1

Dylan Chow

January 29th, 2023

On the roads, cars must stay between painted lines in the road and follow signs and signals written by the law. You must stop at a stop sign, You have to be within a certain speed given by a sign, you have to have certain lights turn on as you turn or brake, and you must always have your headlights on when it is dark and when the weather limits your vision. These are very formal constraints and one cannot (legally) drive a car without taking a test on these formal constraints. However, I find it very interesting how some of the formal constraints in driving are also used as informal constraints amongst pedestrians walking along the path. The most obvious example of this informal arrangement is how (most) people tend to stay to the right side of the sidewalk or path. This can be compared to the regulations amongst most countries of the world to drive on the right side of the road. Something similar can be said about people stopping along busy pathways. Pedestrians, like parked cars on the road, will pull to the very edge of the path if they need to stop. However, this type of behavior amongst pedestrians slowly loses regulation in wider paths and at intersections.

On the road, formal constraints exist to avoid accidents and aim to ensure the safety of all drivers. The idea behind these constraints is if everyone follows the same set of rules and the rules account for all edge cases on the road, then that should eliminate most opportunities for accidents to happen, especially more severe and fatal ones. Along walking paths, it exists so pedestrians can smoothly get to point A to point B on their path. It is easier to move along at a steady pace when several others in front and behind you are following the same line as you. This eliminates obstacles for those that have to get somewhere and I would say the informal constraints do allow people to move from point A to point B more fluidly along the path, but it is not uncommon for people to not follow these constraints because of lack of awareness, the person wants to get to a certain spot that goes against the flow of pedestrians in the pathway, or possibly to avoid someone or something. There are many reasons people deviate from the informal constraints along walkways, but nonetheless, it improves the pedestrian flow.

I think there are a few ways to improve the pedestrian flow beyond the informal constraints already in place. The most common situations where the informal constraints fail is when these constraints become an inconvenience are in courts, squares, or some other type of large area, at busy intersections that accumulate enough idle pedestrians waiting for the traffic signal to change that it blocks pedestrians that try to round the corner. In a big open square or court, it’s unintuitive to stay to the right side since in most cases, staying to the right makes the path from point A to point B much longer. It usually also means you cutting off people’s paths in or out of the open area. Open areas with multiple points to enter and exit from can only pose as an issue when the open area becomes crowded and as everyone at every spot in the square is trying to go a different direction. Squares and courts (for pedestrians) are like parking lots (for cars) in that if cars aren’t constraint to taking certain paths (which they are), it would be a nightmare trying to navigate a parking lot, but since there are formal constraints on a parking lot, they are efficient with space and general organization. However, squares and courts do not share the same principles nor are the formal constraints in a parking lot consistent enough to have the same constraints applied informally to an open walking space (e.g. not all parking lots are structure the same way, but all paths have the same structure). The two solutions to this are to either avoid having large open areas where this sort of thing happens or make the lot larger so the density in the area has decreased. Another issue with these informal constraints comes at a crosswalk. If the crosswalk accumulates enough people waiting at a particular intersection, that group of people eventually becomes large enough to block the corner of the sidewalk and inconveniences those who are trying to round the corner of the intersection. The obvious solution would to just fix the traffic signals at that intersection to improve the pedestrian flow at that particular corner. However, there are some intersections in the world (or at least I think there are) where there is pedestrian blockage for every corner and direction in the intersection. In that case, I think the solution is to make the paths wider such that pedestrian flow around each corner isn’t bottlenecked by the activity in the intersection and the pedestrians can maintain their informal constraints without disrupting its flow.