SOUL SOLE 2011

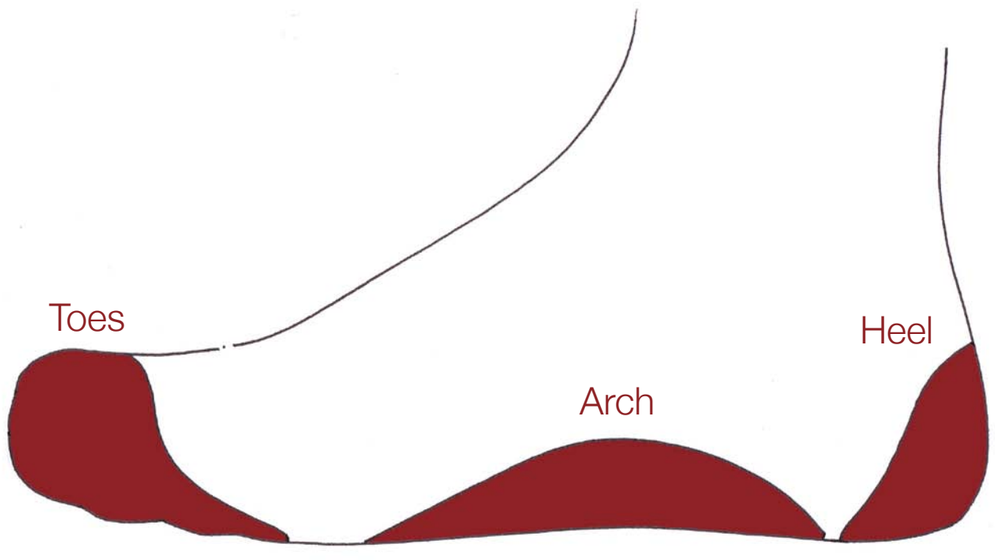
"...Prior to the invention of shoes, people had healthier feet." Adam Sternbergh

For years, shoe companies have developed new springs, cushions and supports to cram into their athletic shoes to give them a "sporty" appearance. Unfortunately these adjustments were often made in an effort to intrigue buyers and increase prices, rather than improve shoe functionality and foot health. A number of recent studies, focusing on foot health in shod and unshod communities have come to the conclusion that modern shoes are actually hurting your feet...rather than helping.

A few shoe companies seem to be realizing the error in attempting to improve the foot's abiltiy and have developed shoes they claim contain "barefoot technology" in the hopes of drawing the more health-concious buyer. Although some of these products may actually improve performance and allow the foot to move in a more natural way, the companies that produce them believe that these robust slippers deserve a price tag that's actually higher than bulkier, traditional athletic shoes!

Vibram Five Fingers Kso Trek: $168

Vivo Barefoot Aqua M: $150



Foot Pain

The most common locations for foot pain are the toes, arch and heel of the foot: areas that come into the most contact with traditonal shoes. My goal was to develop a shoe that would allow the human foot to move and stand in a position most like it would when barefoot. In order to accomplish this goal I needed to remove the arch and sole cushioning that is used in all athletic shoes and replace it with a simple flat sole. In addition I needed to develop some form of toe support that allows the toes to spread on impact as they would when barefoot, but also allows the toes to fully bend, an impossibility with full rubber or foam soles.

Modern consumers have forgotten that for thousands of years humans hunted, ran, and traveled vast distances without the use of shoes. Even today there are unshod communities throughout the world that don't wear shoes because they are simply unnecessary and hold no cultural benefit.

Artifact evidence suggests that the earliest examples of shoes were simple platforms strapped to the foot, used to protect the wearer from hot volcanic ash and lava. This shows that the invention of shoes was originally meant to protect feet, rather than enhance them. The traditional shoes shown here all lack the cushion and support of modern athletic shoes, but have proven themselves through decades of every-day use throughout the world.

ESPADRILLES

These flat soled shoes originated in Europe, but are a popular traditional shoe worn in the Middle East and Latin America. Recently a number of modern shoe manufactures have revamped the traditional espadrille, altering materials and price to appeal to the American market.

Materials: Canvas, Cotton, or Leather upper. Rubber or Jute Rope sole.

RUBBER SANDALS

These simple sandals are favored by villagers and travelers throughout Latin America for their durability and low cost. They are made in a multitude of styles but all consist of a thick rubber sole and some form of rubber strap, often in a crossed configuration.

Materials: Rubber straps, generally cut from used intertubes. Rubber sole cut from a used car tire.

MOCCASINS

Moccasins are an age-old form of footwear predominately worn by Native Americans. They have been adapted numerous times for the commercial shoe market in the form of the leather boat shoe or moccasin style slipper. Possibly the simplist of all shoe designs, the moccasin is durable, extremely lightweight and only acts as a barrier between the foot and environment hazards, rather than cushioning or supporting it.

Materials: Deerskin Leather

SOUL SOLE IDEATIONS

This set of ideation sketches allowed me to choose a form that could accomplish all of my design problems, while still retaining a desirable style.

The biggest challenge with these concepts was creating a simplistic form with a minimum of materials that could still protect the foot and stay securely in place.

Although all these shoes have a similar form language, some are more masculine or feminine than others. I had to adapt these concepts into a successful unisex design.

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SOUL SOLE DRAWINGS

These drawings clearly illustrate the simplicity in components of the Soul Sole design. The shoe consists of three elements:

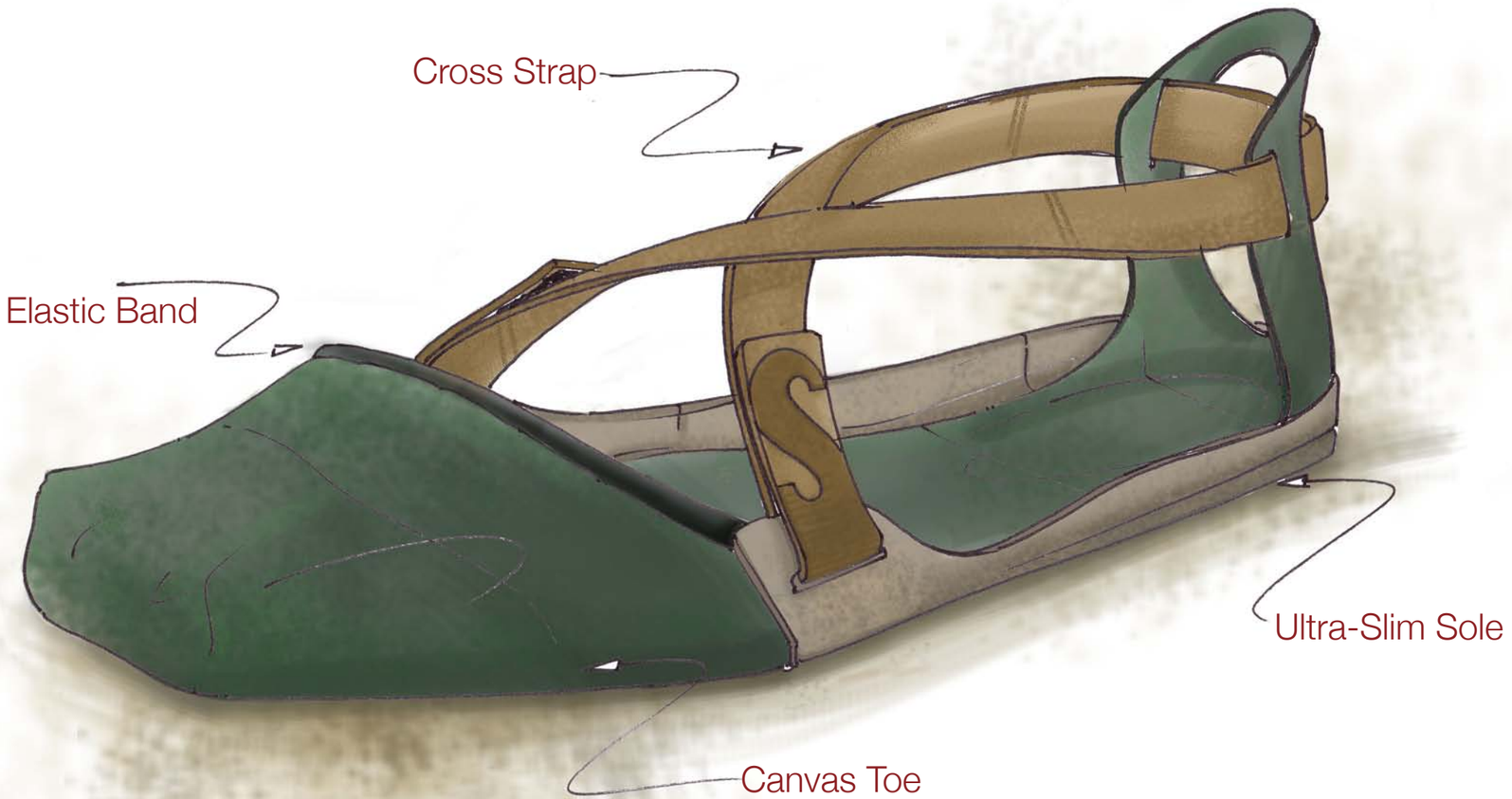
Leather Strap
+
Canvas Body
+
Rubber Sole

This design would allow for an incredibly simple fabrication process when compared to the manufacture of traditional footwear, meaning a drastic cut in cost.

SOUL SOLE FINAL DRAWING

My final design reveals a radical return to basics for the contemporary shoe design market:

One leather strap secures the foot in place with precise velcro adjustment. Rather can covering the heel, the Soul Sole actually embraces it, relieving pressure on the achilles tendon and improving ventilation. With the toe design, I left convention behind and developed a full canvas cover that wraps under the toes to act as the sole as well. This design allows the toes to spread upon impact and greatly reduces the material under the curve of the toes that generally obstructs toe movement and negatively affects running and walking posture.
A slim rubber sole protects the heel and arch from environmental hazards but doesn't elevate the sole or arch, effectively training the user to the feel of walking without the cushion of modern shoes.



William Van Zee
Human Evolution
4/18/2011

Final Project Summary

My final project is a shoe design, informed by research that suggests that modern athletic shoes actually harm the human foot rather than help it. Hominids have been walking upright on two feet since before their expansion out of Africa, to think that the same exact feet today are incapable of walking the environments we have created is absurd. Adam Sternbergh's article in New York Magazine: "You Walk Wrong" provides evidence that since the creation of shoes, humans have actually adapted their walk to fit their shoes, unfortunately this adaptation has resulted in widespread lower extremity ailments. He criticizes the shoe industry further by stating that shoes obstruct the natural motion of walking because the solid sole design simply cannot bend in the same location and direction that the foot can. A 1992 study of Indian children quoted in Joseph Froncioni's essay "Athletic Footwear and Running Injuries" revealed that children who began wearing shoes at an early age, were much more prone to foot problems such as being flat-footed, evidence that constricting children's feet can have harmful long-term effects. A more recent study quoted in Ross Tucker's article "Running Shoes: Solution or the Problem?" stated that between 40% and 70% of runners are injured every year, data that seems to revoke claims by shoe manufacturers that shoes minimize injury and improve performance. This evidence all points to the fact that expensive running shoes are not in fact more beneficial to your feet than simple inexpensive shoes or walking barefoot. It seems that despite the extensive research and money funneled into shoe design, humans cannot improve upon the foot's 4 million year old design, and our attempts seem to actually impair it. The misconception that shoes are necessary and prevent injury and the continued ignorance of shoemakers forced me to think of inexpensive shoe alternatives. I was inspired by traditional footwear that acts to protect the sole of the foot from environmental hazards and allow for almost completely natural locomotion. These simple shoe designs used around the world reveal that shoes don't need fancy springs or cushions to allow the foot to work the way it was meant. My goal was to develop an inexpensive shoe that could be worn daily, and would allow wearers to re-adapt their stride to a more natural posture and hopefully alleviate common foot ailments.

William Van Zee
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Annotated Bibliography

1. Froncioni, Joseph. "Athletic Footwear and Running Injuries." Reproduced on Quickswood, 22 August 2006. 16 April 2011. http://www.quickswood.com/my_weblog/2006/08/athletic_footwe.html

This article has an in-depth history of the shoe starting from the earliest evidence of shoes, found in North America, through the advent of the running shoe by John Boyd Dunlop in the 1830's and all the way up to the popularization of the modern athletic shoe in the early 1970's. This history clearly reveals that shoes were originally developed for the sole purpose of protecting the foot, but that in the last few decades shoe companies have realized the potential of marketing shoes and increasing prices with fancy support systems. The article also cites a couple of foot studies that all point conclusively to the fact that people who are raised without shoes have healthier feet than those who wear them daily.

2. Sternbergh, Adam. "You Walk Wrong: It took 4 million years of evolution to perfect the human foot. But we're wrecking it with every step we take." New York Magazine, 21 April 2008. 16 April 2011. http://nymag.com/health/features/46213/

This article has received a lot of media attention and criticism, partly due to the fact that it was published in a popular magazine rather than a science journal but also because the author makes many bold claims without specific evidence to prove it all. Despite this fact, the article does contains information taken from a number of credible studies including one that revealed the forces of impact on the human knee are considerably less when walking or running barefoot, than when wearing walking shoes. The article also analyzes some of the design reasons that contemporary shoes simply don't allow the foot to move in the way they naturally should.

3. Tucker, Ross. "Runnin Shoes: Solution or the Problem? Running shoes and running injuries: Do the shoes actually cause the injuries?" The Science of Sport, 4 March 2008. 16 April 2011. http://www.sportsscientists.com/2008/03/running-shoes-solution-or-problem.html

This article was written by a doctor with a degree in Exercise Science and Sports Medicine. Published in an online science blog, the author simplifies the idea that shoes are harmful to wearers into a couple key points. Most importantly this article shows the shoe manufacturer point of view, reminding readers that all shoe companies have a goal of differentiating themselves from other companies in order to make a larger profit. This ultimate goal is not consistent with the need for shoes to protect the wearer and enhance performance, but rather a need for companies to quickly evolve their products with new features to interest prospective buyers.