Careful jaywalking saves lives

WalkingBy Ben Ross (Contributor) May 3, 2016 80

To make streets walkable, we need to re-think the basic principles of how people on foot and people in cars share the roadway. This is the first of a multi-part opinion series.

Pedestrians put themselves in danger if they wait for a walk signal instead of crossing the street whenever and wherever it looks safest. There are no definitive studies, but that is what available evidence strongly suggests.

Photo by nydiscovery7 on Flickr.

Most research on traffic safety focuses on narrow questions posed by the highway agencies that fund it. Basic premises, like the idea that "jaywalking" is intrinsically unsafe, are rarely investigated.

In the absence of systematic studies, one must turn to indirect statistical evidence.

One useful data set was collected for New York's Vision Zero program. That city, where residents routinely ignore signals when they cross streets, can be thought of as a natural experiment. The majority of pedestrian deaths, and a far larger majority of non-fatal crashes, occur while crossing the street legally in a crosswalk.

Why might that be? Drivers hit pedestrians when turning more often than when they are driving straight ahead. At a red light, drivers who are about to turn wait alongside pedestrians. The changing signal sends both into the intersection at the

same time — maximizing the opportunities for collisions.

Other researchers, working in places with less foot traffic and fewer striped crosswalks than New York, got results that point in a similar direction. They found that pedestrians crossing big highways are more likely to be struck at marked crosswalks than at unmarked ones. On smaller roads, they found little advantage either way.

The Federal Highway Administration took these findings to mean that putting stripes on highway pavement makes it more dangerous to cross there. It used them to justify a ban on new crosswalk markings, except at traffic lights, on wide high-speed roads. A far more likely explanation is that pedestrians are better judges of their own safety than are traffic engineers, whose first concern is usually to move cars fast.

The concept of jaywalking was invented in the 1920s by motoring lobbies to empty streets of other users. Drivers wanted to go faster and automakers sought to sell more cars. Safety, as Peter Norton has shown in his book Fighting Traffic, was no more than an afterthought.

Almost a century has now passed, and our traffic laws are still not geared to safety.

Walk signals are bad for walking

WalkingBy Ben Ross (Contributor) May 12, 2016 25

To make streets walkable, we need to re-think the basic principles of how people on foot and people in cars share the roadway. This is the third post second in a multi-part opinion series.

Conventional wisdom says that walk signals make crossing the street safer for people. But they actually make walking slower and more dangerous.

Photo by Adrian Black on Flickr.

Many pedestrians think the walk-don't walk light helps by letting them know when it's safe to cross the street. But its actual effect is to curtail the right to make that crossing.

When there's no walk signal, a green-yellow-red traffic signal sends drivers and pedestrians traveling in the same direction into an intersection during the same green light interval. What the walk signal does is to give traffic engineers the means to send them ahead at different times. In practice, those on foot invariably get less time than drivers — often only the recommended minimum of seven seconds.

Walk signals push pedestrians off the street in more subtle ways, too. Federal Highway Administration rules require new walk signals (except on very narrow streets) to have timers that show how many seconds are left before you must be off the roadway.

But the timer is useless for deciding when to cross. Under the rules, the countdown doesn't begin until the don't-walk sign begins to flash — at which point it is illegal

to enter the roadway, even if there is enough time to get to the other side. What the timer does is to chase slow walkers back to where they started, supplanting long-established laws that let pedestrians keep going if they're part way across when the light changes.

One thing pedestrians do like about walk signals is their visibility. But they aren't needed for this purpose. Red-green lights on streetcorners would be just as visible.

Walk signals are a safety hazard

Not only do the signals make walking slower and less convenient, they make it less safe.

Since — as discussed in the first post of this series — pedestrians are the best judges of their own safety, restricting the right to cross the street is intrinsically dangerous. On top of that, restricting people's ability to enter the roadway on foot trains drivers not to look out for people walking.

A particular peril is the 7-second crossing interval, which comes just when the drivers' light turns red. The only time pedestrians are allowed to step into the street is when the cars that waited at the red light (to travel in the direction perpendicular to where the pedestrian wants to walk) begin to turn across their path.

Timers, too, create hazards. They change the behavior of drivers as well as those on foot. Whether the drivers speed up to beat the light or simply get distracted is not clear, but the effect is real. A recent study in Toronto found that countdown timers cause more collisions than they prevent.

Top-down control is the wrong approach

Dutch traffic engineers have found in some villages that removing all traffic signs and markings actually brings accident rates down. It is rarely feasible to go that far on busy American streets, but the underlying principle — that negotiating the use of shared space makes roads safer — still applies.

The philosophy of the walk signal is just the opposite. A central controller sends instructions separately to drivers and pedestrians. One road user doesn't know what the other is supposed to do — drivers, in particular, are not responsible for looking at walk signals and often can't see them — so everyone must rely on the controller.

Without shared information, the crosswalk becomes a legal no-man's-land. Motorists preparing to make turns don't know whether a person they see on the sidewalk will have the right of way to cross in front of them. When crashes occur, it's hard to prove the driver is at fault.

If drivers and pedestrians are unable to coordinate, the system operates properly only if each gets correct instructions and follows them reliably. But the reality of the highway is far different. Signals are mistimed, beg buttons (the buttons you sometimes have to push to get a walk signal) don't work, snow blocks sidewalks, and of course both motorists and pedestrians regularly ignore the law.

The basic flaw of the walk signal is its underlying concept of protecting pedestrians by separating them from vehicles. This leads inevitably to ever-greater restrictions

on movement by foot. And it fails to make walking safe.

Timing signals to work for pedestrians is impossible

WalkingBy Ben Ross (Contributor) May 19, 2016 15

At Arlington's "intersection of doom," the traffic signals are so complicated they're nearly impossible to follow. Photo by author.

To make streets walkable, we need to re-think the basic principles of how people on foot and people in cars share the roadway. This is the third post in a multi-part opinion series.

Walk signals are not only unsafe and inconvenient, they're also incapable of making pedestrian travel efficient. Engineers simply don't have the time or resources to correctly configure every traffic light for pedestrians.

Traffic lights and signs are not police officers standing in the intersection. When engineers use them to direct traffic as if they were, they impose on themselves a task they cannot carry out. In real-world practice, it is simply not possible to program the lights and place the signs in a way that moves people efficiently. The engineers are short of information, time, and money.

Highway departments don't even have the resources to fully optimize traffic controls for drivers. They traditionally simplify their work by planning for the busiest time of day. But traffic, especially foot traffic, flows all day. Outside rush hour, both drivers and pedestrians find themselves standing and watching empty streets, waiting for slow lights timed to minimize rush-hour backups.

It is possible, as New York and a few other cities have shown, for complex signals to make walking easier. Pedestrians get a few seconds to enter a crosswalk before cars can turn. Or turns are banned while people are crossing.

But if you try to orchestrate movement on foot in this way at every streetcorner, the traffic engineers' job becomes entirely unmanageable. They cannot possibly find the time to adjust every walk signal for the proper balance between walking and driving.

And even when walk signals are properly adjusted, the engineer still knows less than the person walking on the street. Anyone standing on the corner can see whether cars are coming. The pedestrian knows best when it will be safer to cross immediately than to wait for the green light and dodge turning vehicles.

In any case, highway agencies rarely give foot travel much attention outside big-city downtowns. At best, they make a half-hearted effort to meet federal minimums. By-the-book engineering creates hazards in the form of disappearing sidewalks, badly timed lights, and inscrutable signage.

Walk signals are expensive

Not only are walk signals costly in staff time and information, they are a financial burden. Highway agencies say that the cost of installing a full-featured traffic signal is a quarter to half a million dollars, and sometimes more.

There are thought to be more than 300,000 signalized intersections in the United States. (No one really knows the exact number.) Retrofitting all of them with walk signals to current standards would run up a bill in the ballpark of $100 billion.

Incremental fixes just create new problems

The rules for crossing streets grow ever more complex, and they have come to resemble the Gordian knot that the ancient Greeks were unable to untie. Straightening one piece out only creates new tangles.

Rosslyn's "Intersection of Doom," where drivers turn right across a bike path, shows this dynamic at work. After much public agitation, the walk signal on the bike path was set to begin before the green light. But drivers still came through the busy crosswalk when turning right on red. So a flashing don't walk signal went in. Now drivers need eyes on three sides of their heads to comply with the signals.

Signals for the blind have undergone a similar evolution. When walking is controlled by a traffic light, those who can't see use traffic noise to tell whether it's green. But if there's a walk signal, they don't know whether it's lit. So crosswalks with walk signals need pushbutton-operated beepers for handicapped access. More expense, more confusion, and more obstruction of the sidewalk.

The complexity has gotten so bad that FHWA can't even keep its rulebook straight. It required beepers for the blind in 2009, but did not authorize a sign that says what the button is for. Rule-bound engineers are now blanketing streets with signs that comply with the rulebook but misinform their readers.

These miscues are not happenstance. According to the branch of mathematics known as control theory, they are the inevitable consequence of too much complexity. Beyond a certain point, increasing the number of signals sent by an automatic controller creates more error than it prevents.

Alexander the Great is said to have cut through the Gordian knot with his sword. We need similar boldness to make our streets walkable. My next post suggests how that might be possible.

To make streets walkable, empower pedestrians to cross anywhere

WalkingBy Ben Ross (Contributor) May 25, 2016 17

To make streets walkable, we need to re-think the basic principles of how people on foot and people in cars share the roadway. This is the fourth and final post in a multi-part opinion series.

To make streets truly walkable, we need to totally rethink how we run them. Crossing on foot should be legal anywhere and anyplace. Traffic lights should be red-yellow-green, with no walk signals.

Photo by Ian Sane on Flickr.

As the previous posts in this series have shown, these simpler streets would be far safer. They could operate with only limited changes in the rules of the road. Drivers would follow traffic signals as they do today — pedestrians would have the right of way when they cross on green, but yield to drivers when the light is against them.

The rule for crosswalks with no signal would not change at all; those on foot would still have the right of way at all times. Elsewhere, foot crossings would be allowed at any location, but pedestrians would have to yield. (This is the current rule in Maryland and DC on blocks that don't have traffic lights at both ends.)

How the rules went wrong

The evolution of roadways over the last century has progressively restricted movement on foot. Traffic engineers have had two goals: to speed automobile travel

by getting pedestrians out of the way, and to prevent crashes by separating vehicles from pedestrians.

This approach has long since become obsolete. It's not just that roads designed for fast driving aren't good for city living. Even on its own terms, traditional traffic engineering fails. It doesn't make streets safe. And it's too complex and expensive to be fully implemented.

The poor suffer most from this failure. Declining suburbs, designed for travel by automobile alone, now house many who cannot afford a car. With sidewalks scarce and crosswalks rarely marked, travel on foot in full compliance with the law is a practical impossibility. This opens the way to police harassment of minority pedestrians — a practice whose most famous victim was Michael Brown of Ferguson, Missouri.

Pedestrians need clear guidance, not complex commands

Effective management of the roadway requires a different philosophy. Users of all types should be empowered to cooperate in sharing scarce street space. Rules must be simplified and decision-making decentralized.

Pedestrians, empowered to cross whenever no cars are in the way, get to share the road more fairly. Walking is no longer delayed by rules set up to move cars. And legalizing mid-block foot crossings, which are unavoidable in many low-income suburbs, eliminates a pretext for police misconduct.

Simpler signals — no walk signs, so that the same traffic lights guide drivers and pedestrians alike — make roads safer. Drivers see what pedestrians see, so everyone knows who goes first. Simplicity also reduces distraction and provides redundant information to those who, inevitably, take their eyes off the signals. When movement begins, on wheel or on foot, anyone not paying attention gets a cue that the light has changed.

With this approach, rules of the road must still govern movement on the streets. Pedestrians have the right of way when crossing with a green light, or at a crosswalk with no signal. Everywhere else, vehicles have the right of way, with pedestrians allowed to cross if no traffic is in the way.

These right-of-way rules are only slightly altered from those in effect now, but they have a different spirit. Rather than telling people what to do, the rules create a framework where individual decisions add up to a collective gain. It's like economics, where markets usually work better than central command. Yet the system can exist only because laws set out basic rules and prevent harmful behavior like monopoly and fraud.

There are, to be sure, traffic problems that pedestrian empowerment cannot remedy. Where heavy foot and vehicle traffic meet, for example — situations like South Capitol Street after a Nationals game, or Times Square and the World Trade Center in New York — full separation of road users is the only way to keep traffic moving. Humans would have to direct traffic, as indeed they often do now in such places.

But a new approach to governing our streets cannot be judged against perfection; it must be compared to today's hazardous mess. The benefits of flexibility and

simplicity will far outweigh the dangers created by loss of control.

This non-traffic engineer can only sketch out the needed changes. Details need to be added. Crossing freeways on foot, for example, surely must remain illegal.

New rules by themselves will hardly create safe walking streets. Roadways must be redesigned, and public attitudes must change. But without fundamentally rethinking how we control movement, the streets will never be safe and easy to walk on.