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Geometry is in Our Genes: KU COG Faculty Member Shares How Geometry is an Easily Accessible and Useful Tool



Dr. T. J. Tomasi, Keiser University College of Golf Senior Faculty and Director of Research

Dr. T. J. Tomasi, Keiser University College of Golf Senior Faculty and Director of Research recently shared in the essay below that Geometry is a much more accessible tool than some believe.

“After much ado, the Scarecrow in *The Wizard of Oz* finally got a brain and, with it, as with all human brains, came the knowledge of geometry. ‘The sum of the square roots of any two sides of an isosceles triangle is equal to the square root of the remaining side!’ he crowed. ‘Oh, joy, rapture! I’ve got a brain!’ Well, not quite, but if you think you don’t know a lot about geometry, think again, because the human brain has been using geometry to figure things out for more than a million years. Geometry is in our DNA, according to research by Veronique Izard, a psychologist at the University of Paris. The skill of figuring out every day geometry requires no formal training, and it is cross-cultural — both modern and primitive.

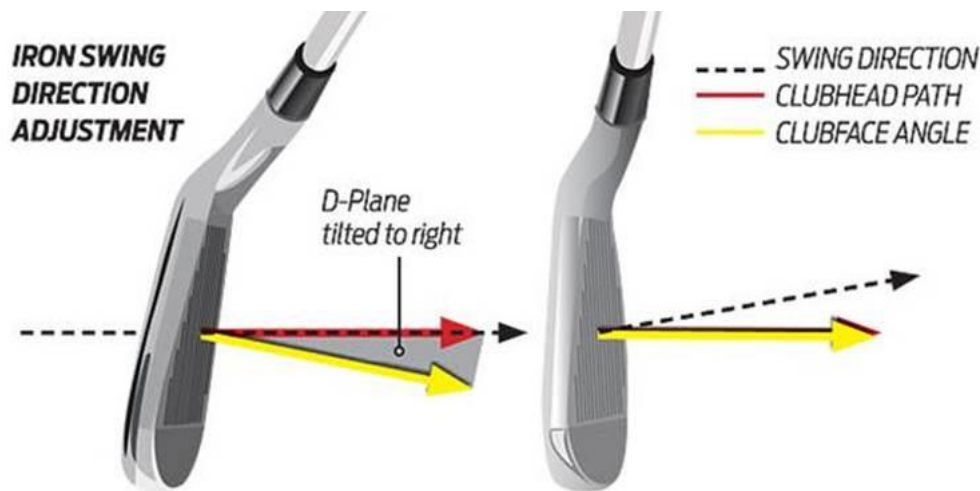
‘I would say that this means Euclidean geometry is probably universal to all human beings,’ Izard said. ‘We find people grasping concepts of geometry that go beyond the perceivable.’

To bolster the argument, witness the real-life experience of 41-year-old Jason Padgett, who was kicked in the head during a mugging, and as a result, is now a geometry genius who sees his world in mathematical formulas such as the Pythagorean Theorem. Like the Scarecrow, he had no previous

background in geometry — when the beating occurred, Padgett was a college dropout who worked at a futon store.

Neuroscientist Berit Brogaard, who tested Padgett's brain using fMRI technology, says he is a genius of a special sort called an "acquired savant," with the areas of the brain responsible for geometry and mental imagery now more active compared to a normal brain. "Savant syndrome is the development of a particular skill, that can be mathematical, spatial or artistic that develops to an extreme degree that sort of makes a person super human," explains Dr. Brogaard. And Padgett is not the only case.

Another example is Leigh Erceg, 47, who fell into a ditch while feeding her chickens and suffered a severe traumatic brain injury that came with genius level mathematic skills plus 'synesthesia,' where she now 'sees' sounds and 'hears' colors. According to University of Sussex scientists, the capability to hear colors, feel sounds, etc. can be taught using a nine-week training program. Those who underwent the training also saw their IQ jump by an average of 12 points, compared to a control group that didn't undergo training. Apparently the brain has a lot of untapped potential waiting to be developed, including golf which, whatever else it is, is a game of geometry — problem solving using the relationship of lines, arcs, distance, etc.



Shifting your swing to the left when hitting an iron aligns your club path and face angle—a vertical D-Plane and a straight ball flight.

While you're learning, use this as a rule of thumb: swing your irons 3 to 6 yards to the left of the target line for every 100 yards and 10 to 15 yards to the right with your driver. Of course you must adjust for conditions, but soon, with practice, your innate understanding of geometry will allow you to dial in very accurately.

Summary: To satisfy the geometry of the golf swing, you swing up and to the right with your driver and down and to the left with your irons (opposite for lefties). Once you learn how to do this, you can abandon the numbers and hunt targets via perception. For example, Sergio knows the geometry through practice, but it's the target that's featured on his image screen while he plays.

Takeaway:

So what makes golf so hard if humans have an intuitive sense of Euclidian geometry? That's an easy one: Most golfers remain so tied up in swing mechanics that they can't let their natural brain work out

the Point A-to-Point B geometry problems for each shot. To play your best you must learn the geometry and the swing that produces it then forget it and go play golf. If you're playing 'golf swing' instead of 'golf,' you're bound to flunk golf "Geometry 101" every time you tee it up."

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About Keiser University

Keiser University, co-founded by Dr. Arthur Keiser, Chancellor in 1977, is a private, not-for-profit University serving nearly 20,000 students offering 100 degrees at the doctoral through associate level on 18 Florida campuses, online and internationally, employing 3,800 staff and faculty.

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