



**XXXI CONGRESO ALAS  
URUGUAY 2017**

3 - 8 Diciembre / Montevideo

Las encrucijadas abiertas de América Latina

La sociología en tiempos de cambio

Sport shoe wear as technology:  
socio-technical trajectories of high-heel cushioning

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### RESUMEN

Los calzados disponibles en el mercado dependen de un tipo de producción: una red de actores de los mundos empresarios, médicos, especialistas y consumidores. En esta presentación se analizan elementos del calzado que han pesado en la construcción del running como fenómeno creciente y por tanto en la innovación del artefacto técnico zapatilla. A principios del siglo XX los atletas profesionales usaban zapatillas deportivas pesadas, duraderas y poco flexibles. Desde los 60s y 70s surgieron nuevos intereses de los productores de zapatillas y aparecieron innovaciones que marcan la tendencia hasta hoy. En un periodo más reciente, del siglo XXI, se reevalúa la necesidad de mantener una pisada más neutral, y por tanto un calzado más minimalista.

En esta presentación se atiende principalmente al periodo entre 60s y 80s: se ve cómo nace la innovación de zapatillas con talón, cómo se impuso con fuerza en el mercado, imponiendo un standard en las costumbres corporales actuales de millones de personas esparcidas por el mundo. Varios pioneros contribuyeron hace más de medio siglo a la difusión del running y de calzados nuevos. En este caso tomamos inicialmente al menos cuatro actores-autores determinantes para esta expansión: Arthur Lydiard, Bill Bowerman, W.E. Harris y Phil Knight. Estos actores claves, desde diferentes posiciones -entrenadores, médico, y empresario- escribieron de su experiencia relatando la manera en que los nuevos calzados entraron al mundo.

Hoy el mundo acolchona las zapatillas de todas las marcas y estilos, y la costumbre de usar zapatillas con talón elevado está ampliamente difundida y tiene por tanto amplio impacto social y en el concepto de cuerpo y mecánica corporal. ¿Qué autoridades legitimaron esta difusión: el público deportista y/o general, la ciencia, empresarios intuitivos, el mercado, o alguna base anatómico-funcional?

Esta discusión se enmarca en un proyecto de investigación más amplio en el que se busca encontrar nuevos patrones de movilidad que escapen a los imperativos económicos y políticos mayoritarios, y



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entender los condicionamientos de cómo la gente se mueve escapando a los mecanismos de inercia de un sistema maquínico inútil.

### ABSTRACT

The shoes available in the market depend of a certain type of production: a network of actors of the business world, as well as doctors, specialists and consumers. In this presentation the aim is to tackle elements of footwear that have influenced in the construction of running as a growing phenomenon, and therefore in the innovation of the technical artifact that are sport shoes. At the beginning of the XXth century professional athletes used sport shoes which were heavy, unflexible and durable. Since the 60s and 70s new interests arised by part of the shoe companies and new innovations appeared which mark the tendency unto the present. In a more recent period, in the XXIst century, appears a reevaluation of the type of foot strike required to run, and hence, a more minimalist sport shoe.

This paper attends mainly to the period between the 60s and 80s: how the innovation of higher heeled shoes, how it entered the market, setting a standard onto the corporeal customs of today of millions of persons throughout the world. Several pioneers contributed more than a half century ago to the spread of running and new types of shoes. In this case we consider at least four key figures for this expansion: (1) Arthur Lydiard, (2) Bill Bowerman, (3) W.E. Harris, and (4) Phil Knight. These key actors, from different positions --trainers, medical doctors, and businessman-- wrote of their experience showing the way in which the new shoes came to the world.

Today the world cushions their shoes of the majority of the brands and styles, and the custom of using shoes with high heels is massively spread and has, in consequence, a wide impact at a social level, and in the concept of body and corporeal mechanics. What authorities legitimated this spread: the general and/or sport publics, science, intuitive businessmen, the market, or some anatomic-functional base?



This discussion is framed in a larger scope of research in which new patterns of mobility are sought, that may escape to the economic and political imperatives of the majority, and understand the conditionings of how people move, escaping from the inertial mechanisms of a useless mechanical system.

### **Palabras clave**

teoría actor-red – trayectorias socio-técnicas – innovación

### **Keywords**

actor-network theory – socio-technical trajectories – innovation



## **I. Introduction**

### **From "Straights" To Infinite Shoewear**

There was a time when all shoes were created equal. That is, there was no left nor right, just "straights". And there were several times in which shoewear shifted it's forms, functions, aesthetics, and its own customs. And went back to be all the same again. This of course is an overstatement, but it serves the purpose of the presentation: to present some iconic moments in the development of this technology, and to place questions on how this may affect, or not, the ways in which sport shoes are used nowadays. This research is part of a PhD study on ultramarathon which is ongoing through the first year.



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## II. Theoretical/Conceptual Framework

### 1960s-1980s

Of course today we think of sneakers as an object that presents no problem what so ever. And however, reviewing how it came to be can show how this normality once was not, and how they affect athletes decisions, technique and view. After all, there is a regularity in the way high heeled shoes are used which make them conventional, and the birth of this convention is what was intended to put forward. For Becker (2006), this means explaining how a social process becomes stable:

*Social life exhibits, after all, substantial regularity, People do not do whatever comes into their heads at any moment. On the contrary, most of the time they do things as they have done them before. In a scheme that emphasizes openness and possibility, that regularity requires explanation. [//] I find that explanation mainly in the idea of "convention."*

Enough reasons compell to pay attention to the period 1960-1980s in how shoes changed. Mainly, this time proposed:

1. a different contact between shoes and foot
2. a different relationship between foot and ground
3. the reach of general sport shoes got to a more massive public
4. and the general functions of shoes changed in a social way

### A New Standard

All of these impacts were created, or rather impulsed, or began, with just a few key players from different fields, mostly complementing each other's ideas, changing the attention to a side or with minor modifications, and in the end setting a new standard for footwear. The creation of a new standard is at the center of the theoretical interest here. How does a new standard come to be? How does it remain? And what challenges lay ahead?



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### III. Methodology

This paper runs through the concept of convention (Becker 2006) and how a specific case became regularized due to specific actions, in this case how the innovation of sport shoes is pushed forward through 3 main agents from the sports industry who narrated their stories through written texts in the form of sport manuals, and a memoir.

### IV. Analysis and Discussion

First, a minimum of context from previous historical period: let us consider the previous half century, 1910-1960 (or perhaps even a century: 1860-1960). Before the massification of the casual multipurpose all-use-shoe, the kind of footwear people used had several differences from what we see today as daily shoes. In the past shoes were:

- Less informal, more serious, there was no casual use footwear, just formal shoes. Going together with the rest of the clothes, more or less job-like: ties, shirts, pants, even hats, just think black and white pictures.
- Aside from formal shoes, there were shoes for different sports, so each sport could apply a specific function, this still happens in some sports up to today: Formula 1, tennis, track running, boxing, etc. There was no generic all use shoe.
- The materials used in the past were in general much heavier, less flexible, and perhaps more durable.

#### **Now What Changed Near The 1960s?**

The most important change was the slow but gradual popularization of jogging as a habit. Even at that time it was still a novel activity. Doing exercise was increasingly seen as a way to avoid sedentarism, and the cardiovascular benefits of running were made well known through a popular coach that is recognized by virtually the entire world up to the 21st Century: Arthur Lydiard.

#### **Lydiard's *Running To The Top* (1962)**

Lydiard was a promoter of the slow gradual aerobic training to build up the blocks of the basis of all further improvement. This of course can sound common sense, but a sense that was not obvious at the time, and not always remains clear to high performance



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training were immediate results so commonly push and press. Also he insisted on the possibility to reap benefits of training not only for elite athletes but for the general population as well. Here is where his positioning in running history becomes important: he was a pioneer and covered a wide range of topics. Among them, we shall pay attention to how he saw footwear and foot strike.

"Shoes and Feet" are covered to signal cares that the runner should have to avoid injuries. Overall the user of shoes should always be attentive to the continual daily use that stress the materials, and such stress translates to the body: through feet, to knees, hips and even to the bones. According to Lydiard (1962: 159) "People who run on the balls of their feet and cannot get their heels down are much more liable to injury than natural heel runners." This statement lays the author's position for the rest of the chapter: one should find proper cushioning to avoid bodily stress.

In his book, Lydiard gives several reasons to seek for good shoes, but this does not mean one should just follow a trend and buy whatever is available, the knowledgeable runner should aim for a proper sole as well as for an additional feature: which is flexibility. This, together with the athlete's proper stretching allows for a full range of movement of muscles working together. Here Lydiard's (1962: 161) preventive measures:

*[Injuries to joints and bone wear are invariably caused by poor buffers and jarring on hard surfaces.] You need padding which gives you a recoil from the ground. [Get good shoes.] But be warned against the hype surrounding some of the modern high-cost running shoes with their built-in aids to better running. It is a fact that most runners have no experience of pronation or supination until they start running in these hitech shoes. Another fact is that some of these shoes lack the essential sole flexibility which allows the feet to function properly.*

### **Bill Bowerman's *Jogging* (1967)**

On the other side of the ocean came another famous coach, also related to Lydiard, and one from whom he learned of his passion to popularize the sport: William Bill Bowerman. He also prepared athletes for Olympics and wrote the 1967 book *Jogging -- A Physical Fitness Program For All Ages*. This is a slim book which includes a training log and hovers over several topics. Two of them of interest here are shoes and shoe landing.

The overall recommendation through the book is to not get distracted by the technicalities but search for a smooth, natural movement. When it comes to shoes he argues that one should use robust "sturdy" materials (Bowerman 1967: 33), but only





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referring to the content of the materials in the shoe, and not to the shape. On the other hand, when he explains on running form for footstrike he states that one should get to know three different options and choose freely among them, that is, he leaves an open window of choices: whatever is most comfortable, efficient and works for each. The 3 foot landing styles are (Bowerman 1967: 27-28):

1. Heel-to-toe | According to the author, the least wearing for long distance because it distributes the pressure.
2. Flat-foot | A variation of the previous. The author does not speak here of strikes por minute but a certain rhythm of speed is implied because he notes on a "quick, light action".
3. Ball-of-the-foot | The type of step for sprints that we did as children "up on your toes for quick starts". Women, notes Bowerman, are more inclined to use this technique since they would be more used to high heels.

On a separate note one could add that the general conversation on the topic of foot strike and footwear not always connect one to another. When looking how the Kenyans run Finn (2012) argues that there does not need to be a connection between the two: that is, there are runners who use high heels and land with the ball of their feet, and by the same coin those who have bad technique with the same kind of shoes: there is no one direction causation of one to the other. In a similar trend of attention a popular blogger (Larson 2014) argues that one should not take as the same thing the exact time in which the foot touches the ground and the time when the runner loads most of his body weight.

### **Phil Knight's *Shoe Dog* (2016)**

Now we have covered enough terrain for a jump, after the two coaches comes Phil Knight, who trained with coach Bowerman and began together the company that would become known as Nike. Now what was the rationale behind the high heels that became popular with the Nike Air models?

Through the 1960s the idea behind the company, still under the name *Blue Ribbon*, was to leap into a market opportunity and taking the risks of beginning something new: connecting Asia with US production. The idea of developing new soles for shoes came hand in hand with Bowerman's home made experimentations: he made all kind of explorations, documented (Hollister 2008) and fictionalized in different sources. In the movie *Without Limits* he even detects the subtle differences between one foot and



another and draws the shape with pencil and paper of the individualized foots of each of his athletes.

Bowerman's search for ways of improving his trainees had no end: he mixtured different natural ingredients to replace the athlete's salts and electrolytes. This and others of his experimentations place Knight (2016: 108-109) in the position to say that he was trying to invent Gatorade, as well as for soles trying to invent Polyurethane. A home made attempt by Bowerman directed him to a waffle machine and was the inspiration for the Nike Cortez model in 1976.

A year later, an aerospace engineer, M. Frank Rudy, and his partner Bob Bogert, suggested using a new material and so Nike Air was born after Mr. Knight gave them a try run and approved them as good to go. Now this seems enough reason to try a new shoe model, but it may seem a bit too little support for a new world custom, the creation of a new standard: high heels. Of course Bowerman has plenty of merit with his curiosity and trial and error advancements, nothing underrated behind this. But where is the medical, technical, systematic research, and academic discussion behind these market novelties? They would come later, but in a much less clear light and impact, which is motive for study.



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## **V. Conclusions**

### **Accounts That Derived To A New Type Of Shoewear: High Heeled Sport Shoes**

When a project develops many factors come into play: some explanations focus on the way money is moved, taken and placed; other factors can be the abilities, training, needs and desires of specific key players, which produce an offer in the market: businessmen have a role in technology, and in social life.

The amount of actors and objects that affect social life has no end. However, to signal some key points Science and Technology Studies (STS) have been able to detect iconic sources that produce wide spread outcomes. Most studies, according to Fraga (2017), lay attention to three institutions: state, university, and companies. But, Fraga notices, "Little has been published on the part of businessmen in STS processes". This paper intends to guide towards that direction. Businessmen work together with other realms of social life, in this case, with sport coaches, medics, engineers, and many other that do not appear in this brief description of events.

Never before in history did such a small group have such a wide spread effect in a wide as the world population. Depending on the view, one could describe the development of a new standard as of mere financial interest, or rather that those involved want to positively change the world, anyhow these people are, as Shapin (2008: 309) describes tech ventures in the US west coast) in the business of future making, of "technologies that may become world standards".

Businessmen and there actions are equally praised and demonized, sometimes for the same reasons. What is of essence here is to show upfront the push that certain ideas have and how this leaves, or not, a certain margin for further improvements, as well as questions on how these standards affect runners, the general population, and how bodily perfection and decision shift from there on.



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