

The NFL's Most Exciting Receiver

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While they're not over yet, this year's National Football League playoffs have already produced one spectacle for the ages: the remarkable ability of Arizona Cardinals' wide receiver Larry Fitzgerald to pluck passes out of the sky.

As the Cardinals prepare to face Philadelphia in Sunday's NFC championship game, Mr. Fitzgerald's acrobatics are the talk of the NFL. They have also stirred up a mystery: in photographs, Mr. Fitzgerald can often be seen doing something almost unfathomable: making catches with his eyes closed. "I don't understand it myself," he says.

On paper, Mr. Fitzgerald is not an extraordinary athlete. He's not the tallest receiver in the NFL or the best leaper. His 40-yard-dash time of 4.63 seconds at the 2004 NFL scouting combine is mediocre for the position. To explain his 1,431 yards receiving this season and his ability to haul in footballs with one hand or hold on to them while being pounded by defenders, most analysts say he must have soft hands, great timing or excellent body positioning.

But after 20 years of studying the eyes of elite athletes, and after taking into account two unusual opportunities Mr. Fitzgerald had as a child, one prominent researcher believes his catching talent has less to do with his hands and feet than his eyes and brain. The two catalysts for Mr. Fitzgerald's success may, in fact, be his stint as a teenage ballboy for the Minnesota Vikings and the summer days he spent at his grandfather's optometry clinic.

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Larry Fitzgerald *US PRESSWIRE*

Joan Vickers, a cognitive psychologist at the University of Calgary, studies the eye movements of elite hockey goaltenders, baseball hitters, and tennis and volleyball players by having them play while wearing special goggles equipped with cameras that film their eyes. After watching Mr. Fitzgerald's 166-yard performance against the Carolina Panthers last week on television, she believes his talent reflects a mastery of two cognitive skills she has observed -- one called "the quiet eye" and another known as "predictive control."

While running downfield at a full sprint, Dr. Vickers says, no receiver has an easy time focusing intently on the football. To track its flight pattern, Dr. Vickers says, receivers like Mr. Fitzgerald have to glean whatever information they can about its speed, direction and rotation long before the ball gets close enough to catch. In some cases, she says, a

receiver's only chance to predict where the football will end up may come at the moment the quarterback lets go of the ball. To make a correct call, the receiver has to operate his eyes like a camera: opening the shutter, holding the lens steady and taking a snapshot with the longest possible exposure.

The ability to maintain a level and strong gaze on a distant object for an unusually long period of time, even while moving, is something Dr. Vickers calls "the quiet eye." Her research suggests the difference between great athletes and good ones -- at least when it comes to sports that involve flying balls or pucks -- is the ability to lock down on these objects longer.

Mr. Fitzgerald may have a clear advantage in this area. When he was young, his grandfather, Robert Johnson, the founder of an optometry clinic in Chicago, set out to make sure his grandson had "visual dominance" -- at first because he was having trouble in school. From the time Mr. Fitzgerald was in first grade, during summer visits, Mr. Johnson would take him to the clinic and have him stand on balance beams and wobbly boards while doing complicated hand-eye drills. By the time his grandson was 12 and emerging as an athlete, Dr. Johnson tailored many of these exercises to athletics. To improve the boy's precision, control, spatial judgment and rhythm, for instance, Dr. Johnson would hang a painted ball from the ceiling and have him try to hit the colored dots on the ball with the matching colored stripes on a rolling pin.

Mr. Fitzgerald says he believes the training helped him on the football field. "When you're at that age, anything that helps strengthen your eyes and eye-hand coordination is going to definitely help with catching the ball," he says.

The second skill Dr. Vickers sees in Mr. Fitzgerald is predictive control -- the brain's ability to gather information from the eyes and use it to predict what will happen next.

Dr. Vickers says the best goalies and tennis players she's studied have two skills. First, they use the quiet-eye technique to take a clear snapshot of an approaching object and then, while it approaches them, will instantly compare it to a vast library of memories drawn from years of practice and observation. By matching that object with others, they can make a perfect calculation of where it will go and how to put themselves in position to make the play -- even if they aren't looking at the ball. The best athletes, then, can succeed without having to open their eyes. "It's a very, very amazing cognitive skill," she says.

For Mr. Fitzgerald, this means that after scanning a newly thrown ball with his quiet eye, he turns on the microprocessor in his head and downloads every similar pass he's seen until

he's made a calculation about where this ball is likely to land. "People don't realize it," says Mr. Johnson, Mr. Fitzgerald's grandfather, "but we actually see with our brains."

Mr. Fitzgerald may have a better mental computer than most NFL receivers. Growing up in Minnesota his sportswriter father, Larry Fitzgerald Sr., helped his son get a job as a ballboy for the hometown Vikings for six seasons during his teenage years. This enabled the young Mr. Fitzgerald to see thousands of passes thrown and caught from the sidelines, to absorb these images up close in three dimensions and to study superstar receivers like Cris Carter and Randy Moss. Dr. Vickers says these experiences probably left Mr. Fitzgerald with a catalog of millions of impressions that would take most athletes years to build.

For Arizona quarterback Kurt Warner and the rest of the Cardinals offense, Mr. Fitzgerald's performance this season has made him a viable target even when he's smothered by defenders. He's also sparkled in the playoffs. In the first round against the Atlanta Falcons, he caught a touchdown in double coverage. Last week, with the team trailing the Carolina Panthers, he tipped the ball to himself while being violently sandwiched by two defenders, coming down with an implausible 41-yard play that "kick-started" the offense, according to Mr. Warner.

On Thanksgiving, when the Cardinals and Eagles last met, Mr. Fitzgerald found himself wide open on a pass play in the fourth quarter. As Eagles defensive backs converged on him, he leapt into the air and came down with a pass that most receivers might have missed. A still photograph (see above) later revealed that Mr. Fitzgerald's eyes were closed as he grabbed the ball.

When asked about the photo, Mr. Fitzgerald says he thinks his eyes were shut because he was bracing for the hit and that his instinct for catching passes is "second nature." Dr. Vickers believes it could be a textbook case of an athlete using predictive control to know exactly where to place his hands.

"I don't know how he makes those catches," says Cardinals head coach Ken Whisenhunt, "but there's no doubt Larry has an ability to catch a ball that is special."