

(from "The Sense Of Moving" column, **Free Spirit Magazine**, June/July 2001)

# Relative Motion

## Part One

By Jae Gruenke

The dance between pedestrians and cars in the city is an unending succession of unbelievable risks. Some pedestrians walk within inches of car bumpers - *while the cars are moving* – and seem unafraid. While their behavior may on some level be as suicidal as it appears, it also highlights a basic ability we all have. Every day you coordinate yourself to function in a profoundly dynamic world – one that is moving even as you move through it. You weave a course of action through the movement you sense around you, unable to calculate speed or direction in any absolute way, but only knowing them *relative* to your own movement or stillness.

Many pastimes make a game out of expanding the skills you use to move relative to other movement. Sharpen your ability to function in your daily life, refresh your awareness, and enrich even your ability to rest by reevaluating how you navigate on dry land, by learning to sail, or by lying on your back in a park on a perfect summer day.

### HOW TO CROSS THE STREET

City life offers endless opportunities to hone your awareness of relative motion. Walking on a crowded sidewalk, you can sense clearly whether you have time to cross someone's path by paying attention to your movement and theirs, as well as to the other cars, bikes, and pedestrians that might be factors. You get a feel for their speed, direction, and general disposition. Meanwhile, they sense you and adjust their speed accordingly. *And* you sense them sensing you, and know they are adjusting their speed, so you further adjust yours in harmony with theirs, and suddenly a relationship that is usually considered safe only when governed by traffic laws becomes an interaction negotiated anew, wordlessly, as it occurs.

Of course, people do get hit by cars. Usually one of the parties made an unnegotiable move; accidents are the exceptions that prove the rule. Maybe someone drove too fast to respond to the changing conditions of city streets or crossed the street without looking for traffic. Or perhaps the driver's or pedestrian's awareness was compromised by alcohol, anger, drowsiness, or disorientation. I've learned that it's not enough to look and feel for the rate and direction and quality of movement of the bodies around me. I am only safe when I can make eye contact with the driver of the car coming towards me. Then I know whether they see me and are in a responsive state. If I can't make eye contact or if I find something wrong in that contact, I stay on the sidewalk. Ditto if I'm sleepy myself, or confused by traffic flow on an unfamiliar street, or for any reason don't have 100% awareness of myself and my environment.

The example of pedestrians and car traffic is a complex one because it involves not only awareness of your moving body and all the others on the street and sidewalk, but also awareness of the consciousness of those moving bodies as well. A much simpler example reveals surprising things about our awareness of relative motion.

## IT'S AS SIMPLE AS IT LOOKS

Imagine you're driving your car on a winding road in the country with no other traffic. While it would seem that the car is the only moving body, can you really know for sure? Over the course of a few minutes of driving you may round a gentle curve and crest a hill, but the sun will not have moved perceptibly in the sky. Have you traversed a still stretch of road, or have you stayed in one position while the landscape scrolled by under you?

If you're moving relative to your environment, it's impossible to know whether you or it is moving. In fact, Sir Isaac Newton's laws of motion indicated (way back in 1687) that there's no such thing as absolute rest, so all movement is only movement relative to other things. Besides, even if you could know whether you or the road was moving, the choices you make in driving would be the exactly the same regardless. A collision with a tree at 75 miles per hour is a 75 mph collision whether it's you or the tree that was speeding.

Since we can't know the difference, it's really as fair to say that we move as though the world were moving around us as it is to say that we move as though all else were still. In a way, you always drive as though the hill were coming towards you, the road rising and falling underneath your car, the trees rushing by.

From a physiological perspective, whatever you may *think* you know about who or what is moving, you act on the basis of your senses. The only thing your senses know is the changes they perceive both in you and relative to you. You can often sense your own movement, feeling the length and frequency of your strides, the pressure of your foot on the gas pedal of the car. By feeling the movement of your pupils towards each other or apart as you focus your eyes, your brain measures the distance between you and other objects (\*\*attribution). Without a thought, you synthesize these sensations into a feeling of relative motion.

In daily life, these actions are so habitual they're hard to notice. But by changing your perspective a bit, you can begin to appreciate what you actually do as you move through the world. Test it out in the experiment that follows.

## LOOKING FROM A DIFFERENT ANGLE

To get in touch with the feeling that the world is as much moving around you as you are moving through it, take a walk outdoors with a friend. Find a stretch of sidewalk or grass that is free of obstacles, potholes, dog turds, etc. Then, have your friend keep an eye out for potential hazards as you take ten steps or so with your head tipped back so you can look at the sky.

All of a sudden, instead of you moving towards a tree, you see the branches of the tree coming at you. By looking up instead of forward, you have slipped free of your usual assumptions. Your idea of what you are doing when you move through space yields to what you perceive.

Your first reaction will probably to bring your head back down again, because it's very weird. Try it again a couple of times and see if you can figure out how to steer yourself and regulate your speed. Pick a branch in advance to stop directly underneath. Can you put your feeling of walking together with what you're seeing so you can go where you planned?

Letting go of your usual assumptions is one thing, but developing a new set for a new kind of environment is another thing entirely. In the case of walking with your head tipped back this may seem of dubious value, but in the case of sailing it's a profound challenge with equally profound rewards.

## NAVIGATING A NEW WAY

I got a crash course in sailing on a Saturday afternoon in April with the New York Community Sailing Association. As their fleet of 26-foot Solings pulled away from Liberty Landing Marina for the last day of their Frostbite racing series, I found myself riding in one of the boats as a crew member. At first it seemed like no big deal. I had been in a boat before, so the heaving of the water underneath us felt familiar and natural. I crouched in the boat and watched the shore glide by and the Statue of Liberty come into view while Ed Ross and Ted Newman, both very experienced sailors, tended to the sailing. Then Ed asked if I wanted to take over the jib sheets (the ropes attached to the front sail), and my confusion set in.

It felt very natural to orient myself by the features of the land passing by and let that orientation determine my actions. But the pull of the wind on the rope in my hand had nothing whatsoever to do with anything I could see. Duh, because you can't see wind. But realizing that did not ease my disorientation.

Making matters worse, we were tacking frequently. In sailing terminology, tacking means changing course in a zigzag fashion in order to reach your destination. If the wind followed the boat around all the time like a little angry cartoon cloud blowing in the sail, you could sail straight to where you want to go without having to zigzag, but of course this isn't the way it works. So you have to decide where you want to go and then weave your way towards it at angles that capture the wind.

When you tack, you change which side of the boat is towards the wind, so the sails fill on the opposite side from before and shift over to the other side of the boat. There's a rhythm to the whole procedure. To begin with, the sails are full and the pull of the wind on the boat is strong. The person at the tiller, steering the boat, decides to tack and calls out "Ready about!" Immediately the crew anticipates the shift of the boat under the wind. The skipper calls, "Hard a-lee!" and everyone ducks as the boom (the wooden beam at the bottom of the main sail) swings across the boat. There is a momentary snapping of sails as they flap like flags in the wind, and a confusion of looseness and sudden yanks in the lines attached to the sails. Then the wind begins to fill the sails from the other side and the lines suddenly become taut in our hands. We make quick adjustments to take best advantage of the wind at the angle we are meeting it, and then all seems quiet again.

By the time I learned this sequence of events, my focus had shifted entirely from our motion relative to land to the relationship between the boat and the wind, sensing its direction at every moment and tracking our changes relative to it. I could feel that we were flying along, the strong wind driving the boat through the water.

Ted and Ed exchanged a few concerned words about something on the port side of the boat, and I looked out to see what it was. It turned out to be the shore. We were just even with a building downriver of the starting line of the first race, and apparently we were not moving at all. Feeling for a moment like I was caught in a bizarre dream, I looked down at the water and saw it rushing by, its texture almost blurred by speed. I looked up into the sails and checked the wind direction, confirming what I felt: we were being driven forward fast through the water by strong, steady winds. But I looked back up at the building and saw that we had moved only perhaps a foot upstream from a moment before. Ed saw my confusion and explained, "The tide is going out." We were moving very fast through water that was moving nearly as fast in the opposite direction, which meant we were nearly motionless relative to land.

We finally made it into the cove where the speedboat waited to start the races. One after another we sailed maybe eight races all told, in what seemed to me a flurry of quick changes based on informa-

tion I could barely sense. I looked up at the shore at one point and saw two kites flying, carving arcs and S shapes in the wind as it rushed by, diving into lulls and being yanked high and still by gusts or by the reeling in of their lines. As I watched them I felt a strange, brief moment of kinship. I turned my attention back to sailing as our boat flew through the water, heeling and turning, catching the wind on sharp angles and then running, seemingly in a lull, with it blowing directly behind us.

I took my turn at the main sheet as well as the jib sheet, learning to match the strength of my body to the pull of the wind in the sail and to make quick, precise movements when the sail was briefly released from the wind's force. I ducked the boom without thinking, leaned out to balance myself when the boat heeled, or tilted, and stood to push the sail out when the wind was behind us. I also started to track the more intellectual decisions the experienced sailors were making: gauging the movement of other boats relative to ours to calculate who had right of way, strategizing to find the best course to round the next buoy, tacking to arrive at the starting line just as the race began.

Between races Ed asked me if I wanted to try the tiller. Earlier in the day I would have thought it was the easiest task on the boat. By the time he offered I was sure I didn't know enough to have that kind of power. Still, I figured if he was comfortable enough to offer, I would probably be okay. We switched positions and I put my hand on the steering mechanism. He pointed out the course for me to take and suggested I change our angle to the wind. The boat responded with hardly a thought on my part. It was effortless. I felt like I was just sliding a stick across the hull, yet the boat turned.

We kept a straight course for a while, and I realized I was hungry. I reached in my pocket for a banana, and Ted shouted "Whoa! Where are we going?" Ed reached over and grabbed the tiller, which I had released to get my snack without even thinking about it. I was surprised at what I had done. But I had felt nothing in my hand – no forces on the rudder in the water – so I had acted as though it was a steering wheel that I could release for a moment without changing our direction. Not true. Water is sneaky, parting easily but oscillating like the wind. I settled back down into the boat and let Ed steer again.

The last race of the day took us back into the marina, and Ed offered me the tiller for the final stretch. I couldn't believe he would trust me after the last time, but I was curious to try again. As before, he pointed out exactly where I should aim the boat. This time I held the tiller long enough to feel an astonishing amount of activity under my hand. The current flowed diagonally across our course, but unevenly, so that I was constantly moving the rudder to maintain our direction, always feeling my adjustment was just a hair too late. I felt we sailed a very wobbly line, but my eyes told me it was not really so bad. Ed congratulated me on holding the course.

The world snapped into focus as I steered the boat. It was as if I finally found what I had been missing all day without realizing it, as though my new sailboat-body had feet after all, and not just wings. I finally understood how the movement of sailing is created from the wind, the current, and the imaginary straight line to the goal. I rounded one buoy and then the next with the current billowing under my hand. It felt like the wind but more invisible, or like a hidden terrain I could only find by feeling through the long arm of the rudder. At the same time I could feel the force of the wind in the structure of the boat, its variability communicated through the fiberglass frame into my own bones. As we sailed into the marina I perceived the whole topography of the land we navigated, of which what I normally consider land was the least important part: a point, an orientation, an abstraction in a wind and water world.

The New York area is teeming with yacht clubs and sailing schools. Learning to sail can be a weekend or weekday evening activity or a wonderful summer vacation. You can take classes in lower Manhattan or travel up the Hudson, to Maryland, to Rhode Island, or to Florida, and stay in a bed-and-breakfast or live on a boat.



Once you've learned the basics you have many options, a number of which are low-cost. You can advance your skills by crewing on a racing yacht for free one evening a week, joining a club that offers you unlimited sailing on their boats with other club members, joining a racing series sponsored by a club that has its own boats, or renting a sailboat at an hourly rate. With enough experience, you can rent a boat to sail around the Caribbean as a vacation – this is called bareboat chartering. I'm told owning your own boat is time-consuming and labor-intensive but not necessarily expensive, as fiberglass boats are very long-lived and often available second-hand.

Below is a partial listing of local sailing schools and potential sailing vacations. For more information, I highly recommend you contact the **American Sailing Association** and **US Sailing**, the two sailing oversight and certifying bodies. Their certifications are offered by many schools upon completion of courses, and may be important if you wish to seriously pursue the sport. The ASA's website is [www.asa.com](http://www.asa.com), or you can call them at (310) 822-4741. US Sailing is at [www.ussailing.org](http://www.ussailing.org), or (401) 683-0800. Both have extensive school directories.

The **New York Community Sailing Association** offers a 16-hour basic keelboat course on the Hudson River off Lower Manhattan for \$300 plus a \$25 annual membership fee. Their sailing membership for experienced skippers is \$250 per season for ten 4-hour sessions on weekends or evenings plus unlimited use on a space-available basis. They also offer four racing series each year using their boats for an additional \$50 per series. For information, contact Bob Roistacher at [rer@csi.com](mailto:rer@csi.com) or (212) 222-1405. Their website is [www.ourworld.compuserve.com/homepages/rer/sailny.htm](http://www.ourworld.compuserve.com/homepages/rer/sailny.htm).

**Croton Sailing School** is located in Haverstraw Bay, at the widest part of the Hudson. They are accessible from the city in less than an hour by mass transit, or you can stay at a bed and breakfast in Croton-on-Hudson. Their Basic Hands-On Sailing Plus course costs \$395 for 12 hours of instruction and 9 hours of supervised practice. They offer ASA and US Sailing certifications. They also offer boat rentals and club memberships starting at \$450/year. From November through March they move their operations to the British Virgin Islands. Call 800-859-SAIL or go to [www.crotonsailing.com](http://www.crotonsailing.com).

**New York Sailing School** is located in New Rochelle, accessible by mass transit from New York City. Their Master's Course costs \$610 for 30 hours of instruction and ASA certification and the NASBLA (National Association of Boating Law Administrators) Small Boat Safety Certificate. They also offer rentals, a passport sailing club costing \$50/month for unlimited sailing, racing, a number of introductory afternoon and evening programs to get a feel for sailing, and a 2-night Overnight Cruise Adventure for \$495 per couple in which NYSS does the sailing. Call (914) 235-6052 or go to [www.nyss.com](http://www.nyss.com).

**Manhattan Yacht Club** is located in the North Cove Yacht Harbor, next to the World Financial Center in lower Manhattan. Their 22-hour Basic Sailing course costs \$540, including ASA certification. Subsequently you can enroll in their 2-day Overnight Adventure, which costs \$590 and earns you the ASA Basic Coastal Cruising certification. You can repeat the course for free because the boat sails better with more weight on board. When you tire of that, there's the Newport Adventure, an overnight trip between Newport, RI, and NYC with a stop in Block Island. The trip lasts 3 days, costs \$690, and gets you your ASA Bareboat Chartering certification. Club membership starts at \$990/year. (212) 786-0400 or [www.sailmanhattan.com](http://www.sailmanhattan.com).

**Offshore Sailing School** is located in Chelsea Piers, as well as Liberty Marina, NJ, Newport, RI, and several Florida locations. Their 21-hour Learn to Sail course costs \$895 on weekends or \$795 on weekdays. Or you can take the course as a vacation in Newport for \$1544 or in Florida at the summer discount of \$836, including accommodations. All their courses offer US Sailing certifications, and they've been named one of the best sailing schools in the country by *Practical Sailor*. Their sailing club

is in Liberty Marina, offering unlimited sailing for a \$400 one-time initiation fee and \$795/year. Call 800-221-4326 or go to [www.offshore-sailing.com](http://www.offshore-sailing.com).

Last but definitely not least is **J World**, ranked the #1 sailing school in the country by *Practical Sailor*. They have locations in Newport, Annapolis, Key West, and San Diego, and can arrange for bed-and-breakfast accommodations at all of them. Their Learn to Sail course is \$845 for 34 hours and earns you a US Sailing certification. Many of their courses can be taken in a format of 4 days' regular instruction and 3 days living aboard a boat. Call 800-343-2255 or go to [www.jworldschool.com](http://www.jworldschool.com).

## MULTIFOLIATION AND YOUR HEARTBEAT

The essence of a vacation to me is lying on my back in a grassy place, gazing up at the branches of trees and the clouds passing by. I crave the change in my perspective and the completely relaxed, supported feeling of lying on the ground. Taking an opportunity to rest is sometimes the very best fitness decision you can make. Strenuous activity, like everything else, is only good in moderation. If your life is overly active and out of balance, take a break and be still.

But are you really still lying on your back under a tree? Only relative to the grass you're lying on. Focus your attention on the movement you can feel when you are resting so you can allow yourself to be drawn into deeper repose.

On all but the stillest days, tiny breezes eddy among the leaves above you, stirring them gently. Without trying too hard to see, you can notice which branches move, rocking gently in the wind, and where a leaf turns in the breeze. If there's a little more wind, you can feel the quiet rustling throughout the treetop, and watch the wavelike ripples of branches giving with the wind and easing back in the small eddies of the breeze. As you listen to the leaves whispering and feel the same breeze touch you, your senses can become confused for a moment about who is the tree so that the leaves rustle inside of you, massaging your brain like the rhythmic flickering of neurons.

If you are still for a while, the sun will move in the sky and the shade of the tree will creep across your body, and you will find that you are not really lying in the same place you were before. The clouds endlessly transform the landscape inside of you as well as out.

There is a shimmering kind of slipping, liquid movement along your limbs. It may come into your consciousness after a while. It is the flow of fluid, the wavelike pulsing of blood through your veins. Without hearing it exactly you can feel your heart beat. And flowing in and out through rustling leaves, drifting clouds, and pulsing heart, is the unhurried tide of your breath. Each wave washes gently into your lungs, seems to suspend itself there, and washes back out again into the sea of the atmosphere.

Surrendering to your awareness of the richly textured rhythms of corpuscles and leaves, of your breath cycling again and again past the sun, you lose the distinction between your inner and outer worlds and dissolve your self into the universe.

*Many thanks to Earl Ubell and Adam Loory for their assistance with this article, and to my editor, Nancy-Laurel Petterson.*