



TP n.10

Technical pamphlet

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On the green : trust or not trust what the view tells us

Introduction

The view is certainly among the most cited five senses, to which we give more importance. The view allows us to "know" the world around us, though only as a reflection of the light radiation received.

However, what is often overlooked, in truth the senses are 9:

- sight, hearing, smell, taste, touch
- termoperception, pain, balance and proprioception.

In this pamphlet, we will own, for golf, the differences between the use of the **view and the use of proprioception**, to discover the advantages and disadvantages in the use of either.

1) The view

We rely on sight considering the information that we always provide truthful and reliable.

We know that the eyes perceive reality in two-dimensional form, and then the brain that processes the information to return them in three dimensions, on the basis of past experience, perspective, shadows ...

This leads to say, rightly, that visual perception is a reconstructive simulation of reality, generated by the brain, from which each of us has a different image depending on the experiences, expectations, needs, of attention.. etc

Before turning to the golf implications, I ask to have a little patience.

It argues that past experiences are the key to understanding the present experiences, but not always is so.



Consider the figure above.

The triangles, and their provisions, are the same: we know it.

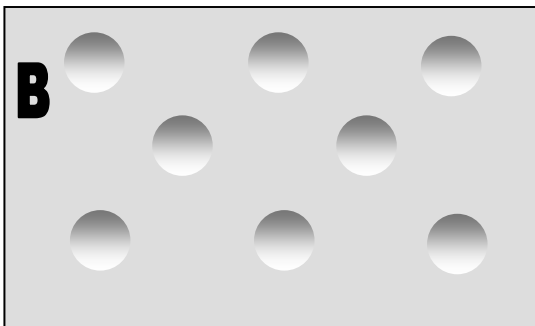
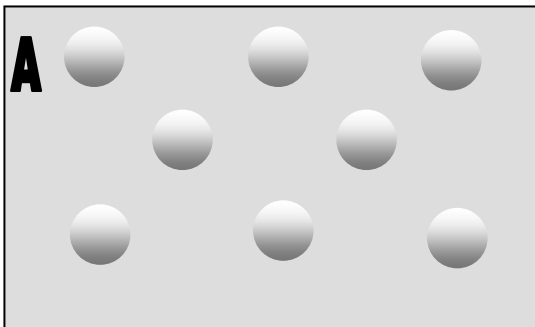
However, let's be honest, what we see (because of the alterations made by the backgrounds) are groups of triangles profoundly different: the first three are oriented in the upper right, the two middle bottom right, those at the base at the bottom left .

And there's nothing to do: we know that it is always the same group of triangles repeated on different backgrounds, but the result for our brain is different .

Therefore it is false and that the intuitions without concepts are blind, in the sense that if indeed the concepts guide him insights, once we know that the triangles are the same, we should continue to see them different. We have the concepts, but we do not see them.

Gran parte della percezione avviene da Much of perception occurs from monocular clues, especially for distances up to 6 m and for static images, and this through: familiar size, the relative size, occlusion, linear perspective, aerial perspective, colours..-(i.e warm colors seem closer to the viewer than cold, chromatically darker objects seem closer than clear)

To all this must be added that, an irresistible sense of three-dimensionality, comes from shading. Observe these drawings:

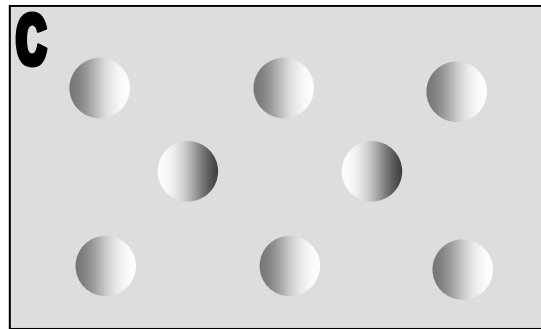


The two drawings are all identical, except as they are presented (the B is flipped by 180 ° with respect to A).

In Figure A identify undoubtedly 8 circles convex, embossed, while just turn upside down the image all the circles appear concave.

In figure C, you will see 6 circles convex, and a 3 in another 3 below, while the two central circles appear concave.

This occurs only due to the position of the shadow within the circle.

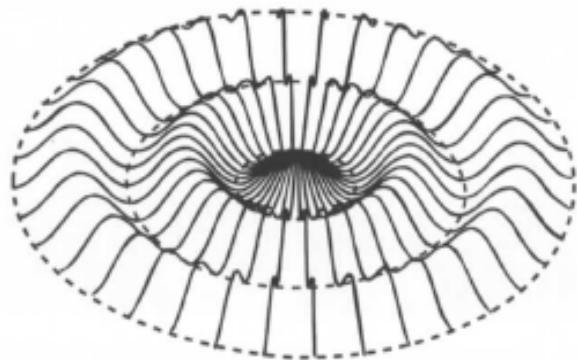


Our brain assumes assumptions that derive from the fact that evolution has taken place in a system having a **single source of light: the sun**; and this always comes from above, and the figures A and B are evidence, or from the left or the right, at its rising and its set (picture C).

Coming to us, after this brief description, it is understood that often reading the greens appear misguided by the processing that the brain performs based on visual information.

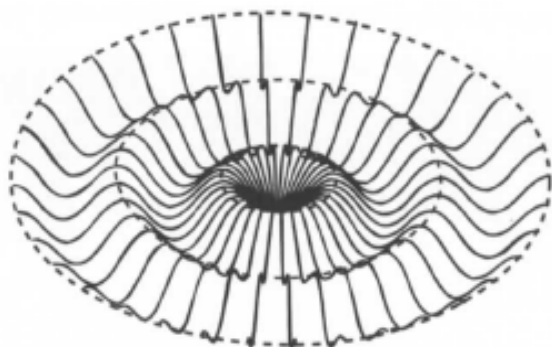
Let it be clear that the view is important, but not always fully adequate to meet the needs arising on the green.

This last example clarifies.



The image shown on paper is certainly a ripple flat, two-dimensional, but appears as a sequence of waves and convincingly three-dimensional: the outer edge that comes up and down, then a second and a third.

To flip the image, we will perceive the image differently.



Here is the reason why, some times, a portion of the green seems with slopes diametrically opposed if watched by the other side, especially in conditions of solar lighting oblique, where shadows or the colours of the green change due to the position of the sun, and even more if the green is shaded by the branches of trees.

The observation is closely associated with foveal vision, for which the observation of a stationary scene, such as ball and hole, the eyes perform a scan of the visual field concerned with rapid movements alternating with fixations, so that some portions of the green are ignored and other are frequently fix.

So, to conclude, the observation of the green is certainly important to draw the first considerations, for example, the distance between the ball and the hole, but not very useful to define the degree and direction of the slope, especially when we take influence from the boundary, for example, a portion in obvious that slope towards comes down to our stroke line, but it is said that the intercepts and that, therefore, the influence.

2) Visual perception

The model of visual perception has three stages:

The visual processing of **low level**, which establish the characteristics of a particular visual scene by identifying the position of an object in space, and identifying the colour;

The visual processing of the **intermediate level**, where you assemble simple linear segments, each with a specific orientation axis, resulting contours that define the boundaries of an image and builds a unified perception of the object, separating, simultaneously the object from the background (segmentation of the

surface).

The low-level and intermediate-level work together and identifies as figures image regions that are linked to an object and background areas that are not.

A rule of grouping the low and intermediate level is the proximity of the linear segments and the other is the similarity in colour, size and orientation.

From this it follows, for golf, as the similarity or diversity of colours on the green and the orientation of the slopes that enter in our field of vision, are processed and constitute element of the unitary constitution of the object of observation, placing within the complex information to be processed.

The third stage is the visual processing of **high-level** establishing categories and meanings. The processing produces inferences and controls hypotheses regarding previous visual experience, leads to conscious visual perception and interpretation of the meaning, which however is not perfect and can lead to errors.

3) The interpretation of the slopes.

The correct reading and interpretation of the slope is improved by collecting data and information that conveys the visual perception and to be processed by the brain to translate into fact; this ability is called "**algebraic processing of visual perception.**"

Processing of the data that the senses send us a legacy are growing and always improve with each new experience.

Some individuals possess an ability to identify the data required for processing with greater accuracy and speed, which results with the term "**talent**" or "**innate talent**".

Other subjects require more exercise to improve their processing capabilities and data collection needed, **often mistakenly focused on influential factors poorly or distracting.**

For this you need to have tools that provide the person an immediate feedback, so that we can concentrate on those and set aside others that would be conflicting with each other.



Let's try to imagine climbing up and down a staircase: all are capable of it; but if the tread and rise of each step were different and made according to specific criteria in mutual relations, all we initially of the difficulties in starting the ascent or descent of the first steps, but certainly there will be someone who before others will be able to travel in both directions with greater accuracy and security.

Here, these are the people who have a talent greater in reading and interpretation of sensory perception.

Yet another simple example: walking, to overcome a puddle of 40 cm certainly will not make a jump, but simply lengthen your stride; if the puddle is presented to us 70 cm long, we will make a leap, but if it was 3 meters unlikely we would try to skip it and we will turn around; a kid does not do this, but the adults yes, as a result of previous experience.

The ability to interpret the slope improves with exercise if you give the student instruments objective of the phenomenon observed. Among the simple phenomenon of perception and the perceived end is all forms of culture of the person watching. The seeing is a process and as such is a function of the boundary conditions, those who accompany him; in other words, the view is not a static function, but is dynamically coupled to the context.

If you are able to simplify the process of hooking it to see the context, and ignoring irrelevant or conflicting elements, you get the best result of which each of us is capable with less effort and greater likelihood of success.

The **algebraic processing of visual perception** improves with exercise and conscious experience.

However, since there was talk of processing algebraic, you know that something is algebra, another thing is the algebraic thinking: the first is a symbolic and formal to calculate, the second is an education not only to the instrument but also to its use and its applications.

In our case, unto you, the green and the elements that affect the way you see it.

4) Elements of influence

The aspects that most influence the final result of a putt are:

- objective aspects
- subjective aspects

Belong to the first speed of the green and slopes, to the second the interpretation of the speed to be given to the ball, the interpretation of the slope, the choice of the trajectory of departure and the expectation of the player in the number of strokes to pit.

The choice of the trajectory of the ball starting (aim line) depends on the interpretation we give to the slope of the green that we perceive visually that is the result of processing that the brain performs on the basis of the experience: this process is associated to the imagination of what the path that the ball will travel.

5) The path of the ball toward the hole.

Once you hit the ball, the way that this will be governed exclusively by the laws of physics Euclidean.

Without going into expression of formulas to be applied, suffice it to say that the speed of the ball, and the slope of the green stimp are the three factors that determine the end result.

The ability to post from anywhere you are, are not infinite, and increases with the slope and the speed of the greens.

A putt totally flat, ie without side slopes, and from a distance of 3 meters has possibility to pocket the ball if the trajectory starting diverges from the center to the maximum of 0.8 ° to the right or to the left and with a speed of the ball the hole is not greater than 1.30 m / sec.

A putt with a side slope has many more paths starting that can bring the ball into the hole, trajectories that increase with increasing speed of the green, of course it all depends on the speed with which the ball reaches the hole.

The end result, ball pocketed or not, depends very much on the player and the ability to imagine the behavior of the ball, but few know that the journey is not what we think.

The ball draws on a green path parabolic exclusively when you putt with a side slope pure, otherwise the figure drawing is a figure called semi-cissoid.

In short, predicting the trajectory that the ball will do all the time is really a very complex thing and it takes a long time and a great deal of training, besides the fact that it is not always in the best psycho-physical condition.

And here has found an alternative that overcomes the difficulties of interpretation of the green.

4) Why rely on the sensations of the body and not the view.

The view sometimes deceives, while the sensations of the body are much more truthful.

Among the 9 canonical ways we have also indicated **proprioception**, which indicates the ability to perceive and recognize the position of one's body in space without the support of the view.

This is possible thanks to receptors in the body that send signals to the brain, receptors sensitive to the posture of the body and the change of body segments.

In particular, what we are interested in our case are the sensors of the joint capsule of the knee, which allow to perceive the movement or position of one or more relative to one another.

The knee joint capsule, depending on the position that assumes the femur relative to the tibia, sends the information to the brain so as to have the concept on the position of the knees individually or bone segments with respect to another.

This ability, in all of us, is exploited to determine the direction and amount of the slope of the green.

It seems clear that the ability to define the direction is almost inherent in all, without the need for training, but quantitatively define how strong the slope is different and requires a minimum of exercise, which, thanks to a training attended, allow anyone within hours of accurately perceive the percentage of the slope of the green and the point on which we are more correct.

The speed of the green (stimp) and evaluation in% of the slope are the only elements that are required to apply the method AimPoint Express.

Because each of us is different, height, length and size of the limbs, will be necessary to Calibration staff to make extremely effective method.

This is not to say that all the putt will be pitted, but it significantly increases the chances of post from 6 meters down and remove from play the 3 putts.

Just try it, to believe it

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Remember that chromatically darker objects seem closer than the clear one.