

Hidden in plain sight



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We've all experienced it: You're about to leave a parking lot, and dutifully you creep up to the exit line, look left, and then glance right. Your head swivels left again. Everything's clear. You pull out and—shoom!—a motorcyclist suddenly appears out of nowhere, barreling down on your left corner, causing you to slam on your brakes. Where the hell did *he* come from? I just looked, and he wasn't there!

Obviously, he didn't just come out of nowhere. Carelessness may have been a factor, but there are actually good reasons why you didn't see him. Rarely are they ever taught in Driver's Ed, but they are to fighter pilots, who can't afford to get things wrong in the air.

1. We never evolved as a species to drive vehicles at 80 mph (or fly planes at 800). Nature equipped us to watch out for saber-tooth tigers and hunt for tasty deer, so our ability to spot movement is phenomenal. The bad news is that our brains can correctly register only things in our direct line of sight. Why? When we scan a scene, our eyes move in a series of jerky jumps called *saccades*. Our eyes physically can't see anything that lies within these gaps, not even flashes of light. It's only when our eyes have stopped moving and are focused at a fixed point (even momentarily) that our brain can actually interpret what we're seeing. The smaller an object, the more likely it is that it will fall within a saccade. That's how motorcycles, people, and entire vehicles get lost when we do quick visual sweeps.
2. Often, we don't see what we don't *expect* to see. Our brains fill in these gaps with whatever they assume to be there. If you expect (or want) a space to be empty, you're less likely to perceive that something is actually there.
3. Peripheral vision has its limits. It does help us spot hazards related to movement, but we can't register meaningful detail with it. To do that, we have to actually turn our heads and look.
4. We have trouble spotting movement in certain situations, such as oncoming vehicles from a distance. Also, a vehicle that stays in the same position and speed relative to you (especially at an angle) can appear perfectly stationary in your windshield as you both approach the point of collision. That's why you may not see vehicles merging onto freeway onramps until they're practically right on top of you.
5. We tend to overlook the edges of framed images. Areas around door pillars, rearview mirrors, windows, and your dashboard all tend to be dismissed in even bigger saccade jumps in a phenomenon called "windscreen zoning." You might actively see out of only two-thirds

of your windshield—if it's sharply raked or narrow, even less.

So what can you do about all this? A lot, as it turns out!

1. Slow down when you approach roundabouts or intersections, even if the road seems empty. This changes relative speeds, so you're more likely to see others, and they you. It also gives you more time to look—and actually see.
2. Before turning or crossing, look right and left methodically, deliberately focusing on three different points: close, mid-range, and far. This can be done quickly, but it must always be done mindfully. This "lookout scan" forces your eyes to move, and forces your brain to accurately capture visual information.
3. Before turning, deliberately look left and right at least twice. This doubles your chances of catching anything. It also gives time for an approaching vehicle to change its position in your windshield, making it less likely to be caught in a saccade.
4. Before turning, look next to, below, and beyond your windshield pillars and both your rearview and exterior mirrors. Even better, lean forward slightly so you are looking around them. Actively scan for the presence of legs and feet as well.
5. Never dangle anything from your rearview mirror. The swinging movement of even the smallest doodad can distract your eyes from detecting real road hazards.
6. Before you change lanes, always check your mirrors; then look mindfully at the spot into which you want to move. This means turning your head to double-check that a motorbike or cyclist wasn't in your peripheral vision or in a saccade. Even if you don't think it's necessary, do it to establish the habit consistently.
7. On the freeway, train yourself to turn your head and look at on-ramp merge points as early as possible. It'll save unpleasant surprises if vehicles need to merge into your lane, especially if the onramps are short!

You may have noticed that I keep mentioning the words *mindfully* and *deliberately*. Too often we rely on rushed glances performed out of habit and haste. Remember, all the looking in the world isn't going to work unless your mind's actually focused on the tasks of seeing and registering. Take your time when you're checking, and don't let others rush, distract, or pressure you, even if they honk. The risk really isn't worth it.

For more fascinating information about vision issues, check out *A Fighter Pilot's Guide To Surviving On The Roads* by John Sullivan, a former Royal Air Force pilot.