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Moved to Mate?

Dr. Steven M. Platek presents a scientific argument in support of the idea that naturally designed movements produce naturally attractive physiques.

By Dr. Steven M. Platek

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Susannah Dy/CrossFit Journal

Evolution has favored certain movements in different animals because those behaviors have produced two essential outcomes for possessors of the requisite species-specific movements: survival and reproduction—more specifically, being selected as a mating partner.

For example, the kangaroo, the kangaroo rat and the rabbit (or hare) hop. The horse and many other ungulates (hoofed mammals) gallop. Fish and cetaceans and eels swim. Big cats (lions, tigers, cheetahs) sprint and pounce. Dogs, wild and domestic, stalk, run and pounce. Each of these species-specific behaviors has evolved because it has produced a survival advantage: a rabbit that does not hop fast becomes owl food, and a cheetah that runs too slow starves. It's hard to reproduce when you're dead.

However, we often miss the other side of the evolutionary equation: these behaviors don't exist *only* because they produce favorable survival adaptations but because the favorable survival adaptations they produce are sexy.

For example, female cheetahs do not find slow male cheetahs sexy. In fact, they probably find slow cheetahs downright repulsive. Guess what: there aren't many slow cheetahs in the wild partly because they don't catch as many gazelles, but also because female cheetahs don't choose to mate with them. The male cheetah does not train to be fast by logging on to crossfitcheetahspeed.com. Rather, he is fast because his survival depends on it. Surviving, it turns out, is very sexy in the animal kingdom.

Sex and the Sit-Up

What does any of this have to do with fitness training or CrossFit? From my perspective, a lot.

Generally, physical fitness training is focused on producing a physique that is found attractive to another person. We all know there is no functional application of the leg extension, the biceps curl and the lateral raise, and there is no natural homolog to those behaviors either. Traditional fitness programs are missing the point: survival is sexy, and from nature's viewpoint survival demands functionality.

Take, for example, a large bodybuilder. For years he has trained a set of muscles in virtual isolation so that each and every strand of those muscles bulges in what he perceives as "perfection." How many of you have ever looked at one of these guys and pondered how he wipes his own ass? I have. The training for appearance has missed the point and missed functionality altogether.

So could CrossFit make a better dog? Of course it could. I can already see the affiliate: CrossFit Canine. But we don't need to, because natural selection has already done this.

On the other hand, *Homo sapiens* have had a very different, sordid evolutionary trajectory, especially when we consider the last 10,000 years. Over the past 10,000 or

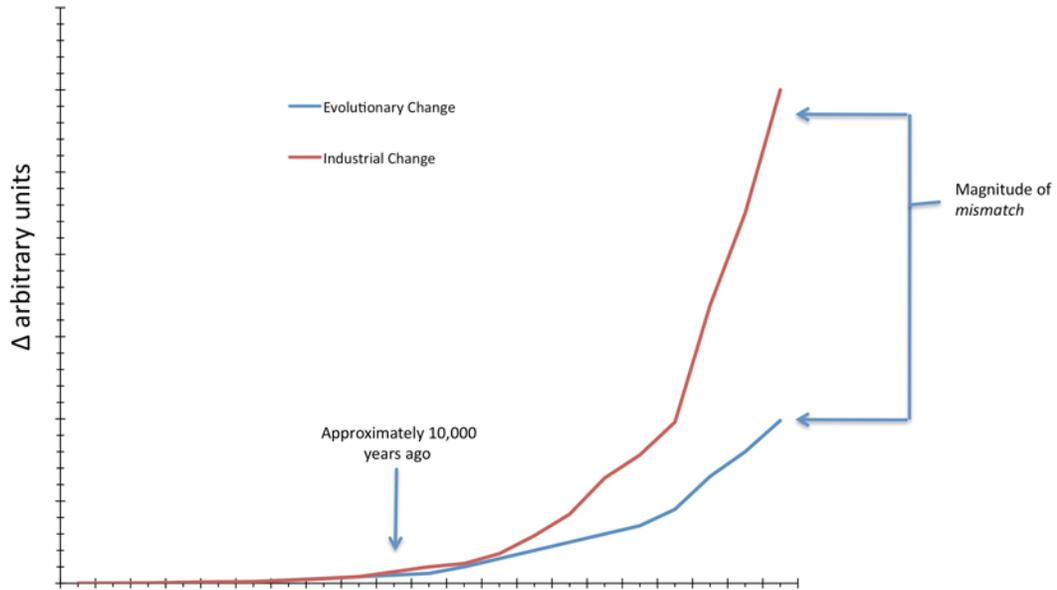


Susanah Dy/CrossFit Journal

Dr. Steven Platek believes qualities we find attractive may also indicate that the possessor is a suitable mate. Function is essential to survival, and it's sexy.

Turns out the movements designed to make us "look good" are not the movements nature intended our body to execute for survival.

FIGURE 1



Courtesy of Dr. Steven M. Platsek

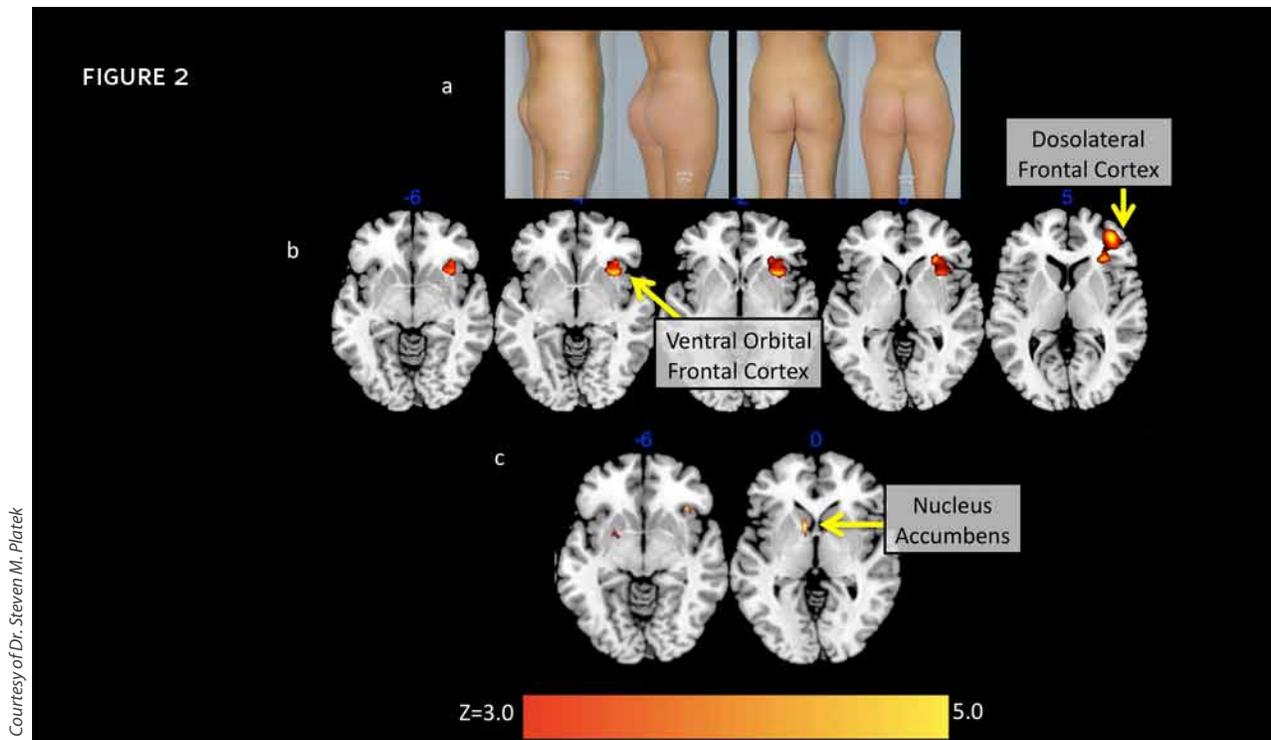
so years of human evolution, we saw the introduction of agriculture and industry. Great as these inventions appear to be for our survival, they have also been a detriment to our physical and mental fitness, not to mention the negative nutritional effects they have had. Agricultural and industrial evolution happens at a rate that is significantly, if not exponentially, faster than that of biological evolution, and it happens at a rate biological evolution cannot keep up with (Figure 1).

Think about it this way: how long does it take for your computer to become outdated? I think the current estimate is something like two or three years (max). How long does it take the current animal to become outdated or extinct? Hundreds, thousands, tens of thousands and sometimes millions of years, because in biology we are limited by the inter-generational span, or the time at which it takes a species to reproduce. For the fruit fly, this is short—1.5-2.5 weeks—and we can observe rapid evolutionary change and drive laboratory-based extinction and variation very quickly. In humans the low-end of the reproductive range is about every 14 years, but that is uncommon and the average is closer to about 20-30 years—slow as hell.

Figure 1: Theoretical plot of the mismatch between the rate of biological evolution and industrial/agricultural evolution over the past 20,000 or so years.

So what have we humans been designed to do? If you read the *CrossFit Journal*, you know: squat, deadlift, clean, press, jerk, etc. We call it “functional fitness,” and it includes all the nine essential movements of CrossFit, those that are beneficial to our everyday life. Take the squat, for example: we all have to squat at some point; it’s part of human life. Even if you no longer squat because you’re injured, obese or lazy, at some point in your lifetime you had to squat. If you ever took a first step, you had to stand up (i.e., squat) to get there. The travesty is that our society has somehow valued and perpetuated dysfunctional fitness on two levels. First, we sit still way too much in front of televisions, computers, etc. Second, we advise people to train muscles in ways that are completely maladaptive and unnatural so that they “look fit.”

Turns out the movements designed to make us “look good” are not the movements nature intended our body to execute for survival. It’s just not how our bodies were designed to work. If nature had wanted us to sit all the time, we would have never had to develop the chair. Sitting would have been part of our skeleto-muscular functional fitness. It’s not.



Courtesy of Dr. Steven M. Platek

Figure 2. Stimuli and brain-activation patterns of men while they were viewing naked female bodies.

- a. Rear oblique (left panel) and rear (right panel) images of naked female bodies that had undergone elective cosmetic surgery to enhance their waist-to-hip ratio (WHR). The images on the left of each of the rear oblique and rear panels are pre-surgical. The images on the right of each panel are post-surgical. Note that while WHR decreased in every patient post-surgery, some patients had to have exogenous adipose tissue injected into their bodies to create the optimal WHR (0.7).
- b. Brain activation when comparing men viewing post-surgical and pre-surgical images. The ventral orbital frontal cortex and the dorsolateral frontal cortex are both brain areas that are involved in reward processing and positive feelings and were active only when viewing post-surgical, optimally designed female bodies. The orange areas indicate parts of the brain that are related to pleasure and reward. They were only active when the men viewed the post-surgical bodies. Body mass index (BMI) had virtually no effect on the men's brain activation.
- c. Brain activation in men when taking into account their actual attractiveness ratings of the bodies. The men rated the post-surgical bodies as more attractive, which correlated with activation of the nucleus accumbens (NAcc). Interestingly, the (NAcc) has been called the "Holy Grail" of reward processing and is associated with the rewarding properties of various addictions (e.g., drugs, alcohol, etc.). It is the area that drives pleasure associated with sex in non-human animals. (All brain activation is scaled on a standardized Z-score.)

Back to the animals and reproduction. Natural (in this case it's called "sexual") selection favors individuals that honestly signal indicators of fitness (both types: health and reproductive success). These are not mutually exclusive in this case. Honest signals of fitness in biology include the peacock's tail. The peacock has a great, vibrant, ostentatious tail because it signals to peahens that the owner can carry the burden of a big tail and not get eaten by tigers. Seriously, that is what it means. So peahens choose bigger and more colorfully tailed peacocks to mate with because the genes that make him able to survive will be passed on to her offspring, allowing them to be selected as mating partners, and so forth. This honest signal of genetic fitness (the ability to evade predation while carrying the burden of a huge, colorful tail) is also tightly linked with signaling a decreased pathogen load. The peacock gets this way by maximizing his species-specific functional training. How about humans?

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In fact, by actively training the muscles/muscle groups that were part of nature's plan, it's my hypothesis that we also accentuate those species- and sex-specific traits that are attractive to the opposite sex.

I think a quick survey of any of the photographs at CrossFit.com supports my hypothesis. The guys are muscular, but not too muscular. They have shoulder-to-hip ratios (SHRs) that result in a V shape. Turns out science has demonstrated that girls like this to a point (1). The CrossFit girls are usually curvy—not waifs, and not too curvy. Turns out science has also shown that guys (really) like this (2-6).



Susanah Dy/CrossFit Journal

Steven Platek says, "Optimal fitness signals that you are able and healthy." Perhaps we are genetically programmed to seek out able, healthy mates.

There is a point to all this: optimally designed men and women experience a plethora of health and survival advantages that are found sexy, just like we see in animals. In other words, optimal fitness signals that you are able and healthy. Men who have high SHRs and women with low WHRs are healthier physically and mentally, experience increased longevity, and are relatively immune from the “modern” set of pathogenic conditions such as heart disease, diabetes and obesity.

Additionally, men with high SHRs and women with low WHRs are found to be sexy the world over, and recent evidence suggests that optimally designed bodies actually activate parts of our brains involved in reward; i.e., when we see a body that is optimally (I would also say functionally) designed, parts of our brain that cause us to experience reward become excited (7-9) (see Figure 2).

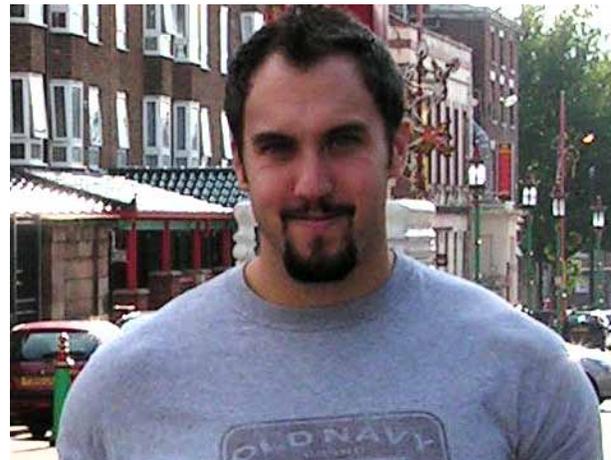
Thus, it becomes abundantly clear that functional fitness in the manner prescribed by CrossFit produces both healthy and attractive individuals.



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Courtesy of Dr. Steven M. Platek

About the Author

Steven M. Platek (PhD biological psychology, University at Albany-SUNY) is associate professor of psychology in the School of Liberal Arts at Georgia Gwinnett College and associate researcher at the MARIARC imaging center of the University of Liverpool. Platek is director of the Evolutionary Cognitive Neuroscience Laboratory (ECNL), where he and his students have identified the unique neural substrates associated with self-referent phenotype matching (facial resemblance), self-face recognition, kin recognition, and attractiveness of female body morphology and male facial characteristics.

He has published over 60 scholarly peer-reviewed articles and edited three academic volumes, and he is editor-in-chief of the journal *Frontiers in Evolutionary Neuroscience*, associate and managing editor of the journal *Evolutionary Psychology*, associate editor of the journal *Personality and Individual Differences*, and consulting editor for the journal *Human Nature*. He also serves on the editorial boards of *The Journal of Social, Cultural and Evolutionary Psychology*, *The Open Ecology Journal*, *Scientific Research and Essays*, *The Open Neuroimaging Journal*, *The Open Evolution Journal*, and *The Journal of Scientific Psychology*. A new focus for Platek and his team is to study the neurocognitive and psychological effects of various fitness-training regimens, particularly functional fitness vs. non-functional fitness movements. He and his wife Austen are also avid CrossFitters, and he will be going to a Level 1 Certification very soon as a guest of Coach Greg Glassman.