

HORSE RACING: BREEDING BY THE NUMBERS

Researched and Written
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PART 1: BREEDING FOR BREAKDOWNS

"As the 20 horses were being loaded into the starting gate for the (2008) Kentucky Derby, with Eight Belles — standing in post position five — poised to make her bid to become only the fourth filly in history to win America's most important race, Ellen Parker, a thoroughbred breeding consultant and analyst in Kentucky, said quietly to her husband, "I just hope this filly doesn't break down." [1]

Eight Belles was euthanized on the track at Churchill Downs, just minutes after she finished second to Big Brown.

Eight Belles broke her cannon and sesamoid bones which led to her ankles collapsing, said Dr. Larry Bramlage, the on-call veterinarian for the American Association of Equine Practitioners. This is the same type of break suffered by 2006 Kentucky Derby winner Barbaro in his off hind. It eventually led to his death after numerous surgeries and treatments, all which failed to save the horse's life.

What Parker was referring to is the bane of horse racing in today's syndicated commercially-driven industry where money, greed and short-term gains preside over the welfare of the horse. A shift in the industry in recent decades and the maniacal frenzy for speed at the expense of durability and soundness has all but decimated a once genetically diverse and robust species.

Over time, especially in the last four decades, the manipulation of the gene pool of the Thoroughbred and relentless inbreeding at the hands of unscrupulous breeders has created inherent weaknesses in the bloodlines that have led to

dangerous flaws in physical conformation. In the tragic case of Eight Belles, Parker had identified a series of foreboding crosses stemming from a line notorious in the Thoroughbred breeding world for unsoundness.

"What so concerned her on the eve of this Derby, what she found so disturbing, even infuriating, traced to her unshakable belief that Eight Belles was carrying in her DNA the seeds of her own destruction.

"Specifically, in the pedigree of this speedy gray filly, Parker had seen the same kind of dangerous crosses — in her case, lines of known unsoundness triply crossed behind an unsound sire line — that she believed had contributed to the racetrack breakdowns and deaths of such prominent horses as Ruffian and Go For Wand, of George Washington and Pine Island, and even of Barbaro.

"Indeed, when Ellen Parker first perused the bloodlines of Eight Belles, she saw a danger clear and present: a family tree that bore three branches of the extremely brilliant but unsound racehorse Raise a Native, who was a very muscular chestnut, heavy on the front end, who had won all four of his starts before he broke down in front and limped off to stud." [2]

As it happens, today's Thoroughbred population is so saturated with the blood of Raise a Native's sire Native Dancer — speed at the expense of endurance — the threat to the viability of the breed is in question. For example, all of the starters in the past three Kentucky Derby's (2008, 2009 and 2010) carried the gene pool of Native Dancer, many of them multiple times. [3, 4]

Moreover, the blood lines of the current 2011 Derby contenders are equally infused with Native Dancers volatile genes, some of which ominously parallel the pedigree of Eight Belles in terms of the degree inbreeding and multiplicity of crosses.

This proclivity for the Native Dancer bloodline is not limited to North America but rather persists throughout the entire global Thoroughbred industry.

[1] http://sports.espn.go.com/sports/horse/triplecrown08/columns/story?columnist=nack_bill&id=3399004

[2] Ibid.

[3] <http://www.pedigreequery.com/>

[4] <http://www.kentuckyderby.info/kentuckyderby-history.php>

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PART 2: RISE OF THE ILL-FATED GENE POOL

It is widely understood that the ancestry of the Thoroughbred dates back over 300 years to three foundation stallions – the Darley Arabian, the Godolphin Arabian and the Byerly Turk – hailing from North Africa and the Middle East.

During the 17th and 18th centuries these stallions were bred to select mares, native to Britain, and so began the process of selective breeding.

In 1791 the first English-based “stud book” was compiled by James Weatherby.

Through his own research and by consolidation of his privately kept pedigree records the foremost volume of the General Stud Book was published listing 387 mares, each of which could be traced back to Eclipse – a direct descendant of the three founding sires of the Thoroughbred breed.[1]

By 1873 the American Stud Book was in print. Founded by Colonel Sanders D. Bruce who relentlessly researched and collated the pedigrees of American Thoroughbreds, it was shortly thereafter taken over by The Jockey Club under whose jurisdiction it still remains today.

As in the case of the General Stud Book, the extended pedigrees of any racehorse in North America disclose an irrefutable link to the original founding sires and dams, in particular Eclipse (90%) who was a dominant undefeated racehorse and phenomenal success as a sire.[2]

Fast forward to the 20th century.

By mid-century the North American fervor for refinement of the breed had begun its fateful course of speed at the expense of soundness. A paradigm shift in the deep-rooted culture of the racing world occurred which would interminably transform the “Sport of Kings”.

Prior to this development the majority of the preeminent stallions and mares were controlled by the richest sport patrons belonging to some of the oldest established families in the US – the Whitneys and Woodwards, the Bradleys and Wideners and the Klebergs and Mellons.[3]

A fundamental rule that these families persevered to abide by was the diligent effort to improve the breed from a multi-attribute perspective; speed, stamina and soundness.

In the 1950’s the gradual dissolution of these families together with the ensuing auction sales of their unparalleled bloodstock changed the once stately nature of

horse racing. Commercialization of the industry now loomed - an ominous portent of impending doom to the integrity of the Thoroughbred.

Motivated by the prospect of increased profits the commercial breeders laid a foundation for what would become the archetype of the modern Thoroughbred.

Rather than durability and resilience they opted to fashion an aesthetically pleasing horse with pedigrees replete with celebrated status, in particular those sires with unsurpassed speed thus drawing the biggest price at the most extravagant yearling sales. Designer "genes" became the sought-after prototype.

Reminiscent of the eugenics movement during the Hitler regime the development of perilously inbred pedigrees fatefully arose.

The influx of vulnerable gene pools began predominantly with the immortal Native Dancer, nicknamed the "Gray Ghost" because of his color.

Native Dancer's brilliance includes a record 21 victories in 22 starts, tarnished only by a loss to Dark Star in the 1953 Kentucky Derby. However accomplished his racing career was, it was nonetheless short-lived.

"By the time Native Dancer had reached age 4, when he started only three times through August, he had gotten so sore due to a chronic inflammation in his ankles -- he reportedly had developed osselets, bony growths along his ankle joints -- that his owner and breeder, Alfred G. Vanderbilt, was forced to retire him to Sagamore, Vanderbilt's Maryland farm." [4]

It was here at Vanderbilt's Sagamore farm that Native Dancer went on to even greater renown as a stud, emerging as one of the most influential sires in the history of the breed.

In particular, his grandson, the Canadian born Northern Dancer, was the founding sire of the most fashionable and prolific sire line in the world.

After Northern Dancer's death another Native Dancer grandson called Mr. Prospector - extraordinarily fast but unsound - moved to the top of the commercial market to become the next superstar sire who would continue to infuse the bloodlines with speedy but compromised genes in terms of soundness.

Multiple generations of calculated selective breeding has resulted in a very narrow gene pool wherein Native Dancer's bloodline has been estimated to be found in about 75% of all US thoroughbreds. [5]

In fact, nearing the end of the 1960's the pursuit of ultimate speed and mounting

competition infiltrated the global horse racing industry.

Through the use of shuttle stallions major racing jurisdictions in Europe and the UK as well as the Southern Hemisphere (i.e. South America, Australia and New Zealand) started to cross-breed their indigenous long-standing bloodlines with Native Dancer's pedigree, most notably Northern Dancer and Raise a Native, grandson and son respectively.

As a result of commercialization, market forces and greed the entire global Thoroughbred population is now so inundated with the blood of Native Dancer that any counterbalances that would thwart the passage of these vulnerable genes has virtually been absorbed leading to an escalation in the amount of inbreeding currently present in the racing world.

As the gene pool shrinks it brings with it a most undesirable trait.

"Like hemophilia in the Russian royal family, Native Dancer's line has a tragic flaw. Thanks in part to heavily muscled legs and a violent, herky-jerky running style, Native Dancer and his descendants have had trouble with their feet. Injuries have cut short the careers of several of his most famous kin, most notably Barbaro, a great-great-great-grandson who was injured during the Preakness Stakes and was later put to death." [6]

Despite 135 years of championship breeding, just two bloodlines dominate the sport at the present time. The blood of Native Dancer and Seattle Slew, out of the British Nasrullah line, courses through the veins of nearly every prominent race horse running today. [7]

[1] <http://www.natureezine.com/Art/2977/283/Thoroughbred-Horse-History.html>

[2] http://sports.espn.go.com/sports/horse/triplecrown08/columns/story?columnist=nack_bill&id=339900

[3] <http://www.thoroughbredreview.com/eightbelles.htm>

[4] Ibid.

[5] <http://online.wsj.com/article/SB120968356843561083.html>

[6] Ibid.

[7] <http://www.lifeshlittlemysteries.com/which-kentucky-derby-winner-is-the-biggest-stud-0746/>

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PART 3: COMMERCIALIZATION – THE DESCENT OF THE THOROUGHBRED

Racing has always been anchored in prestige, money and entertainment merit.

Unfortunately, as the desired qualities in the race horse shifted from endurance and robustness in favor of speed and aesthetic allure, the grandiose scale of expansion of the industry developed such that these creatures are now the basis of global financial empires.

The 1970's and 80's proved to unearth the establishment of large partnership groups that would control the major proportion of breeding and Thoroughbred ownership on a global basis.

Although not the only syndicates, two of the most influential of these organizations are the Coolmore and Sheikh Mohammed's Darley operations.

Together they comprise the world's biggest marketers of stallions, with breeding bases spread throughout Britain, Ireland, America and Australia. Each of these operations breed heavily from stallions descended from the 1960s North American flat racing champion runner, Northern Dancer – the grandson of Native Dancer.

With such dominance and the inherent and fierce competition that spontaneously arises between economic super powers, the prices for young unproven bloodstock sky rocketed.

"Prices for young, untried horses reached phenomenal levels, with \$13.1 million being paid in 1985 for the Nijinsky yearling Seattle Dancer. More extraordinary was the \$10.2 million paid for the Northern Dancer yearling, Snaafi Dancer, who – despite the huge price on his head – was never fit or fast enough to race and was found to be infertile when tried at stud." [1]

With such autonomy and wealth-infused empires governing the racing industry therein lies the inevitable; an influence so formidable that there are few counteractive forces to prevent the disquieting proliferation of an ever-growing narrow gene pool.

The control of the most sought after stallions and the financial capacity to outbid anyone but each other lends itself to indeterminate, yet measured compromise of the genetic pool of the modern Thoroughbred.

One need only look at the reigning sires of our times and their profuse liaison with the recurrent Native Dancer genes.

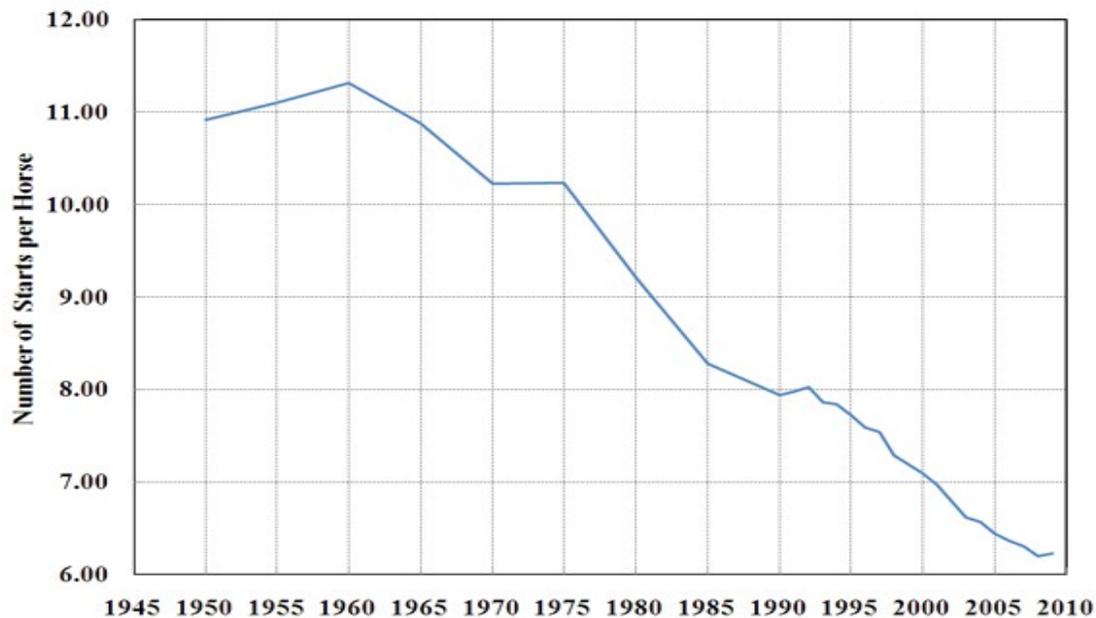
Table 1 shows the top twelve sires in the world for 2010.

Table 1. The 2010 World Top 12 Stallions/Sires: Bloodlines
 Source: <http://www.pedigreequery.com>

SIRE	FARM	LOCA- TION	PRIMARY BLOODLINE	PROMINENT SIREs IN PEDIGREE
A.P. Indy	Lane's End	KY	Nasrullah	Bold Ruler, Seattle Slew, Secretariat
Smart Strike	Lane's End	KY	Native Dancer	Raise a Native, Mr. Prospector
Distorted Humor	Winstar	KY	Native Dancer	Raise a Native, Northern Dancer, Mr. Prospector
Giant's Causeway	Ashford Coolmore	KY	Native Dancer, Nasrullah	Northern Dancer, Bold Ruler, Secretariat
Street Cry	Darley	KY	Native Dancer	Raise a Native, Mr. Prospector
Galileo	Coolmore	IRE	Native Dancer	Raise a Native, Mr. Prospector
Montjeu	Coolmore	IRE	Native Dancer	Northern Dancer
Danehill Dancer	Coolmore	IRE	Native Dancer	Northern Dancer
Dansili	Juddmonte	GB	Native Dancer	Northern Dancer
Oasis Dream	Juddmonte	GB	Native Dancer	Northern Dancer, Nasrullah
Pivotal	Cheveley Park	GB	Native Dancer	Northern Dancer
Dubawi	Darley	GB	Native Dancer	Raise a Native, Northern Dancer

Figure 1. Number of Starts per Horse as a Function of Time (1945-2009)
<http://www.jockeyclub.com/factbook.asp?section=10>

[SEE NEXT]



This decrease in starts per horse over time also sheds light on another contemptible fact directly related to the absurdity of the economic covetousness of the industry.

With exaggerated breeding fees and bloodstock sales that generate literally millions of dollars it has forced breeders to resort to breeding something fashionable that people will be interested in buying.

Unfortunately the fastest sires are usually the most unsound. In the commercial sense of the word, horses are no longer bred to race but rather are bred to sell.

"Dr. Larry Bramlage, an equine surgeon, says a supercharged auction market is even transforming the physical attributes of modern thoroughbreds. When horse racing was a pastime rather than a business, families like the Whitneys and the Vanderbilts and breeding farms like Calumet and the Hancocks' Claiborne made stallions out of the horses who had performed well and over time.

"It was the era of Iron Horses like the 1941 Triple Crown champion, Whirlaway, who made 60 starts in his career; and the 1946 champion, Assault, who raced as a 7-year-old. In fact, the 11 Triple Crown winners together made 104 starts at age 4 or older and won 57 of them.

"You used to see a taller thoroughbred, narrow chested and bit knock-kneed, who could run forever, but not as fast," Bramlage said.

"Affirmed, who in 1978 became the 11th and most recent Triple Crown champion, was perhaps the epitome of this body type. He raced 29 times, won 22 and sired more than 80 stakes winners and 9 champions. Over the past 30 years, billions spent on horses — \$1.1 billion alone at auction last year — has put a premium on what Bramlage described as a "toed-in, wide-chested, lighter-bone horse built for speed." [3]

The breeding market and the lucrative profits to be had from sales of offspring rather than racing have enticed many to retire their stallions to the breeding shed before they have matured.

Accordingly horses are put on the track much earlier and retired to stud earlier. In particular, horses that become superstars by winning several graded stakes or celebrated races such as the Kentucky Derby are considered so valuable that they are habitually retired after their 3YO campaign.

This way any limitation of racing beyond their primary years is masked and it is unknown whether they will sire any progeny capable of enduring several years of racing.

This trend amongst top breeders has also led to a diminishing number of sires producing the foal crop in any given year, further concentrating the gene pool.

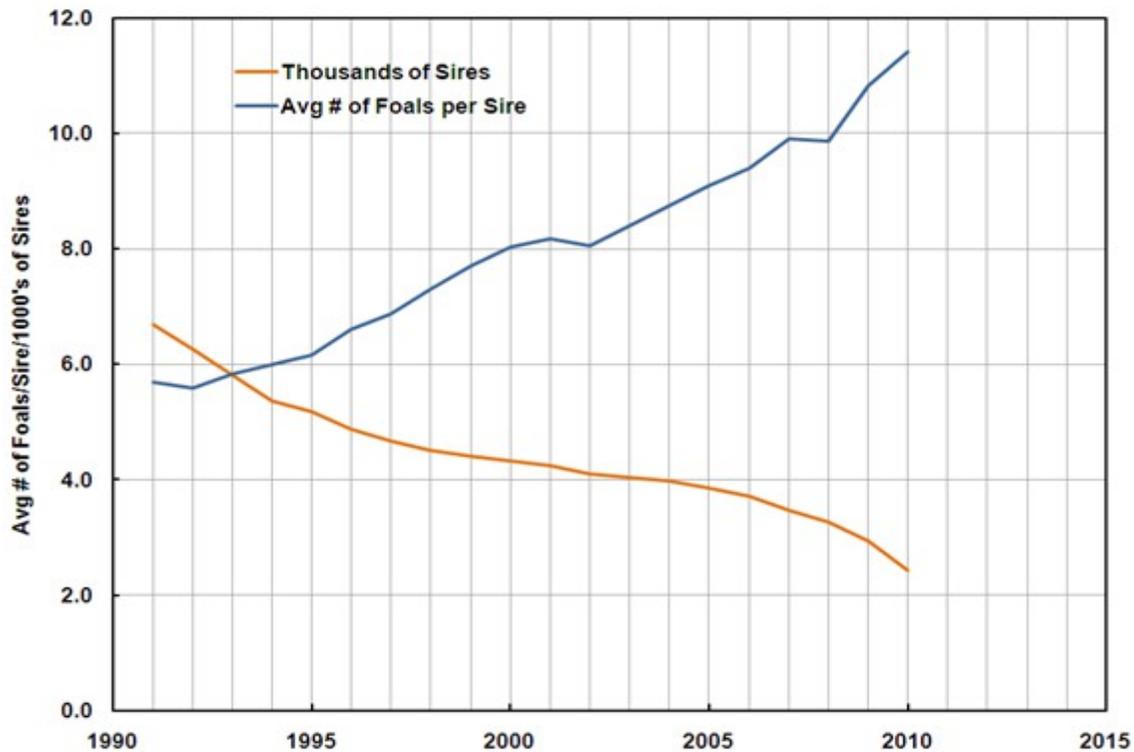
Many of the most sought after stallions will cover as many as 200 mares in a single year; these are the very sires that transmit the most susceptible genes to their offspring.

According to Jockey Club statistics from 1991 forward to 2010 the number of sires in North America has dropped about 65% from a high of 6,696 in 1991 to only 2,437 in 2010. This situation in North America is typical of the global picture.

Figure 2 illustrates the decline in the number of sires and the increase in the average number of foals per sire over time.

Figure 2. Decline in Sires and Increase in Average Foals per Stallion Over Time
<http://www.jockeyclub.com/factbook.asp>

[SEE NEXT]



What's more, in North America these young horses are unnaturally supported with the use of drugs - forbidden in other countries of the world - that mask skeletal weaknesses and other biologically inbred deficiencies.

In effect these horses are allowed to achieve artificial success and then are ushered into the breeding shed to pass on these flaws to future generations of expensive progeny.

"This gradual softening and weakening of the breed has led to the use of more medications to keep these horses running sound, among them the corticosteroids injected into injured knees and ankles. The cortisone reduces inflammation and allows horses to run pain-free on the damaged limbs or joints, a dangerous practice, if done repeatedly, because it can lead to a more serious injury and to the much-feared catastrophic breakdown.

"When I started going to races in the 1950s, I hardly ever saw a fatal breakdown on the Chicago dirt tracks; but when I started covering the sport in 1972, in New York, I began seeing numerous breakdowns during a race meet, sometimes two or three a week. One veterinarian told me that this was no accident, that this was the time period when cortisone began to get widespread use on U.S. racetracks, the first signal to me that drugs were a culprit in the sudden increase in catastrophic breakdowns." – William Nack [4]

"Medication is a symptom," Parker said. "They need medication because they're not sound to begin with. Why else would you give it to a horse?" – Ellen Parker [5]

[1] <http://www.animalaid.org.uk/images/pdf/booklets/bred.pdf>

[2] Ibid.

[3] <http://www.nytimes.com/2008/05/11/sports/othersports/11breeding.html>

[4] http://sports.espn.go.com/sports/horse/triplecrown08/columns/story?columnist=nack_bill&id=3399004

[5] Ibid.

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PART 4 – ON THE BRINK OF EXTINCTION?

If the racing industry intends to remain solvent how far will they go to achieve this goal at the expense of the very creature that it is dependent on it?

Or is it beyond repair?

The "Sport of Kings" is in desperate need of a major overhaul especially in terms of the safety and humane treatment of the Thoroughbred.

One wonders why the breeding industry seems oblivious to this component until one realizes what drives it – MONEY!

Sadly these economic forces take precedence over the welfare of the horse.

Poor judgment and irrational breeding practices over the past 5 decades or so has finally taken its toll.

With the formation of syndications, over-booking of fashionable stallions and shuttling between the Northern and Southern hemispheres, the industry has all but destroyed its life blood.

If this ceaseless inbreeding is allowed to continue will the average horse only race once then be discarded or retired to the breeding shed?

And what about those who don't make the grade – the redundant?

What is crucial in reviving the breed is the need for out-crossing to regain the

diversity once present. Unfortunately this would require the Jockey Club stud books to "open" to allow these sturdier horses in.

As Ellen Parker says:

" . . . that ain't gonna happen. Breeders are stuck with what is in there now. The Jockey Club sees itself as a guardian at the gate, protecting the purity of the breed from the mongrel hordes, the Quarter-Horses and Standardbreds and all the other hybrids who eat grass. Intruders are not welcome. Post no bills, Tonto. Take a hike. The door is closed". [1]

There are many lessons to be learned about what has taken place since the commercialization of the horse racing industry.

However most importantly one must first and foremost think of the horses and the harm that has been cast upon them as a result of greed, desire for short-term gain and dearth of reliable breeding knowledge.

"Which brings us to the bottom line: Thinking outside the box and doing the right thing takes courage and a willingness to ride out the storm. Taking short cuts has all but ruined this wondrous creature born of desert sires and mares who carried knights into battle.

"The breed has not evolved, it has devolved. Those who care about more than the sale price of their yearlings had better get moving because by the time you are ready, there will be nothing left to use...we are nearly there now.

"What I had foreseen twenty-four years ago is happening every day before my eyes and I do not care for the landscape. I do not know what to say to people who ask me how I can support such a sport, how I as a horse lover can even watch it anymore. It is getting harder and harder to find answers to those questions." – Ellen Parker [2]

[1] http://sports.espn.go.com/sports/horse/triplecrown08/columns/story?columnist=nack_bill&id=3399004

[2] <http://www.reines-de-course.com/soundness.htm>

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