



“Scientists are to blame when they torture data so much it will confess to anything.”

Allen J. Frances, M.D.

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Sweat and the biology of bliss
by Christopher Bergland



Christopher Bergland is a world-class endurance athlete, coach, author, and political activist.
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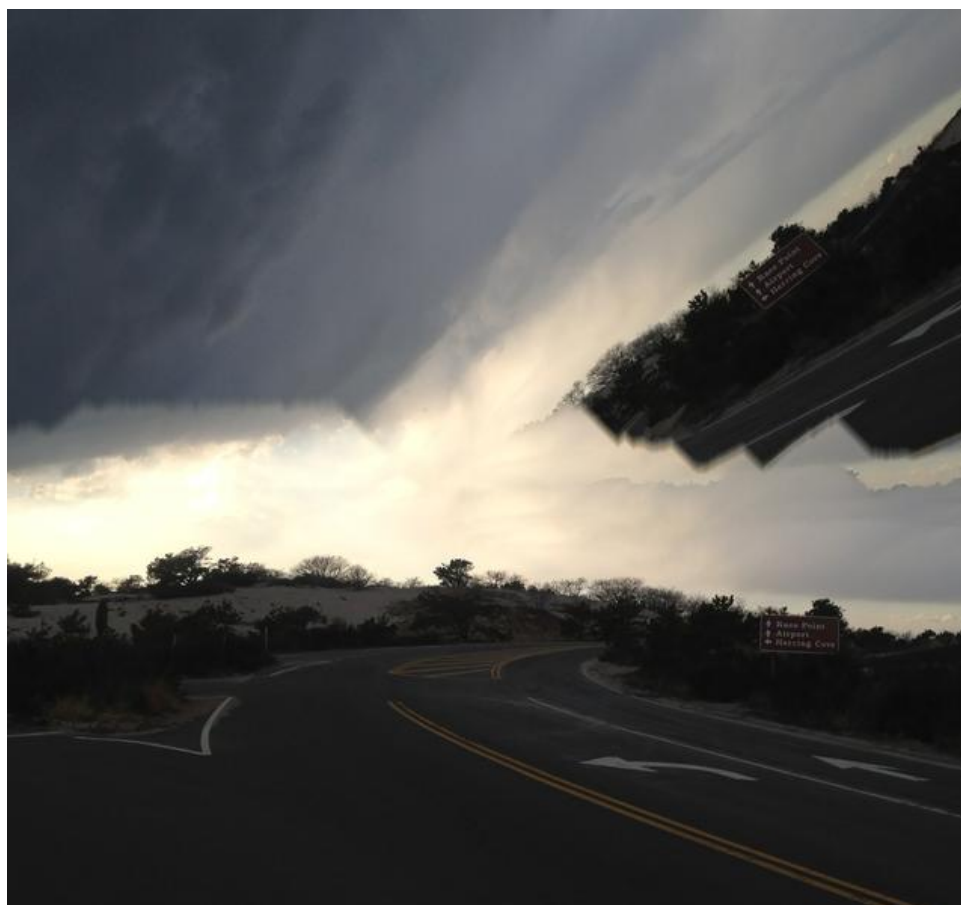
How Does the Brain Create a “Continuity Field” of Vision?

The “continuity field” merges objects every 15 seconds to create unified vision.

Published on March 30, 2014 by Christopher Bergland in The Athlete's Way

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Without the continuity field mechanism visual perceptions would be fragmented and surreal.

Vision scientists at the University of California, Berkeley, and the Massachusetts Institute of Technology have discovered a “continuity field” mechanism that seamlessly patches fragments of vision into a singular unified background image. Without the ability to create a continuity field of vision it would be impossible to navigate the world, or to play sports.

The other day I was out jogging and saw a squall heading for Cape Cod. I tried to quickly take a panoramic snapshot of the dramatic skies over Provincetown, Massachusetts with my phone... In my

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initial attempt to rush home before the torrential showers, I moved the camera too quickly which created a glitch and the fragmented image above. This image represents how disorienting the world might appear without a continuity field mechanism.

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In their new study, the researchers discovered that our brain visually merges similar objects together within a 15-second time frame. Without the smoothing out of the rough edges, our perceptions of reality would become a hodge-podge of fragmented and surreal images. The researchers also refer to the phenomenon of continuity field as “perceptual serial dependence.”

This study was lead by David Whitney, associate professor of psychology at UC Berkeley, and was published online March 30, in the journal *Nature Neuroscience*.

The Continuity Field Creates Seamless Panoramic Views



In many ways, the continuity field creates panoramic views at the expense of visual accuracy. This can create “inattention blindness,” which is the inability to pinpoint a specific object against a backdrop. In the fragmented picture at the top of the page, certain objects like the road sign and arrows are actually more clear when they are fragmented than in the final smoothed out panoramic image. One of the problems with the continuity field mechanism is that it can merge objects together in a way that makes visual cues blend together with the background.



Can you see the gorilla?

nodules, not a gorilla.

In July of 2013, I wrote a *Psychology Today* blog post titled, “Singularity of Focus Can Distort What We See” based on a study from Brigham and Women’s which found that radiologists would often miss the imprint of a gorilla on an X-ray. The radiologists didn’t miss the gorilla because they couldn’t actually see it, but rather because the visual center of their brain was looking within the continuity field for cancer

Without a continuity field, we would become hypersensitive to every visual fluctuation in our environment and lose our bearings. It is plausible that people with certain disorders like Autism, Aspergers or Down’s Syndrome might have difficulty identifying faces and objects due to neurobiological problems relating to their continuity field mechanism.

In healthy subjects, the brain is able to frame the environment and stay oriented by creating a backdrop that remains steady from moment-to-moment. This allows us to focus our gaze on objects within the continuity field and do things like hit a tennis ball or drive a car. As part of their press release, the researchers include a playful example of what the world might appear like without a continuity field, based on this commercial.

Conclusion: Having Laser Focus Within the Continuity Field Is Crucial

The ability to focus your gaze and track moving objects within your continuity field of vision is the key to navigating life and performing well in sports. Unfortunately, this study doesn’t explain the neurobiology behind the continuity field mechanism. More research is needed... but these new findings offer valuable clues by identifying a mechanism that is critical for keeping our visual bearings within our environment.



Being outgoing, optimistic, and laughter-filled can keep you healthier.



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