

Many shotgunners aren't really clear about how eye dominance affects their shooting. The author cuts through the cloud of confusion with his eye-opening advice on shooting...



One Eye Or Two?

By Peter F. Blakeley

"I have to keep both eyes open when I shoot a shotgun, don't I?" inquired a new client. Once again, this controversial topic bubbled ominously to the surface, and if I had \$10 for every time I have been asked this question in the last 20 years, I would have bought myself a retirement home in Florida by now.

There is no doubt that when shooting a shotgun, complete binocular vision *throughout* the act of shooting a moving target is an advantage—but only if everything is as it should be and the eye above the rib is the dominant one. Stereopsis (depth perception) is better with two eyes. Closing one eye will also restrict the peripheral vision on that side. Peripheral vision is very sensitive to movement, an obvious advantage when we hunt in the field.

But some shooters, for some reason, fall into the trap of thinking that they can ignore diagnosing eye dominance and shoot successfully with both eyes open regardless. They can't. In an effort to clarify the situation (and probably step right into the middle of a huge hornet nest in the bargain), let's take a look at the facts.

Fact 1. Our central nervous system, which we use to coordinate, regulate, and control our bodily functions in response to various stimuli, is complete by late childhood, around 10 years of age.

Fact 2. Eye dominance is fixed at the time of this neurological maturity.

Fact 3. Contrary to popular belief, it is visual fixation, not eye dominance, that can switch due to tiredness or stress. This is an involuntary action and part of the body's normal defense system. We cannot switch eyes voluntarily.

Fact 4. And this is the most important one: Contrary to some beliefs, we cannot train the sub-dominant eye to "switch over" and become the dominant one. Depending on the degree of dominance, under certain circumstances, we can try to ignore the dominant eye for certain monocular sighting tasks. But there is always an underlying neurological dominance that will reappear periodically.

If you shoot off the right shoulder, have strong left-eye dominance, and have both eyes open while shooting, you will experience cross-firing and shoot inconsistently as a result. It is easy to demonstrate this by shooting at the center of a pattern board. With both eyes open, the main shot concentration will be approximately 18-24" left of center at 20 yards. The accompanying diagram explains why you'll shoot behind a left-to-right crossing shot and in front of a right-to-left. If you have a left dominant eye, continuing to shoot from the right shoulder with both eyes open will also complicate the process of applying lead. To score a hit, exaggerated lead will need to be given on a left-to-right crossing shot, and less lead on a right-to-left.

The sighting planes of various types of shotguns differ. Depending on the degree of eye dominance, the visual impression of each can influence which eye takes over as the gun is brought to point of aim. A right-shouldered shooter using a side-by-side (left) has the wide, horizontal impression of the barrels as he mounts the gun. When switching to an over-under (right), however, the dominant impression the left eye sees is of the vertically stacked barrels. Unfortunately, this is the wrong eye.

Some shooters attempt to ignore the dominant eye and proudly claim that they have "trained" their cross-dominant eye to take over. They can't. All that happens is that they concentrate hard on the visual impression of the barrel(s) that corresponds to their shooting shoulder in the hope that this will eventually reverse their dominance. In other words, they are making a conscious effort to influence deliberately which eye sees the target in the correct relationship to the barrel. By doing this, they are compounding the problem of what is already a complex process, that of applying lead. Attempting to make these adjusted lead calculations has limited success, which is directly proportional to the degree of dominance. Eventually, however, they will be able to build up a huge and complex memory bank of sight pictures to enable them to hit *some* targets with *some* success *some* of the time.

Using a skeet field as an example, the laws of physics dictate that both station four targets (true crossers from the high and low houses) require approximately four feet of lead if shot with the sustained-lead method. The aforementioned right-handed, cross-dominant shooter would need to give the high-house target six feet of lead and the low house two feet to score a hit—quite a difference and very confusing for the shooter. Unfortunately, on certain target presentations, the dominance mismatch will often manifest itself at some inopportune moment and bite the shooter in the proverbial butt.

With a new student, one of the first things I do is diagnose eye dominance. With both eyes open, point at an object in the distance. Close one eye, then the other; the one that stays in line is the dominant eye. Alternatively, make a circle with the thumbs/forefingers of both hands, look at a distant object through it, then alternately close each eye to see which one remains in line.

Unfortunately, although all these methods certainly tell us which eye is dominant, they don't tell us by how much. The confusion seems to arise when we try to assess the *degree* of dominance. Some shooters have what is known as central vision, with neither eye dominant to a measurable extent. Some people will also tell you they can see a "ghost" image of two fingers instead of one when they do an eye dominance test. With central vision or a slight mismatch, the type of gun we use, even the type of rib on the gun, can influence which eye takes over as the shotgun is brought to point of aim.

Many people insist they never see their barrels while shooting. How can they avoid seeing them? Our barrels are central to our line of vision as we intercept each target, but we should not be looking at them. It is impossible to direct the gun accurately onto the same line as the target unless we have some indication of where the barrels are.

The answer is that we do rely on see-

ing the barrels, but we do it subconsciously because we should have our eyes locked onto the target to collect as much visual information as possible. The stimulus that the eye receives provides an ocular "link" to convert the information into muscular coordination, moving the gun on the same line as the target.

Here's another interesting point. The importance of gun fit has always been stressed as one of the primary considerations for successful shotgunning. The main reason why we have a shotgun fitted is so that the pointing eye will be above the rib, and the gun will shoot where we look, isn't it? Logically, what would be the point of going to this expense if there was a degree of cross-dominance involved and the wrong eye was taking over?

As an illustration of just how much the barrels can subconsciously influence our eyes, many years ago I had a client who had shot well all his life with a side-by-side. But every time he tried to shoot an over-under, he was down the left-hand side of the target. After much head scratching, an eye dominance test revealed that he was left-eye dominant, but the dominance must have been slight, almost central vision. As he brought up his side-by-side to point of aim, the dominant visual impression his *right* eye was receiving was one of the wide, horizontal view of the barrels. However, when he pointed an over-under, the situation was the reverse, and the dominant visual impression was now that his *left* eye saw the barrels because they were now stacked vertically. His left eye would take over, and he would shoot down the left side of the target every time.

For exactly the same reason, there are some shooters who claim that a high-visibility glowing bead on the rib gives them a better target/barrel sight picture relationship. There is no doubt in my mind that some people may benefit from one of these fiber-optic sights, but only if the cross-dominance is slight. These glowing sights work by en-

hancing the barrel/target relationship as it is seen in the peripheral vision, but this is entirely dependent on the degree of dominance. In some cases where a strong dominance mismatch exists, the shooter may be tempted, even for a millisecond, to switch his focus onto the bead instead of the target at the point of pulling the trigger. The gun will stop as a result. So the shooter who is left-eye dominant (or has almost central vision) and shoots from his right shoulder will hit some targets. But he will shoot better and more consistently if he makes absolutely sure that the eye above the rib is the one he is using for the correct sight picture.

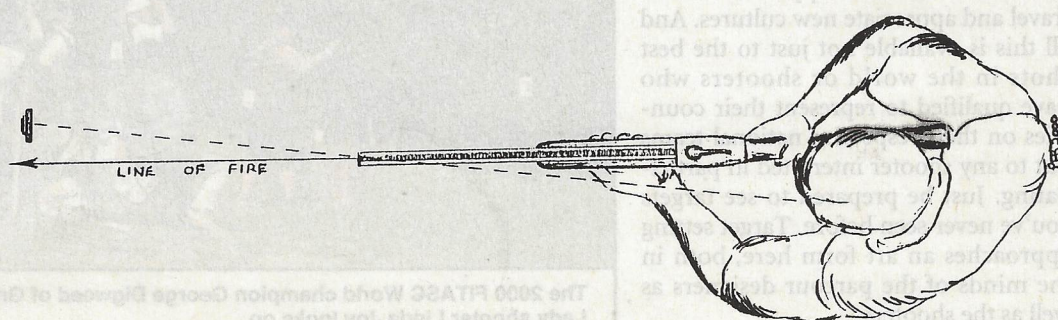
There is no substitute for making sure that the eye that is above the rib is the one that is relied on to give the brain the correct ocular information. We can do this in several ways. If you have cross-dominance, and it is diagnosed early enough, the simple answer is to learn to shoot from the same shoulder as the master eye. There is no doubt that this is the best medicine, and the shooter will be cured for life. With a youngster or someone who has never shot before, this shouldn't be a problem, as easy to accomplish as any new motor skill.

Anyone who has shot for a few years will usually object strongly to switching shoulders to match their dominant eye for two reasons. First, they will have already developed some muscle memory, and it will now feel strange to mount the gun on the opposite shoulder. Second, most people expect instant results, and when this doesn't happen, they quickly abandon this approach and go back to the shoulder they are more comfortable with. I never push my clients with this; I can only advise. It depends on how determined to succeed the individual is.

When I first moved to the United States, I had already been driving on the left-hand side of the road in the UK for 30 years. Now I had no choice but to

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The eye above the rib is the one that should acquire the target. If the left eye is the dominant one, this right-handed shooter will see the target across the rib and the gun will point to the left—known as cross-firing.

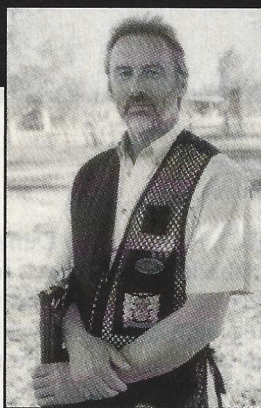




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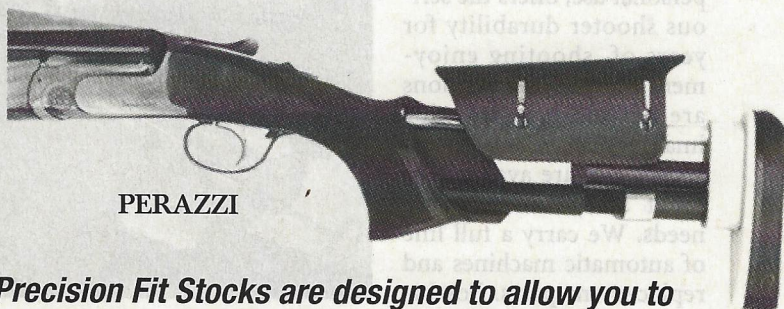
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learn to drive on the right. After three or four days, I was driving competently, using a stick shift in my opposite hand. Driving on the roads in the states was an exact mirror image of driving in the UK. But I was doing everything as spontaneously as though I had driven on the right for years. But I didn't have a choice; there was no easy way out.

The second way is to block off the cross-dominant eye with one of the weird and wonderful "cure-all" devices on the market. These can be different-size patches stuck on shooting glasses or "obliterators" that fit on the sides of shotguns. There is nothing new in this. Over a century ago, a device called the Monopeian sight was described by Greener in his 1892 book *The Gun*. Later, another similar device, known as the eye corrector, or Obliterator, was designed by John Pesket of Cogswell and Harrison. Modern versions of these are available today.

Do these devices work? Sometimes, but they also have their drawbacks. They all interrupt the shooter's binocular vision in some way, which results in partial loss of peripheral and stereoscopic vision on certain targets. The size of the lens dot is crucial. With one too big, peripheral vision is sacrificed. Use a dot that's too small, and the shooter will attempt to see around it. If the shooting glasses slip on the face for some reason, the position of the dot is changed slightly. If the gun mount is less than perfect, the position of the dot relative to the barrels is questionable as the gun comes to point of aim. I think that these remedies are more acceptable for skeet and trap because the eye is perfectly aligned with the rib each time before calling for the target. For sporting clays and wingshooting, certain target presentations will cause problems.

The third way to mask an eye-dominance problem—and the one I prefer—is to close the cross-dominant eye *just before* the shot is taken. It doesn't take much, just a quick blink as the correct forward allowance is established. By doing this, the shooter has retained his full peripheral vision and full stereoscopic vision (the ability to judge speed and distance accurately) by keeping both his eyes open throughout the whole of the shooting process as he takes the shot—until the last millisecond. He now has a crystal-clear picture of his target/barrel relationship, with no chance of cross-dominance kicking in. The only problem here is that some people cannot

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Sporting Clays

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wink an eye. The only alternative for these people is to use a *correctly positioned* lens dot.

Finally, although we have recognized for centuries the importance of diagnosing eye dominance in the UK, before writing this article, I took the precaution of making sure of my facts by consulting some of the most prominent ophthalmologists and strabismus (eye alignment) experts in the United States. The answers always came back the same. You simply *cannot* make your eyes change dominance. With shooting, the rules aren't written in tablets of stone; no one can make a sweeping statement and insist that it is more beneficial

for all of the people to shoot with both eyes open all of the time. We are all different, and it depends entirely on the ocular nerve hookup of the individual.

There are some excellent, world-class shots out there who close an eye. So for all of you who have questionable eye dominance, I would suggest this. Experiment. Try shooting a variety of targets a variety of ways, eyes both open and one eye shut. One way may give you more consistent results than the other, and I suspect that many of you will be delighted if you try this. You may be quickly breaking more targets than you would have dared to imagine. And, of course, that's what really matters, isn't it?

The next time someone tells you that you must shoot shotguns with both eyes open, smile politely. Then, do what works for you.



The author is the resident shooting coach at the Dallas Gun Club. He has been a coach for over 25 years, and his shooting qualifications include Clay Pigeon Shooting Association instructor, British Field Sports Society instructor, associate member of the Institute of Shooting Instructors, senior member of the National Association of Sports Coaches, National Skeet Shooting Association certified coach, and author of Easy Skeet, a new perspective for the beginner. You may reach him at the Dallas Gun Club by calling (972) 462-0043.



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