THT BLOODSTOCK: PATTERNS OF MOTION ANALYSIS

WITH KERRY THOMAS AND PETE DENK

KENTUCKY DERBY
CHURCHILL DOWNS
146™
EST. 1875

Ranked in Herd Dynamic order for 1 ¼ miles on September 5, 2020

1.	Tiz the Law	96	10. Enforceable	68
2.	Honor A.P.	90	11. Major Fed	64
3.	Ny Traffic	83	12. Money Moves	62
4.	Sole Volante	81	13. Winning Impression	61
5.	King Guillermo	80	14. Necker Island	61
6.	Thousand Words	80	15. Storm the Court	61
7.	Authentic	79	16. Mr. Big New	57
8.	Attachment Rate	76	17. South Bend	57
9.	Max Player	69	18. Finnick the Fierce	54

Looking Back

It's hard to believe that this year marks the 10th Kentucky Derby that we've provided a herd dynamic analysis. If you would have told me when we started that it would be more than a one-off effort, I wouldn't have believed you. With nine Kentucky Derbies under our belt, I find myself reflecting back on the journey because in truth, the evolution of the Derby Analysis mirrors the evolution and growth of our work in herd dynamic profiling. I have learned so much over the years and I think of how far we have come at THT Bloodstock from where I started, with little more than an idea and a desire to discover what there was to be discovered. I let instinct guide me in the environmental classroom, immersing myself in the very nature of the predator/prey interaction, my love of sports and my passion for horses merging over time, pieces that slowly assembled into what we are today. The driving force has always been chasing discovery and innovation, and the more I learn about the horse, the more I realize there is more to learn.

Ten years ago, herd dynamic profiling was largely in its embryonic form with many fluid parts just beginning to take shape. It would not have happened without help. The most beneficial thing to ever have happened to me on this unique journey was meeting Pete Denk. Make no mistake, my raw ideas and research regarding herd dynamic profiling and the subsequent services we now offer on that foundation, would not have been possible without Pete's added vision. We have discovered and continue to discover a great deal by pushing our own envelope. The Kentucky Derby Analysis itself would not have come to be nor evolved in scope and detail without Pete, and indeed would not have even been "a thing" without first an opportunity.

It goes without saying that Pete and I truly appreciate Ed DeRosa and the entire Brisnet team for both providing us with our current stump and for their continued support of our work. At its inception, what has become our patterns of motion profiles of the contenders, can be found in the then media platform Kentucky Confidential. Itself a very innovative idea and our original podium to introduce our work, I owe a special thanks to Co-Founders John Scheinman and Jessica Chapel for the opportunity and the role they played in where we are today. If you look back through our Big Race Analysis archives you can easily track our growth from year to year as Pete and I continued to push, study, learn, and challenge ourselves to go deeper into the psyche of the equine athlete and unveil the esoteric world that I've come to refer to as, "behavioral genetics".

The physical athlete alone is only part of the story, for the psychological athlete is the hinge from which everything swings. My primary focus has always been to reach as far as I could into this part of the horse and discover herd dynamics in their purest form. The characteristics of elite athletes are never packaged in simplicity; they are the result of a merger between physical talent and mental aptitude, with the herd dynamic in the driver's seat. Talent without ability is a horse not an athlete, and the one thing that Pete and I have always strived to do through the course of our evaluations is identify how well the operating system is running the machine. Gaining an understanding of this is essential on multiple levels and each year with this report we do our best to bring more clarity to the field and what their probability of success in the Kentucky Derby is.

My process of consideration has always been the same, be it for this report for you or evaluating horses for a client, I focus more on the projected body of work over time. Among the overriding questions to be answered is this -- how well is the horse equipped to handle their career and how consistently competitive are they inclined to be? For the Kentucky Derby I think of each horse individually and where they're likely to finish against these particular peers if they raced ten times. The first step in finding winners in any field, race or auction, is culling those less equipped to succeed. Over the course of the last decade, collecting data on countless horses, Pete and I have chipped away at refining our evaluations, something we will persist in doing, as we work toward defining a grading scale that is representative of both physical talent and psychological ability. Through the years we have utilized a cursory scoring system while striving to proportionately allocate and grade the accumulated data as definitively as possible, much time and study having been poured into identifying the markers.

Our goal is to continue to share our understanding of the awesome inner-workings of the equine athletic psychology, for me a study that has always been less about the race and more about the horses in it.

Where We Are

Because each horse is both "mind & body", a true system of grading them must be comprised of these in order to gain a purer understanding of the horse. When you enhance this understanding, you're also advancing the game itself. In keeping with our effort to innovate and rethink the way in which we get the advantage of the herd dynamic, this year's report comes with the addition of our newly developed grading scale. Sometimes you just never know where the pursuit will take you, though we always knew that the system we had was leading us forward.

I've always believed that in order to gain a true understanding of a species you have to study not only the species themselves, but also the environments in which they're naturally designed to live. By nature, the physical horse is "built" to manage their habitat, and the herd dynamic is designed to navigate it. When we lift this package up and plop it into the human world, we can change by breeding various aspects indeed, but the clay from which we mold remains the same. No herd dynamic rating system or grading scale would fairly embody the horse unless we considered the accumulated data in its proper proportions; we had the ingredients, we just needed to knit them together.

Whenever I study anything, especially those things with complex but connected elements, I break apart the pieces, study them individually, then reassemble. This is exactly how we evaluate horses for this report and for our private clients panning-for-gold. The Herd Dynamic Power rating scale, which seemed just at our fingertips but ever elusive, suddenly manifested with clarity as we discussed the unique components of the 2020 Kentucky Derby. This being our tenth year we thought of ways we could enhance the report and Pete brought up the addition of the HDP scale, an implementation that has for us promptly revolutionized the way we look at, consider and ultimately represent the horse athlete. Blending physicality with herd dynamics we realized meant grading the relationship between ability and talent where the rubber meets the road, the fluency between them. Herd dynamic power is fueled by the sum of singular components housed within IHD & GHD; Individual Herd Dynamic and Group Herd Dynamic.

IHD & GHD have many moving parts, but in short, the horse with a psychological lean toward the Individual Herd Dynamic is the horse whose competitive nature feeds off singular stimuli as primary and multiple stimuli as supportive information. Group Herd Dynamic horses feed their competitive nature through multiple stimulus and use that to build mental momentum and balance when asked or required to focus on tasks or targets.

In order to determine a horses HDP ranking, first we establish the time spent in IHD and GHD, (duration is the key not the physical distance), giving us a ratio based upon a scale of 100. For IHD Power we must ascertain how effective it is being used during its percentage of time by evaluating a multitude of aspects that are managed by IHD such as target recognition and peer influence. GHD Efficiency rating represents the fluency with which the horse is interpreting their environment and how it translates while in motion by evaluating the many areas managed by GHD, chief among those being sensory lead changes and stress management.

Herd Dynamic Power is the raw aggregate of information, an individual horse's race specific HDP ranking is that information combined with particular race conditions such as peer competition, physical distance and so on. This warrants close monitoring, for emotionally charged athletes are often a reflection of their environment which can affect their expression within that environment.

Every horse, regardless of their particular HDP, operates at their highest mind-to-body fluency levels for a definitive period of time before either mental or physical fatigue sets in, this window of time (factored into these HDP equations), we call Optimal Efficiency Zone or OEZ. OEZ determines competitive physical distance, an important consideration when handicapping or scouting horses of racing age. I've always felt that the application of this information juxtaposed with physical data such as speed figures, offers "next-level" insight and investment strategies. True potential is found where physical speed and psychological pace merge and probability of success depends upon it.

There are many applications for the herd dynamic grades quantified from the evaluation process. From creating a hierarchy of short-listed horses at a sale, determining the characteristics of the horses in your program, trouble-shooting underperformers or making intelligent investment decisions in a breeding program. There can often be a lot of space between mental ability and physical talent and whether you're a handicapper, owner, trainer, breeder or a discerning fan of the horse, understanding the herd dynamic, can make all the difference.

Looking Ahead

In some ways it seems rather fitting that we celebrate our decade of Kentucky Derby's amidst most unusual circumstances. Pete and I have come a long way and have learned, and are still learning, a great deal as we forge ahead, pushing our boundaries to evolve forward. We continue to make discoveries about the unique influence on athleticism that herd dynamics have and how important it is to consider how well a particular herd dynamic fits into a particular environment. The Kentucky Derby Analysis we do each year presents us with an opportunity to press forward our own innovation, continue to develop and enhance our work and services for handicappers and horse owners alike. What you get in these reports and now the HDP grading scale, is an example of the information we offer at THT Bloodstock.

Inherent grit and fortitude are among the central keys to the true and instinctive competitive nature of the athlete, for physical speed and endurance are the expression of psychological pace and resilience. Few races are more demanding of these components than the Kentucky Derby and this year's unusual circumstances presents both unique opportunity as well as unique challenges. Late spring three-year-olds and end of summer three-year-olds can be two different beasts, both physically and

emotionally. Where indeed in most cases we have additional races to evaluate that we wouldn't normally have, providing us more opportunity to track and identify patterns of motion, tendencies and competitive nature, we also have to look at fatigue in a different way. Dialing up the horse to "peak" at the right time for the Kentucky Derby is a different challenge when you have all summer to compete.

Mental stamina and physical endurance are factors beyond a singular race, they embody the entirety of what it means to be an athlete, and this years' derby being moved ahead we had to consider added experience and maturity as well as attrition, mentally and physically. Who may be showing chinks in the armor? Who among them have seasoned to stronger more defined athletes? When all we have is race footage to analyze, we focus a great deal on tendencies during situational chaos as our guide for clues to psychological growth patterns and the impact, if any, of competitive stresses. Not all horses mature at the same rate and in the same manner, the horse that could have won in late spring may find peer competition a little more overwhelming in late summer/early fall.

Additional seasoning isn't the only thing that is new for 2020, the environment that is the experience of the Kentucky Derby is also quite different. One of the most important factors Pete and I build into our profiles is how the individual is likely to handle the emotional impact of the human element of Derby Day. The experience for the horses will still be unique just not as emotionally chaotic without countless fans adding to the din; for some horses this will aid in minimizing environmental stresses and for others may serve to expose them to more herd dynamic pressures from their peers. I've written extensively about the dependent/co-dependent nature of herd structure and indeed environmental chaos can actually serve to camouflage lower herd dynamic horses, allowing them to be "hidden within the crowd". With a race like the Kentucky Derby where there can be many high-level HD horses, even marginally lower horses will feel them; with a lessening of environmental chaos to offer some moments of quarter, peer pressure can be felt with more protracted intensity. Where things may prove easier to manage than they otherwise would be for some, others risk exposure without an atmosphere.

Every year Pete and I find ourselves with horses who are herd dynamically closer than we may first expect on the surface, and I say it all the time but it is indeed splitting of hairs when it comes to structuring the hierarchy of contenders. The farther the distance, the more time-in-motion, the more separation between subtle nuances of HD strength. Horses with similar herd dynamics over all often have subtle disparity in psychological makeup. Found within the body of the race experience, slight differences in their management of situational chaos either galvanize the armor or chip away specs of paint; the environmental role is the wildcard because any number of scenarios can develop. We work to identify which contenders are best equipped to handle the unknowns and who are those that have high levels of mental versatility? We then ask ourselves the oft mentioned question of ten; if this herd of horses raced ten times in this atmosphere at this distance, who is equipped to handle the most in-race unknowns? The more complete the herd dynamic, the more psychologically versatile the athlete.

It is always our goal to provide you with a unique window into "who" the horses are by way of their behavioral genetic traits, as emotionally driven competitors their "operating systems" should never be underappreciated. Though the sentimental athlete influences the mechanism, emotion itself, refuses to be mechanized.

The time and effort that it takes for Pete and I to put this report together is monumental, and I cannot thank you enough for purchasing it. To those who have supported us over the years and for those who are discovering us for the first time, we truly appreciate it; you don't have to be a handicapper to be a fan of the horse and enjoy the beauty of their natural athleticism. The best ambassadors of the sport are the horses themselves, and Pete and I are very proud of the fact that the herd dynamic information we provide helps cultivate new understanding for those on the edges of interest.

It is through emotion that horses communicate with one another and connect with their environment. I personally feel that when you invite an emotional connection with the horse, you're communicating a new reference point from which to view the industry.

Horses love to run and compete by nature, and racing done right, is an extension of that nature.

Thank You~
Kerry M Thomas
Founder of THT Bloodstock

TIZ THE LAW

Bay colt by Constitution—Tizfiz, by Tiznow
Bred in New York by Twin Creeks Farm

IHD   GHD

IHD/GHD Ratio: 75%/25% IHD shifted
IHD Power: 97 Elite
GHD Efficiency: 94 Elite
Pattern of motion: IHD speed presser/stalker
KY Derby Herd Dynamic Rating: 96

This is our 10th year profiling horses for the Kentucky Derby, and after studying hundreds of three-year-olds, we have never seen a horse like Tiz the Law.

Already a winner of the first leg of the 2020 Triple Crown, the Belmont Stakes (G1), Tiz the Law enters the Derby at the top of his game -- an elite physical talent with a powerful, maximized psychology.

Tiz the Law pairs a brilliant emotional energy, lightning fast sensory system and huge forward projection with elite efficiency, body control, speed and stamina. Those traits aren't normally present all in one horse.

He was awesome from day one. Debuting in a maiden race for New York-breds on August 8 at Saratoga, Tiz the Law exited the gate in a straight line, with great body control. In a pocket on the turn, he was under strong restraint from rider Junior Alvarado, but showing massive forward projection and good space awareness.

When a horse is under a stranglehold, but stays forward mentally and does not lose position, that is an indication of a profound forward energy.

Steered in the clear in the lane, Tiz the Law drew off to win by 4 lengths while under mild encouragement. His mind was clearing physical space way out in front of him, pulling his body forward.

Tiz the Law proceeded to the Champagne Stakes (G1) in start #2, where he was paired with his Derby rider Manuel Franco. Tiz the Law stumbled slightly at the start – this is an intense horse who had minor hiccups at the start early in his career. Franco checked him and took him inside behind horses. Held up behind the leaders, Tiz the Law was almost jumping out of his shoes to assert himself. He eventually settled in traffic.

The other horses were in his way physically, but he wasn't concerned about them on the Herd Dynamic level. Big City Bob tried to keep him hemmed in, but Tiz moved him out of his

way with his presence. He still had so much energy to unleash once in the clear. He won by 4 lengths, looking stress-free on the gallop-out.

Tiz the Law's only career loss occurred over a sloppy surface at Churchill Downs in the Kentucky Jockey Club Stakes (G2). He did a little shuffle at the start and got pinned along the rail behind the leaders. Being restrained behind horses was certainly not his favorite thing to do, but here he was again. It hurt his chances in this race, but it might have helped teach patience.

Tiz the Law was blocked for most of the KJCS. He didn't get free until almost the 1/8 pole, and he had no right to get free even then. He created that opening with his presence, moving South Bend out of his way and skillfully coming through the hole. Tiz the Law was trying very hard to influence the winner Silver Prospector's motion, but he couldn't do it from his compromised position in the amount of time he had to do it.

He finished third, but it was a great effort. He was the best horse on Herd Dynamics by far, and he got a good education.

Tiz the Law made his three-year-old debut in the Holy Bull Stakes (G3) at Gulfstream Park. He was ready for the start this time -- he looked like he had been shot out of a cannon when the gate opened!

Tiz the Law immediately went to the lead, but Franco took a hold of him and let horses pass on the outside. Yet again Tiz the Law was pinned on the inside behind horses! Realizing the spot he was in, Franco wrestled TIz the Law back a couple lengths and steered him to the outside. It is almost unfair to be able to maneuver a horse in that manner and still have so much forward energy remaining.

Tiz the Law blew by Ete Indian turning for home, took over his lane and then cocked his head, daring his opponent to run at him. He won by three lengths, ears scissoring then flopping as he crossed the wire.

Tiz the Law finally got a clean trip in the Florida Derby (G1). Sitting third on the outside, stalking the leaders on the backstretch, he was moving purposefully. His sensory system was clearing space while his ears were flopping like a dishrag. There was absolutely no stress in his body. He loves competing, and it is getting easier for him.

He blew through those horses, taking out poor Ete Indian, who drifted out four paths in his wake. Again Tiz the Law didn't release him cleanly because he was still looking for a fight , but there was no challenge.

Tiz the Law dominated the first leg of the 2020 Triple Crown, the Belmont Stakes, which was run at 1 1/8 miles this year. He broke cleanly, sat three-wide in third place, just off the leaders, with a poised, determined look in his eye. With minimal encouragement, he powered home by 3 ¾ lengths.

Tiz the Law continued this historic year in the Travers Stakes (G1). His efficiency at the starts has been improving, and here he broke fast and straight again. He quickly took up what is becoming his customary early herd positon – pressing or stalking the pace on the outside.

Tiz the Law was putting immediate pressure on Shivaree, eyeing him from close range and intimidating him. He then moved up a slot on the backstretch and started chewing up the pacesetter Uncle Chuck. Tiz the Law was in complete charge of the herd by the time they reached the top of the far turn.

With Uncle Chuck finished and no one else piercing his space, Tiz the Law gave one more look back for a challenge. Feeling none, he released from the field and drew off to win by 5 ½ lengths. He was eased at the wire.

We have never seen a horse with Tiz the Law's intensity level be so easy on his body. He looks so light on his feet. None of this looks hard on him.

Tiz the Law enters the Kentucky Derby an extremely confident horse. We feel he has completed his Herd Dynamic growth curve. He has reached his maximum IHD power and GHD efficiency – something we rarely see when the Derby is held the first Saturday in May.

How long can he perform at this level? The natural cycle dictates that colts only stay on top of the herd for so long. Tiz the Law has just recently reached his apex and he has shown no signs of mental or physical decline so far. We expect he can stay on top for a while.

HONOR A. P.

Dark Bay Ridgling by Honor Code—Hollywood Story, by Wild Rush

Bred in Kentucky by George Krikorian

IHD   GHD

IHD/GHD Ratio: 40/60

IHD Power: 88

GHD Efficiency: 92 Has ability to feed off herd motion.

Pattern of motion: Versatile, he can do it all.

KY Derby Herd Dynamic Rating: 90

We think Honor A.P. is a better horse than he showed in his final prep race, when he finished second in the Shared Belief Stakes. Analyzing this lightly raced colt's form might be one of the trickiest calls of this year's Kentucky Derby.

Honor A.P. debuted at Del Mar on August 17 in a 6-furlong sprint. He got out of the gate slowly, with ok body control, but he was just a hair green early and right away we could see he did not possess the rhythm of a sprinter.

Willing to beat to his own drum, Honor A. P. was moving methodically in 10th place, 12 lengths behind the lead but immediately showing some forward targeting ability. When a horse is not concerned with position early on in herd motion, and is content to let the race unfold, this is often an indication of a horse with Group Herd Dynamic as its core identity.

Steered out 5 or 6 wide and asked for run, Honor A. P.'s competitive spirit ignited. He put in a protracted, smooth IHD run. Only casually targeting most of the eight horses he passed, he ran out of time to catch the winner, but he showed good grit when taking out Hydrogen for second place just before the wire. Honor A. P. was feeding off the environment before transitioning into that IHD drive. And once he got going, he was bulldozing forward space.

We think John Shirreffs' training style must be a little different than a lot of other American trainers. He seems to understand GHD-based horses more than most -- or at least he is more willing to let a GHD horse be a GHD horse. He doesn't throw blinkers on them right away or try to get them to express speed in ways that don't come natural.

Two famous Shirreffs trainees who were pure GHD horses and were allowed to run as such were 2005 Kentucky Derby winner Giacomo and Horse of the Year (2010) three-time Champion mare and Hall of Famer Zenyatta.

Giacomo, a classic GHD closer, was in in 18th place, about 15 lengths off the lead, after 6 furlongs of his Derby win. He

eventually passed them all. Zenyatta was one of the best GHD-based horses and one of the strongest overall Herd Dynamics we have seen in our 10 years of developing this profiling system.

Shirreffs stretched Honor A. P. out to 1 mile in his second start on October 13 at Santa Anita. He broke smoothly, but he was more aggressive into forward space and went to the lead. With flopping, relaxed ears and no signs of herd dependency, Honor A.P. was projecting himself way out in front of the field. That is the look of a horse who was interpreting his environment very sharply and running stress free.

Honor A. P. pulled away from Tizamagician cleanly in the lane to win by 5 lengths. Even on the lead, Honor A.P. showed he still had a series of emotional gears. There were signs of a versatile, high-level horse in that maiden win.

Honor A.P. made his three year-old debut in the San Felipe Stakes (G2) on March 7. He broke well but settled in 4th place on the inside, stalking the top three. This was the third different pattern of motion we saw from him in as many races.

He made a smooth advance to get up to second place, but he couldn't quite pierce the winner Authentic's armor. Still, we liked this race as a learning and conditioning effort. He finished 2 lengths behind Authentic, but he was still running at the wire – in his mind that race was not yet decided. He is built for more distance than 1 1/16 miles.

Honor A. P. stretched out to 1 1/8 miles in the Santa Anita Derby (G1). Again we saw him exit the gate efficiently. There were no gaps between his environmental awareness and his body control. He went right into a purposeful, stalking trip. He was settled but engaged from the start. That is his best mode.

In 5th place on the first turn, he seems to respond incrementally to rider Mike Smith asking for more. Gradually sharpening with additional time in motion, Honor A.P. again passed horses very smoothly. He is intense in IHD competing mode, but he

has good body control and efficiency. He crossed the line 2 ¾ lengths in front, looking like a Herd Dynamic powerhouse.

He and Authentic were next to each other in the starting gate in the Santa Anita Derby, and while Honor A. P. was efficient from start to finish, Authentic drifted out at the start and was running head high for much of the race. Honor A.P., running with his head down, driving into space fluently, had the higher Herd Dynamic and was putting pressure on his main opponent.

Coming off his Santa Anita Derby performance, Honor A. P. was expected to dominate the Shared Belief Stakes. However he found that 4-horse field to be a much tougher experience than expected.

Bumped hard and knocked inward by Cezanne at the start, Honor A. P. shook off the contact fine but he did lose position and was in last place heading into the first turn.

Relaxed and in GHD rating mode, Honor A. P. got an early cue from rider Mike Smith to pick up his pace. He responded, shading :24 for that second quarter mile, advancing 4-wide around the first turn and (temporarily) running up outside the leader Thousand Words on the backstretch.

At that point, Thousand Words' uncoupled stablemate Cezanne advanced and got between Honor A. P. and Thousand Words. Honor A. P. and Cezanne engaged in a fierce IHD battle for the rest of the race. Cezanne held Honor A. P. at bay for a long

time. A.P. briefly looked beaten as he was drifting outward in the lane, something we have never seen him do before. But he never stopped trying to advance and he eventually outlasted Cezzane, passing him a few strides before the finish.

Interestingly, Honor A. P. didn't pass Cezanne and begin cutting into Thousand Words' lead until the longshot closer Kiss Today Goodbye came running on his outside flank. He used the momentum of the horse behind him to push off and relaunch at the leaders. This is another indication that Honor A. P.'s greatest strength lies in his Group Herd Dynamic.

He never got to battle with Thousand Words, but Honor A. P, was still extending through the wire and on the gallop-out. He continued to look like a horse who could benefit from added distance.

So while the Shared Belief was a bit of a disappointment, Honor A. P. was slammed at the start, wide all the way around the track, and asked to go into IHD competing mode for a longer portion of the race than he is accustomed to. His big GHD could be put to much better use in the Kentucky Derby.

Honor A. P. is lightly raced, but we think he is quite seasoned now, and better equipped than most horses to handle the big field and challenging environment in Louisville. The overall body of work suggests Honor A. P. is a top tier horse, with potential for more improvement ahead.

NY TRAFFIC

Gray or roan colt by Cross Traffic—Mamie Reilly, by Graeme Hall

Bred in New York by Brian Culnan

IHD   GHD

IHD/GHD Ratio: 80/20
IHD Power: 85
GHD Efficiency: 75
Pattern of motion: IHD speed. Press/stalk
KY Derby Herd Dynamic Rating: 83

Ny Traffic didn't win any of the major Derby preps – he placed in four of them -- but we liked every one of his efforts this year.

This is a methodical, efficient horse who runs with a dogged attitude.

Ny Traffic spent the first four races of his career in the barn of Pennsylvania trainer Harold Wyner, but he was transferred to Saffie Joseph Jr. in South Florida for his three-year-old campaign.

Ny Traffic was less consistent as a two-year-old, and he had two "off" races that, to us, looked like he might have been battling a physical problem. But in his juvenile races we saw some good underlying traits that have developed powerfully at age three.

Ny Traffic debuted at Parx on September 21 in a 7-furlong maiden race. The race chart says he was outfitted with blinkers, but on video we didn't see any blinkers (he did wear a shadow roll).

Debut greenness can be excused, but when positive traits emerge the first time a horse tries something new or encounters adversity, they often are genuine. The horse to the inside of Ny Traffic in the gate came out and bumped him at the start. Ny Traffic shrugged off the contact. He was driving into forward space, quickly finding an IHD cruising gear while poking his head in front, between horses. His space awareness and body control looked good and his forward flow was strong for a debut.

Ny Traffic faced a fast horse – future graded winner Independence Hall – and he got stuck on his left lead too long. He could have easily finished 4th or 5th, but he switched leads late and battled on for third place.

In his second race – another maiden special weight at Parx -- we loved Ny Traffic's countenance as he stood in the gate before the race started. He looked alert, not at all nervous. When the gate opened, he broke to the lead with good body control. He moves into forward space matter-of-factly. He was interpreting stimulus and herd motion well.

The #12 horse Monday Morning Qb (who won his next two races, including a stake at Laurel) tried to pass him on the turn, but Ny Traffic met the challenge with confidence. He took it up a notch in order to hold his ground, then lowered his head further in the lane while eyeing his opponent to the outside. Monday Morning Qb drifted outward then fell in behind Ny Traffic. That was a Herd Dynamic knockout punch! Ny Traffic crossed the wire 3 lengths in front, looking strong on the gallop-out.

After Ny Traffic finished 4th and 5th respectively in a pair of stakes tries at the end of his juvenile campaign, he was transferred to Saffie. We don't know much about Saffie, a third-generation trainer from Barbados who became the youngest trainer to win his native country's Triple Crown in 2009 at age 22.

Ny Traffic made his first start for Saffie at his Gulfstream Park base in an optional claiming allowance race on January 11. Saffie removed the shadow roll and stretched Ny Traffic out to 1 1/16 miles.

He got out of the gate well under rider Luis Saez and went to the lead. By the time he reached the backstretch, his ears were flopping and articulating. His GHD functioning well, Ny Traffic settled into a nice rhythm on the lead. He looked like a natural for the rhythm of route racing. Ny Traffic opened a 2-length lead on the far turn, cleanly changed leads in early stretch and drew away to win by 6 ¾ lengths.

Ny Traffic joined the Derby trail in the Risen Star Stakes (G2) at Fair Grounds, where he drew the tough outside post in a field of 11. He got out of the gate well – he is consistently efficient at the start – and worked hard to get down to the two-path heading into the first turn. We like the rhythm, ear articulation and space awareness he showed as he pressed Modernist on the lead.

Ny Traffic lost the battle for herd leadership in the lane – it looked like he used his best gears too early – but he didn't quit even after being passed for second place. He was still grinding, competing for space when he crossed the line in third. This wasn't a bad effort for his try in stakes company.

Saffie added blinkers for Ny Traffic's next race, the TwinSpires.com Louisiana Derby (G2). He broke well from another wide post and pressed the leader Wells Bayou. Blinkers gave him a small bump up in forward focus and intensity and a slight downgrade in space awareness, which was apparent in the lane when he failed to hold a straight line.

However, Ny Traffic never quit trying to advance, and he was actually cutting into Wells Bayou's lead late. This is a grinder who always tries to be the last man standing. Mentally, he still had more to give at the end of the 1 3/16-mile Louisiana Derby. Added time in motion is a positive for this horse.

Ny Traffic got some experience shipping to Churchill Downs when he ran in the Matt Winn Stakes (G3) on May 23. Following another sharp break from the gate, he held his position well, squeezing forward through traffic into the first turn. Parked about three-wide all the way, he looked comfortable rating with horses all around him. Even with blinkers, there is a solid, functioning GHD aspect to Ny Traffic's profile.

Ny Traffic was engaged in a nice IHD battle with Pneumatic in the lane when Maxfield came flying on the outside. Maxfield is an undefeated Grade 1 winner with a powerful Herd Dynamic (he will miss the Derby because of injury).

Ny Traffic felt Maxfield coming, and when rider Paco Lopez went to the left-handed whip, Ny Traffic immediately drifted out about three lanes to try to meet the challenge. Maxfield got by – he had the superior turn of foot – but Ny Traffic was not intimidated and he never quit. He finished 2nd, beaten a length, but he still had emotional energy in his tank. Ny Traffic wanted that battle to keep going past the wire.

Ny Traffic's final Derby prep came in the Haskell Stakes (G1), and although he did not win, we thought it was his best performance to date. He broke well and tracked Authentic all the way around the track. He was briefly outpaced in the lane, falling behind about 2 ½ lengths mid-stretch, but Ny Traffic kept grinding. Driving hard to the wire, Ny Traffic actually accelerated in the final furlong (a very respectable :12.81).

He missed catching Authentic by a nose, but he still looked fluent on the gallop-out. If that race had been 1 ¼ miles, we strongly believe Ny Traffic would have taken Authentic down. From the Herd Dynamic standpoint, the Haskell was a win and it could be a growth race.

Ny Traffic is an honest, efficient horse with excellent mental stamina. He has been the same horse regardless of environment -- running well at Gulfstream, Fair Grounds, Churchill and Monmouth this year. We like his never-give-up mentality.

SOLE VOLANTE

Bay gelding by Karakontie (Jpn)—Light Blow, by Kingmambo

Bred in Kentucky by Flaxman Holdings Ltd.

IHD   GHD

IHD/GHD Ratio: 35/65

IHD Power: 73

GHD Efficiency: 85

Pattern of motion: GHD closer

KY Derby Herd Dynamic Rating: 80

Sole Volante presents a classic dilemma of racehorse evaluation. What do you do with a single negative outlier performance, especially when it was the horse's most recent race?

That is the case with Sole Volante, who finished a very dull 6th in the first leg of the 2020 Triple Crown, the Belmont Stakes (G1).

Our approach to this confusing situation is twofold -- consider the entire body of work and trust your read. Following our own advice, we think Sole Volante has the potential to run well in this Kentucky Derby.

Sole Volante began his career on the turf, and if this race was on the grass, you might be looking at one of our top selections. Sole Volante looked special in his first two races.

He debuted at Gulfstream Park West on October 12 in a 7½-furlong turf race. He settled into GHD mode shortly after the break in 8th place. He was still within the herd in GHD on the far turn, but he was moving with eye-catching purpose and forward focus.

He and jockey Luca Panici were waiting for a lane to open, and as soon as they saw a crack, they deftly slid out a few paths and pried it open. Sole Volante went from being buried on the inside to in the clear, inhaling the leaders, in a very short time, and he made it look easy. His space awareness was elite and his sensory lead changes smooth. He powered away from the field to win by three lengths, tail relaxed, moving with beautiful purpose and ease.

Sole Volante looked even more impressive in his second start when winning the Pulpit Stakes. Pinched at the start, he settled stress-free near the back of the 11-horse field. He started revving up on the far turn, and it was beautiful to watch him thread the needle, splitting horses, then angling outside of King Guillermo to win by two lengths. It takes an elite sensory system to navigate herd traffic the way Sole Volante does. This

is a horse who can anticipate herd movement as (or perhaps even before) it happens. He is maneuverable in GHD and has Herd Dynamic power and turn of foot in IHD – that is a special combination.

Trainer Patrick Biancone decided to see if Sole Volante could handle dirt in start #3 and entered him in the 1-turn-mile Mucho Macho Man Stakes.

Sole Volante didn't win, but he showed off his ability to negotiate traffic again while running a closing third. We thought his action looked just fine on dirt, and he still had good energy through the wire. Sole Volante looked like a star on turf, but very capable on dirt.

Biancone officially put Sole Volante on the Derby trail when he entered him in the Sam F. Davis Stakes (G3), a two-turn, 1 1/16-mile dirt race.

Moving relaxed in GHD mode early, he was in 5th place, 15 lengths behind the leaders at the first call. With the field split in two herds, he subtly took charge of the trailing pack and began steadily closing ground on the leaders. Sole Volante possesses elite herd awareness and a big Distance Target Focus – traits that could be very useful in the Kentucky Derby.

For us, watching this horse close ground is like seeing a great artist. He advanced up the rail then made a smooth lateral move to go 3-wide, outside of leader Independence Hall turning for home. Independence Hall was considered one of the fastest members of this crop at the time, and this was a great IHD battle.

Sole Volante's body control and stride efficiency look very good on dirt. Around mid-stretch he moved inside a couple paths to get closer to Independence Hall, and that pressure finished him off. Independence Hall threw his head and drifted inward after Sole Volante took him down. He hated being defeated there. That was a torch pass from one young talented colt to another.

Sole Volante knew he put Independence Hall away, and he went back into GHD mode, ears scissoring, as he crossed the wire. He was assessing his environment and asking his jock if there was anything more to do. We think he can go further than 1 1/16 miles on dirt.

The Tampa Derby (G2) featured a rematch with King Guillermo. Unlike their earlier contest, which was run on grass and featured a fast pace, the Tampa Derby was on dirt and run at a much more relaxed tempo. Sole Volante still ran to his natural pattern of motion – relaxed in 11th place early, 9 lengths behind the lead.

With the leaders clicking off comfortable :24-second quarters, this race did not set up for a GHD closer. This is the weakness of this pattern of motion. Sole Volante and rider Florent Geroux made an early move to try to get into contention more than three furlongs from the finish.

That is not easy to sustain, but Sole Volante showed resolve working his way up the inside to finish 2nd, 4 ¾ lengths behind King Guillermo, who was still full of run at the wire. There was big physical gap between the top two finishers, but we didn't think the Herd Dynamic gulf was nearly as large.

The Tampa Derby did not take us off of Sole Volante as a Derby contender. He has an elite Herd Dynamic. It is expressed a little differently in dirt racing – it is more stretched out – but he is very good on dirt.

Sole Volante took some time off after Tampa, then returned in a loaded (Grade 3 quality) 1-turn-mile allowance race at Gulfstream Park. In GHD early, he made his usual strong approach on the far turn.

Sole Volante intensified more than we have seen him do in the past in the lane, and he briefly hung on his left lead. Was he a little rusty, or was there something physical bugging him? This was the first time we have seen his transitions look anything but perfectly seamless.

When he got to his right lead he quickly took charge of the herd and won by ¾ of a length. He was moving with good purpose through the wire.

Biancone decided to ship to New York after that allowance win and run in the Belmont Stakes just 10 days later. That is a really quick turnaround. Sole Volante looked agitated in the pre-race warm-ups, and he ran the worst race of his life.

His stride looked a little choppy early in the Belmont. At no point in this race did he look like the elite minded horse we saw in Florida his first six races. He hung on his left lead badly in the lane.

Biancone freshened Sole Volante after the Belmont and has trained him up to the Kentucky Derby. We feel there is a very wide range of potential outcomes for him in Louisville.

We assume Biancone would not bring him to Churchill if he didn't think he had him back in top form. And Sole Volante's top form makes him an interesting contender, especially if this race features a hot pace.

The Herd Dynamic traits and adaptability Sole Volante has shown are very rare. We don't think 10 furlongs on dirt will be his best game, but Sole Volante is a rare hybrid. He has a fabulous psychology, and that can be a difference maker in this unique race.

KING GUILLERMO

Bay colt by Uncle Mo—Slow Sand, by Dixieland Band
Bred in Kentucky by Carhue Investments,
Grouseridge Ltd, and Marengo Investments

IHD ◼◼◼◼◼◻◻◻ GHD

IHD/GHD Ratio: 65/35
IHD Power: 83
GHD Efficiency: 75
Pattern of motion: IHD Speed but versatile.
KY Derby Herd Dynamic Rating: 80

King Guillermo enters the Kentucky Derby having not raced since his second-place finish in the Arkansas Derby (G1) on May 2.

A trainer who is adept at using workouts to build physical fitness, and hone a horse's mental and emotional edge to just the right sharpness, could overcome that layoff.

But from the standpoint of Herd Dynamic development, we wish King Guillermo raced at least once this summer. It would have told us if the Arkansas Derby represented a flattening of his Herd Dynamic curve or if it was a growth race.

King Guillermo was not campaigned like a typical Kentucky Derby horse at age two. He debuted in a 5 ½-furlong sprint at Gulfstream Park on September 29. The race doesn't look like much on paper – he finished 6th, beaten 11 lengths – but it wasn't a bad effort.

He broke ok, but he wasn't ready to match the herd's rhythm in that frantic dash. The rider was asking him for speed, but he got blocked a couple times early on. We wouldn't hold this race against him, as his stride looked good and the experience served as a useful physical and mental tightener.

They stretched Guillermo out to one mile on the turf at Gulfstream Park West in his second start. Asked to run out of the gate, King Guillermo showed his responsiveness by going to the lead, then dialing it down a notch. He looked very comfortable with the rhythm of this turf route.

Rating on the lead, King Guillermo was running methodically and freely. He was moving into open space very well – no signs of herd dependency here.

His body control and space awareness looked very good. He was loose on the lead, but he was exhibiting a promising base of Group Herd Dynamic awareness. He held a beautiful straight line in open space, and when it was time to leave the herd behind, his transition was very smooth. He won by six lengths in dominant fashion.

They stepped King Guillermo up to stakes company in his third and final start as a two-year-old in the $75,000 Pulpit Stakes, another 1-mile turf race.

A first start against winners can be a big step up, and we see Guillermo was feeling a little more pressure vs. higher Herd Dynamic opponents. He hopped at the start, but we like how he maintained his forward focus through some early bumping.

Physically he might have been rushing a little bit to keep up with that very fast pace (:22.74, :45.62, 1:09.27), but King Guillermo's sensory system rose to the occasion, clearing space very quickly and accurately for his body.

He surged to a 2-length lead in early stretch, but he could not hold off the rushing finish from GHD closer Sol Volante, who got the better trip. King Guillermo tired late and finished third.

King Guillermo started his three-year-old campaign off in an ambitious spot – the Tampa Derby (G2). Racing on a three-month layoff and with no wins on dirt, he was sent off at odds of 49-1!

Starting from post 11 in a field of 12, he broke well, just slightly to the outside but with a lot of forward energy. If asked, King Guillermo can turn up the intensity early to get position, but then he can settle into some very useful cruising gears.

Perched in second-place on the outside of the leader, he pressed a comfortable pace of :23.89, :48.16 and 1:12 flat. We like his developing GHD awareness, as it gives him the ability handle a variety of positions near the front of the herd.

With rider Samy Camacho rousing him turning for home, King Guillermo showed that if he is allowed to click off quarter miles in the :24-range, he can still have a lot in the tank. He drew

off to win by 4 ¾ lengths over Sol Volante. Still running strong and fresh through the wire of that 1 1/16-mile race, Guillermo's mind and body were functioning beautifully together.

King Guillermo stepped up to the big leagues in his final prep, running in one of the divisions of the Arkansas Derby (G1).

Breaking from the three post in a field of nine, he exited the gate purposefully, with good GHD awareness. King Guillermo is not a perfect gate horse, but he has the tools to adjust to herd motion fairly quickly. That could help him in Kentucky. With Wells Bayou jumping out to the lead, King Guillermo was guided to the rail to secure a stalking position heading into the first turn.

Guillermo remained on that inside stalking path for six furlongs, then angled to the outside to try to attack Wells Bayou and Nadal. He could never quite penetrate Nadal's armor. During the stretch run, King Guillermo assumed the role of adjunct, second in charge of the herd behind Nadal, and he fought to hold off Finnick the Fierce for second place.

The most recent race is a very important experience in a lot of ways. King Guillermo was the second best Herd Dynamic in the Arkansas Derby, and he knew it. He was content to be second best to Nadal and that hierarchy remained intact on the gallop-out.

We admire the competitive energy, sensory fluency and versatility King Guillermo has shown. This is a very solid profile overall. His GHD took another step forward in the Arkansas Derby, so there is hope for additional growth. We would have loved to see how he built on that performance before advancing to the Kentucky Derby.

We wouldn't be surprised to see King Guillermo run big in Louisville, especially if his rider encourages good energy distribution at 1 ¼ miles.

THOUSAND WORDS

Bay colt by Pioneerof the Nile—Pomeroys Pistol, by Pomeroy
Bred in Florida by Hardacre Farm

IHD   GHD

IHD/GHD Ratio: 75/25
IHD Power: 84
GHD Efficiency: 70
Pattern of motion: IHD speed but versatile
KY Derby Herd Dynamic Rating: 80

Thousand Words is a methodical, gritty competitor, and he enters the Kentucky on an upward Herd Dynamic trajectory -- something we love to see coming into this race.

The addition and subtraction of blinkers has played a significant role in Thousand Words' development. Following a pair of disappointing races early this spring, trainer Bob Baffert freshened Thousand Words and removed the blinkers. Those moves re-ignited Thousand Words' competitive spirit.

A $1-million sales yearling, Thousand Words debuted last October at Santa Anita and went right into a competitive cruising gear when the gate opened. He then backed off the leaders, settling in 4th place. He was looking sideways, competing with the horse next to him on the back stretch.

Asked to go on the turn, he shifted his focus and attacked forward very nicely, wore down the leaders and won by a half-length. He appeared to have a slightly fast-cycling, gritty mentality in Individual Herd Dynamic combat. Looking at the head-on view, he held a very strong and straight path.

Baffert ran Thousand Words in the Los Alamitos Futurity (G2) in his second start, but he saw something in that debut (or in his morning training) that made him want to add blinkers.

Facing just a four-horse field, Thousand Words made a little sideways hop when the gate opened. When a horse wears blinkers for the first time, the pressure can build up and it is often released in the form of uncontrolled motion when the gate pops. A horse's space awareness also can suffer with blinkers, especially the first time they wear them, and we saw some of that in this race also.

Thousand Words won the Futurity thanks to his internal strength and will to win, but we didn't love his efficiency in this race. He looked a little lost in the lane against inferior horses. He didn't put High Velocity away and then he waited on Anneau d'Or, got passed, and had to re-rally for the win. His transitions were delayed and he didn't want to release vanquished horses.

Thousand Words looked better in his three-year-old debut when winning the Robert B. Lewis Stakes (G3). Blinkers were still not helping him in the gate, as he fell out sideways at the start. Rating in 4th place along the inside, Thousand Words showed a big forward target projection. He is IHD slanted, but he has no problem stalking the pace.

He started his advance on the far turn and stuck his head into a tight hole turning for home, pushing Tizamagician aside and taking the path. The way he bodied Tizamagician away – he didn't know exactly where he was -- lets us know his space awareness was still a little off with blinkers, but Thousand Words certainly didn't mind the contact. Close space battles are all good with him.

Thousand Words is a grinder, but he maintains a strong forward momentum once he kicks in. He put everyone away and then he felt Royal Act coming on the outside and drifted out to defend herd leadership. This is a very competitive minded horse.

Thousand Words' development broke down beginning with a 4th-place finish in the San Felipe Stakes (G2). He was trying to press Authentic to his inside early, but then Storm The Court joined the duel, and Thousand Words was sandwiched between foes. He looked very intense in that spot, and backed out to a stalking position.

Ears pinned, he internalized in the middle and late portions of this race. He ran a bit heavy and dull, finishing 4th, beaten 11 lengths.

He took another step backward in the Oaklawn Stakes. Still wearing blinkers, he looked like he was feeling a lot of pressure in the starting gate. His legs splayed at the start and he almost fell, losing all chance. This was his only race vs a relatively big field (13 horses) and in a totally new environment (away from Southern California) and he finished 11th, beaten 30 lengths.

Baffert took the blinkers off for the Los Alamitos Derby (G2). Blinkers or not, he is not a great gate horse. Looking sideways

at the start, he bobbled as the gate opened and was last of four early.

He lost tactical position, but he settled in nicely after the start. Even when in rating gear, Thousand Words runs with his ears pinned. This is an intense horse. We do like the forward projection he showed while stalking the leaders.

He made a bid on the turn, but the leader Uncle Chuck still had another gear in reserve, and Thousand Words couldn't match strides with him late. He was second best, but this was his first race in almost three months, and Thousand Words stayed the 1 1/8 miles just fine.

Thousand Words took another step in the right direction in the Shared Belief Stakes. He broke slightly to the inside at the start, but he recovered quickly into a good competitive IHD cruising gear. Thousand Words' body of work in the gate suggests an oblique interpretational issue that blinkers did not fix, but once he gets going, he holds a very nice path.

To the lead in another small field (4), with Honor A.P. stalking him early, Thousand Words got a break when his stablemate Cezanne came up between him and Honor A.P. Those two hooked up in a space battle. Getting a mid-race breather, Thousand Words kept on eating up forward ground. He has no issue running into open space.

When Cezanne and the others came to him at the head of the lane, jockey Abel Cedillo gave Thousand Words three cracks from the right-handed whip. Thousand Words responded, digging in for the stretch drive and running through the wire ¾ of a length ahead of Honor A.P.

This was a difficult race to assess on Herd Dynamics because the 2nd through 4th place finishers were battling each other quite a bit, relieving pressure from Thousand Words. Regardless, we like how he took advantage. Thousand Words stays forward in IHD battle, he has very good body control, and he has a sustained IHD move.

The start is the only time Thousand Words efficiency has suffered, and that will likely be the key to his Kentucky Derby. We also are not sure if he will have an issue in complex environments, such as in traffic in a big field or in the Derby pre-race build-up. He completely melted down in his only race outside Southern California, and that also was the only time he was in a field bigger than eight.

Thousand Words does have the Herd Dynamic power to make his presence felt in this race. He is not out of the question, but we think there are probably horses who are better equipped to handle the unique demands of this race.

AUTHENTIC

Bay colt by Into Mischief—Flawless, by Mr Greeley
Bred in Kentucky by Peter E. Blum Thoroughbreds LLC

IHD ═══════════════════════════════ GHD

IHD/GHD Ratio: 85/15
IHD Power: 84
GHD Efficiency: 50
Pattern of motion: IHD speed. Press or Lead.
KY Derby Herd Dynamic Rating: 79

Authentic is one of the most physically talented horses in this three-year-old crop. He is a big horse with a long, beautiful stride and good stamina, but we question whether his mental game is Kentucky Derby quality.

Authentic has a fast spinning psychology, a quirky sensory system and so much emotional energy that it can just barely be contained.

He debuted at Del Mar on November 9. He broke outward, was corrected by rider Drayden Van Dyke, then accelerated to catch up with and press the leader. He took over herd leadership in early stretch and won fairly easily by 1 ½ lengths, but he never released from the horses behind him.

Authentic runs with his head high and he sports some interesting ear articulation. Ears back, stiff and splayed is one of his common modes. That tells us he is very intense. He is not afraid of the other horses, but his periscope is almost always up. It seems like he doesn't entirely trust his own reads, especially in his rear egg, and that makes him potentially reactive.

Authentic made his second start in the Sham Stakes (G3) at Santa Anita on January 4. His gate break improved quite a bit, as he came out running fast and straight from the 1-post.

IHD horses with a single target focus often break and run well when they draw an inside post. We think this is because once the horse understands the rail is there, it can become a constant, unchanging stimulus. It simplifies the demands on their sensory system.

As he opened a two-length lead on the backside, Authentic was flowing into forward space well. His ears were even flopping a bit. He looked loose and comfortable.

There was not much Herd Dynamic power behind him, but he still got himself into trouble in the lane. Asked to change leads and release the horses behind him, Authentic's psychology was spinning so fast he got stuck. That should have been a

fairly easy sensory lead change into open space. Swerving at the 1/8 pole, he nearly lost his action and his rider. Van Dyke stayed on board, and they still won by 8 lengths.

Authentic took a step forward in start #3 in the San Felipe Stakes (G2). Breaking from the #4 post in a field of seven, he bobbled at the start. This type of psychology can get overly intense when asked to stand still. The emotional buildup can result in uncontrolled motion when they spring to a start. Authentic recovered well, gained the lead and slid over to the rail.

He almost always has a high head carriage, but he looked comfortable in the San Felipe, his ears flopping when he opened a 2-length lead on the backside. When he can control the pace, with no stimulus challenges, Authentic is a powerhouse. We wish he could find that mode more often! His ears do a lot of checking back for environmental changes, but he is probably not interpreting all that well. His countenance tightens when stimulus emerges.

When Honor A. P. tried to run at him in the lane, Authentic's head went up a little, but he used the rear pressure to push forward. He won by two lengths. It was his most efficient race to date.

The Santa Anita Derby (G1) featured a rematch with Honor A.P., and those two were next to each other in the starting gate. Authentic had the outside post in the field of seven, and he broke slowly, swerving outward and losing a couple lengths.

He recovered to press the pace 3-wide all the way around the track. Authentic looked ok with all the other horses inside of him. Being on the outside allows him to view the other horses as a group, simplifying his reads.

But as the field approached the stretch, Honor A. P. started applying pressure on Authentic's outside oblique, a potential sensory trouble area for Authentic. Authentic tried to look Honor A. P. in the eye and compete for herd leadership, but

Honor A. P. was operating in a better gear, his head lower, his body driving into space with better efficiency.

Authentic didn't like being passed, and he briefly lost focus. Once Honor A. P. cleared him, Authentic re-engaged. Even though he was beaten by 2 ¾ lengths, Authentic's stride still looked good through the wire. Distance is not his enemy; stimulus and environmental changes are.

Authentic won the Haskell Stakes (G1) in his final Kentucky Derby prep. He crossed the wire first, but from a Herd Dynamic perspective this was not his best performance.

He worked out a favorable trip – leading at every point of call – with only Ny Traffic chasing him from start to finish. Authentic covers so much ground with his massive stride even when running a little tense and head high. He did not look like he was extending that well – there is a hint of rear head pull in his carriage. It is almost like he is anticipating something happening. That makes him a little on edge at all times.

Authentic appeared to have the Haskell won when he opened a 3-length lead at the 1/8 pole. But his ears really tightened up as NY Traffic started cutting into his advantage. He just barely hung on to win by a nose. We didn't think he finished that race with a lot of authority.

Two things make us doubt Authentic's chances in Louisville – he has holes in his sensory profile that have led to behavioral overcompensations and he isn't coming into the race on a growth curve.

Situational chaos and higher Herd Dynamic opponents pose big challenges for him. This physically talented colt will have to improve his mental efficiency if he wants to win the Kentucky Derby.

ATTACHMENT RATE

Chestnut colt by Hard Spun—Aristra, by Afleet Alex
Bred in Virginia by Mr. and Mrs. C. Oliver Iselin III

IHD   GHD

IHD/GHD Ratio: 25/75
IHD Power: 65
GHD Efficiency: 80
Pattern of motion: Undefined
KY Derby Herd Dynamic Rating: 76

When Attachment Rate is done with racing, and assuming stud duty does not call, it would be great if he could be gelded and turned out in a group of horses.

Because from what we can see in his race videos, Attachment Rate absolutely loves running in a herd.

As we study the Derby, we get to see how horses react to being in a variety of positions. Many of them become uncomfortable and lose efficiency when they are put in tight between horses. Some of them can handle contact, others will swerve recklessly to avoid it. Some feel anxious when placed directly behind a wall of horses.

Attachment Rate is comfortable in all those positions -- so comfortable that he sometimes seeks them out. There were times during our race review that we wondered if his goal was to win the race or if he was just out there running. This is a unique horse -- quirky but also talented.

Attachment Rate made his debut at Churchill Downs on June 28, 2019. He probably needed the race from a fitness standpoint, as he flashed speed for about three furlongs then tired.

But he still may have given us a clue as to who he is. In 7th place early, jockey David Cohen asked Attachment Rate for a little run. Attachment Rate accelerated between horses and drove right up into a tight pocket less than a length off the lead. He was totally surrounded by horses while running a :22-and-change first quarter.

It was brave for Attachment Rate to charge up into that space, but it seemed like it was no big deal to him. He looked natural and comfortable. Cohen wanted out of there and hit the brakes.

Attachment Rate only made that one start as a two-year-old. He returned on January 25 at Gulfstream Park in a 7-furlong maiden race. His body control looked ok at the break, but he bumped with a horse outside of him and drifted to the back of

the pack. He was in 9th place, 12 lengths behind the lead at the first call.

Moving 5-wide on the turn, Attachment Rate started to put it together. He spun into the stretch in the 8 path and came running greenly – stuck on his left lead. He passed everyone but the winner, finishing 2nd by ¾ of a length. He looked strong on the gallop-out, ears pricked, still driving through space.

He built on that attack sequence in start #4 when breaking his maiden in the slop on a foggy, rainy day at Gulfstream. In 6th place early, about 8 lengths behind a runaway leader, Attachment Rate split horses then took charge of the back herd.

He was really bulldozing forward space in this race. As the leader tired, Attachment Rate was moving in tandem with a horse named Rag Tag. He was so comfortable – it was beautiful seeing him move with a partner as they engulfed the leader -- but Rag Tag didn't have the talent to stay with him to the wire. Attachment Rate struggled to release his buddy as he distanced the field. Still stuck on his left lead, he won by 6 lengths. That was quite a maiden win.

Attachment Rate made his graded stakes debut in the Gotham Stakes (G3). He broke inward, bumping with War Stopper at the start. We can tell Attachment Rate didn't mind the contact because there was no body language reaction and no interruption to his sequence.

In 8th place early, he advanced up into a pocket less than a length behind the leaders. Attachment Rate had horses directly in front of him and stacks of horses on each side of him but he was moving so fluidly. Firmly grounded in the Group Herd Dynamic, the potential of herd chaos doesn't stress him at all.

Attachment Rate's transition into IHD competing mode, on the other hand, was still a work in progress. Stuck on his left lead yet again, he let the leader Mischievous Alex slip away. Attachment Rate did keep driving however and he was in the

process of taking down the second-place finisher Untitled when the wire came up.

We liked the way Attachment Rate finished the Gotham. He ran through the wire strongly, and on the head-on we could see he was influencing the motion of Untitled late in the race, pushing him out laterally.

The Unbridled Stakes was one of Attachment Rate's most entertaining races. He broke in GHD mode, but he was checked off the heels of #6 Soros heading into the first turn. Attachment Rate was uncomfortably close to that horse, but Attachment Rate barely reacted – no tail stress and minimal momentum loss. He really enjoys being close to other horses.

That desire would lead to an interesting subplot when Saez and Attachment Rate engaged in a space battle with Dr. Post and his rider Irad Ortiz Jr. It looked like there was some rough riding and hot emotions between those two. Attachment Rate was more than happy to try to hold Dr. Post in and play bumper cars. Attachment Rate's inability to transition and switch to his right lead is definitely a disadvantage. Dr. Post, moving with better efficiency in IHD, eventually got the better of him and won by 1 ½ lengths.

Without a defined pattern of motion, and given his struggles to cleanly transition into IHD, Attachment Rate is often reacting to the race around him. He is talented and does a lot of things well, but we rarely see him take charge of a race.

In the Matt Winn Stakes (G3) he took the first turn 5-wide while sandwiched between Maxfield and Major Fed. Most horses would have been pinched back out of that position, but Attachment Rate was determined to stay in there.

This stalking pattern of motion looked promising as he advanced 4-wide turning for home. He looked like he was about to target the leader Ny Traffic and run on. But again Attachment Rate got stuck on his sensory lead change. Now hanging in space instead of driving forward, he just watched as Maxfield blew by him, temporarily losing control of his lateral motion in Maxfield's wake. He regathered himself enough to hold off Necker Island for 4th place.

In the Blue Grass Stakes (G1), Attachment Rate was bumped and brushed by Rushie at the start, and this time it cost him some ground. Rider Joe Talamo guided him over to the rail, then made an early move on the backside (into a pretty hot pace) to reach contention. Attachment Rate tried hard to make a second move from there. He persevered for a while, but it looked like he got a little tired just before the wire. He finished 5th, 8 ½ lengths behind Art Collector. That was a stronger effort than it appears on paper.

Talamo rode Attachment Rate differently in the Ellis Park Derby, and the result was interesting. He asked him for speed at the start. Attachment Rate responded with the most efficient pace stalking/pressing pattern of motion of his career.

Caught wide on both turns, Attachment Rate looked engaged from start to finish. He even changed leads in the lane as he tried to run at Art Collector. Attachment Rate finished 2nd, 3 ¼ lengths back, but it was another 5+ lengths back to Necker Island in third place. That was the best race of his career and a potential growth experience.

Attachment Rate is physically talented, and he has elite Group Herd Dynamic skills. He moves deftly in close space, has no fear in situational chaos, and he is an elite interpreter of herd motion.

But his pattern of motion remains undefined, and he has consistently struggled with sensory lead changes in IHD. He moves in GHD and builds energy beautifully. But at that final moment when it is time to switch leads and finish a race, he often gets stuck.

Talamo and trainer Dale Romans might have made a discovery at Ellis regarding how to ride Attachment Rate and creatively transition into IHD. He was more tactical, and when he hooked to Art Collector in the lane, that helped tow him forward through his final transition.

We don't know if that race is repeatable, but if they can utilize his elite GHD and then efficiently launch him into IHD in the Derby, Attachment Rate could surprise some people. Attachment Rate is an unlikely Derby hero, but he has some nice aspects to his Herd Dynamic.

MAX PLAYER

Dark bay colt by Honor Code—Fools In Love, by Not For Love

Bred in Kentucky by K & G Stables

IHD   GHD

IHD/GHD Ratio: 30/70

IHD Power: 78

GHD Efficiency: 65

Pattern of motion: GHD closer

KY Derby Herd Dynamic Rating: 69

Max Player does not have an extremely fluent psychology, particularly early in herd motion or when he encounters new stimulus. But once he gets comfortable and dials in, his Herd Dynamic power and athleticism come to the surface.

This often results in a closing pattern of motion that is good at picking up the pieces late. Sometimes it is good enough to win.

Max Player appears to be a very strong physical horse, but there is definitely something quirky about his psycho-sensory system. New York-based trainer Linda Rice debuted Max Player in a 1-mile maiden race at Parx on November 12.

Max Player displayed significant behavioral overcompensations in his first race, and he still almost won. He broke slowly and was running head-high, climbing early. He was on the verge of what we call "pressure up," where a horse seeks to escape stimulus by releasing energy straight up through its head. He just barely held it together, almost blowing the first turn.

It looked like he also had an issue with kickback as he fell back to last place, gapped by the field. Max Player finally started showing some forward focus as the field approached the top of the far turn, and when rider Angel Rodriguez asked him for run, Max Player responded.

He passed every horse but the winner Ashraq, and Max Player would have had him too had he not drifted outward on his final transition. Max Player missed winning by just a half-length. It looked like he had a lot of energy still to give on the gallop out.

Rice added blinkers in start #2, another 1-mile maiden race at Parx run on a sloppy/sealed track. Max Player bore in at the start, but he secured better early position. He got what we would consider to be an over-active ride from Rodriguez – hitting Max Player too early and too often.

We could see Max Player's emotional energy trying to find a channel to run through when he was put under pressure. A more patient ride and simple time-in-motion is usually the best filtering process.

The rider is ultra important for a horse like this, and we are referring to both individual race performance and pattern-of-motion development. Max Player's ability to get into a willing, efficient competing mode is based on him filtering out stress properly and finding comfort in competitive herd movement. If you ask a horse for additional forward energy at the wrong time, it's likely to go many places other than forward – high headed, lateral movement, or loss of body control and decreased stride efficiency.

We are not big fans of adding blinkers in a second lifetime race. It makes it harder to judge how much experiential learning occurred in the first race and how much improvement can be attributed to blinkers.

His second race still featured plenty of inefficiency, but once he got moving forward, 4-wide around the far turn, Max Player was much the best. His head came down a bit as he coasted under the wire, 4 lengths in front, environmental stimulus and the pressure from the rider finally removed.

With the maiden win secured, Rice aimed Max Player at the big leagues, taking a shot in the Withers Stakes (G3) at Aqueduct in his three-year-old debut.

Max Player showed excellent progress at the start, jumping out of the gate into a stalking position. But as traffic was unfolding heading into the first turn, his head came up as he looked to back out of the chaos. Rider Dylan Davis tried to push him forward through the first turn, but Max Player hadn't found his comfort zone yet.

Max Player's head started to lower on the backside after moving outside of horses for a bit. When Davis asked him to go, the transition was not clean. Max Player was distracted by Monday Morning QB trying to launch inside of him. But he gradually found his competitive IHD mode, and as his competitors slowly weakened and fell away, Max Player became stronger and more efficient. He won by three lengths.

Next came the Belmont Stakes (G1) (changed to 1 1/8 miles this year) and a rider switch to Joel Rosario. Max Player came out of the gate with decent control, but he soon was struggling a little with his interpretations. His head started to come up, but Rosario did the right thing – he let him relax and filter out the stress for a while.

In 9th place as the field approached Belmont's sweeping far turn, Rosario began asking Mask Player for incremental improvement. His transitions still looked a little sticky in traffic, but he advanced to 7th place on the outside turning for home. That is when Rosario asked for his all, and Max Player produced a solid run to finish third, 5 lengths behind Tiz the Law. His final furlong in :11.86 was the fastest in the field.

As far as his in-race sequence and fluency goes, the Belmont was as good as Max Player has looked. Rosario deserves a lot of the credit for that ride.

Max Player and Rosario delivered a similar effort in the Travers Stakes (G1). He did a stutter step out of the gate, but again Rosario gave him time to work through his early stress vibrations. We noted earlier in his career that Max Player might be a little sensitive to kickback, and that might have popped up again in the Travers.

Rosario eventually guided Max Player to the outside and asked him for his run. The initial IHD transition was a little delayed – this is not a push button horse -- but he eventually found his best gear and came running for third place, trying hard all the way.

Max Player showed he can get 1 ¼ miles just fine in the Travers. Added distance is helpful for him as long as his rider doesn't rush. Of course, this pattern of motion will always be at the mercy of pace dynamics.

Max Player has changed barns since the Travers. New trainer Steve Asmussen might not see it the same way we do, but he probably has picked up on some of Max Player's quirks. Whenever you have a horse with efficiency issues, there are very real reasons for the problem. But there also is potential for improvement.

The chaos and big Herd Dynamics of the Kentucky Derby will be a hurdle for Max Player. The more patient the ride and the more environmental stimulus can be minimized, the cleaner his run will be. Blinkers have helped him in that regard while also funneling his energy to one (forward) spot.

We respect Max Player's athleticism and his willingness to battle through his issues. He always tries hard. In this race, we think a minor award is probably his ceiling.

ENFORCEABLE

Gray colt by Tapit—Justwhistledixie, by Dixie Union
Bred in Kentucky by Clearsky Farms

IHD   GHD

IHD/GHD Ratio: 35/65
IHD Power: 71
GHD Efficiency: 67
Pattern of motion: GHD Closer
KY Derby Herd Dynamic Rating: 68

Enforceable made his debut on May 2 of his two-year-old season – two days before last year's Kentucky Derby.

Those early season juvenile races are known more for precocious speed types than Derby horses, but Enforceable has proven to be a router with a good distance profile. The 1 ¼-mile distance of the Kentucky Derby has the potential to be a positive for him.

However, we have some concerns about Enforceable's Herd Dynamic development, which seemed to hit its peak early this year in Louisiana.

It took Enforceable four races to break his maiden. He ran 2nd and 3rd in those aforementioned early-season juvenile sprints. We didn't note any major issues in those runs. He was yet to develop a pattern of motion and he just looked like a young, competitive minded horse out there running.

He appeared to be slanted to the Group Herd Dynamic, but he was running with his ears pinned. That intensity in GHD is not unusual for his sire line. Sometimes Tapit offspring can be quirky and they will over-intensify on transitions, but Enforceable seems like a reasonably good-minded horse.

Trainer Mark Casse stretched Enforceable out to two turns on the turf at Saratoga in his third start. He endured some bumping early and was a victim of traffic for most of the race. We didn't see him do much wrong, but he did appear to be searching for open space and reacting to herd chaos more than imposing his will on the environment. He finished a troubled 5th.

Casse decided to add blinkers in Enforceable's fourth start, a 1 1/8-mile dirt race. His space awareness suffered a little, but the blinkers nudged him out of that slightly wandering, reactive focus and gave his IHD energy a wakeup call. He won with a methodical, grinding IHD energy. A 1 1/8-mile dirt race is a considerable stamina test for a two-year-old in August, and Enforceable passed it.

Enforceable made his graded stakes debut in the Breeders' Futurity Stakes (G1) at Keeneland. He was executing his GHD closing trip quite well, rallying three-wide on the far turn when he got his doors blown off by Maxfield (an elite level Herd Dynamic horse who will miss the Kentucky Derby with an injury). When a GHD closer gets passed by a superior Herd Dynamic, that tends to take some wind out of their sails. Enforceable fell in behind horses, his forward projection shrinking. He stayed on for third place.

Enforceable proceeded to the Kentucky Jockey Club Stakes (G2) next. We noted he was a bit head high early in this race when in GHD mode, something he did not do early in his career. This intensification to stimulus directly in front of him is probably part of the shift from wearing blinkers.

He once again ran his GHD closing pattern of motion and ran a staying-on 4th. He doesn't quit – he was still chasing the horses in front of him at the wire -- but his Herd Dynamic was a cut below the elite two-year-olds.

Enforceable made his three-year-old debut in the Lecomte Stakes (G3) at Fair Grounds. Again executing his methodical GHD closing pattern of motion, he got going on the far turn into an IHD drive. Given a clean path in front of him – no traffic and no elite HD opponents -- he took the lead and won by 1 ½ lengths. This was his signature win.

Enforceable ran a very similar race in the Risen Star Stakes (G2) though his trip wasn't as clean. He got cut off at the start and into the first turn. Again he was a little head high on forward interpretations, especially early in the race.

Jockey Julien Leparoux asked him for an early run on the backside, and Enforceable obliged, running up into the body of the herd. He had to make two moves in this race, and he did a pretty good job sliding laterally and then attacking in the stretch. It took all he had to take down Silver State for second place. He never advanced enough to target the leader Mr. Monomoy, who won by 2 ½ lengths.

Enforceable finished the Fair Grounds series with a slightly disappointing 5th-place finish in the Louisiana Derby (G2). He was rallying methodically down the lane when he and Major Fed got tangled up in a space battle. Enforceable got the worst of it and was slammed back to the inside. He finished evenly, not quite able to impose his will on that herd.

Casse freshened Enforceable following his Louisiana campaign and brought him back in the Blue Grass Stakes (G2). We saw a slightly rusty version of the horse we saw in Louisiana. Head high in traffic early, he executed his GHD closing pattern of motion to finish 4th, beaten 8 ½ lengths by Art Collector.

The Kentucky Derby will be his second race since returning from a 16-week layoff. From a fitness perspective, he can be expected to improve off the Blue Grass.

Enforceable has been most effective when he moves sustainably through the environment and lets his physical stamina do the talking. He always tries his best and does not quit, and we like that his pattern of motion is well practiced and ingrained. A minor placing feels possible.

MAJOR FED

Dark bay colt by Ghostzapper—Bobby's Babe, by Smart Strike

Bred in Kentucky by Lloyd Madison IV LLC

IHD   GHD

IHD/GHD Ratio: 40/60

IHD Power: 81

GHD Efficiency: 53

Pattern of motion: One-run closer

KY Derby Herd Dynamic Rating: 64

On first glance at his running lines, Major Fed appears to be a Group Herd Dynamic closer. But when placed under our microscope, he appears to belong to a sub-category -- the one-run closer.

At his core, we believe Major Fed is an intense, IHD-slanted horse with a fast-spinning psychology.

His sensory system definitely has some holes in it, as evidenced by his gate performance. Major Fed has run six times, and all six times he broke poorly, often splaying his front feet as the gate opens. This behavior comes from the internalization of stress. Instead of exploding out of the gate forward, Major Fed feels pressure and shrinks up, his feet spread outward and he seizes up for a split second. That hesitation at the start costs him valuable position and has shaped his pattern of motion.

Major Fed's Herd Dynamic was pretty much all there to see in his debut race – a 6-furlong dirt sprint at Churchill Downs on Nov. 23. His feet splayed at the start and he drifted inward about 4 paths. He was running with his head high, and looking intense in early traffic.

This race was run on a sloppy track, and although Major Fed was green, his stride looked sure-footed and athletic as he stalked the pace from 6th position. When rider Brian Hernandez asked him for run turning for home, Major Fed was willing. His head was still a little high as he intensified into IHD, but he showed some strong forward focus and competitive spirit. He came running to finish third, definitely doing his best running late.

Major Fed's body control looked very good when he was in an all-out drive (better than when he was rating in traffic). We thought he ran well in his debut.

Major Fed made his second start on Jan. 1 at Fair Grounds. Trainer Greg Foley added blinkers and stretched him out to 1 1/16 miles.

Breaking from the outside post in a field of seven, Major Fed broke a little worse than in the debut. He entered the first turn head high, in 5th place, trying to settle.

Major Fed shows good forward extension at times, but his space awareness looked a little off wearing the blinkers. He was partly guessing where he was in relation to the other horses, swerving in light traffic on the backstretch, with slightly exaggerated body language. When Hernandez guided him to the outside, Major Fed looked slightly clumsy making the lateral move.

Moving 4-to-5-wide around the far turn, Major Fed kicked into IHD competing mode. He is a powerful, athletic mover when he is flowing freely. His body control looked good again, and he was getting good thrust as he pushed off from the ground. He won by 4 ¼ lengths.

Major Fed has handled the jump to graded stakes competition fairly well, but his profile has not changed at all since in the four races after that maiden win.

He only did a small stutter step at the start of the Risen Star Stakes (G2), but he looked uncomfortable and a little wobbly in traffic early. Interpreting stimulus is his biggest challenge.

Even though Major Fed has a slightly hard time when in traffic in GHD mode, he doesn't demoralize easily. He ran on well once he got to the outside in the lane. He finished 2nd, a length behind Modernist but a neck in front of NY Traffic. Major Fed looks fluent and athletic when he is in the clear.

Major Fed had the rail post in a big field of 14 in the Twinspires.com Louisiana Derby (G2). He splayed his feet at the start and was dead last, gapped by the field early. Rider Joel Rosario steered Major Fed to the outside on the far turn and he ran hard to the wire, twice bumping with rivals in the lane. Both times Major Fed held his path and kept his forward drive through contact. He passed 10 horses to finish 4th, beaten 4 ¾ lengths.

Major Fed's IHD is strong and competitive, but it is a winding path for him to get to the point where he can launch cleanly. It caught up to him in the Matt Winn Stakes (G3) at Churchill Downs.

Breaking from the outside post in a field of 10, he splayed his feet at the start, his left leg planting very wide. He might have tweaked something there at the start, or maybe it was just the very wide trip that added up, but after trying to launch on the far turn, Major Fed faded to 10th place. It was the only non-competitive finish of his career.

He didn't break any new ground, but Major Fed got back on track in his final Derby prep when finishing 2nd in the Indiana Derby (G3). He hesitated and was squeezed at the start, back to last place.

He made a big wide move on the far turn, and he was right next to the winner Shared Sense. However, a delayed sensory transition led to a sloppy physical lead change. Major Fed finished second. It was another solid but slightly inefficient run.

Major Fed has a lot of talent, and he is a hard-trying, competitive minded horse with a nice stride. But he is not a good gate horse, nor is he particularly smooth in traffic, and those two things could make the Kentucky Derby difficult for him.

Blinkers were added in start #2, and we don't think they have helped him. Specifically, the blinkers have denied him the chance to develop positive associated stimulus when breaking from the gate and when negotiating herd chaos.

If Major Fed can work out a clean trip, we wouldn't be surprised to see him passing horses on the far turn and down the stretch in Louisville. A respectable finish is not out of the question, as there is upside here. But given his inefficiencies, the Kentucky Derby is an unlikely spot for him to put it all together.

MONEY MOVES

Bay colt by Candy Ride (ARG)—Citizen Advocate, by Proud Citizen

Bred in Kentucky by Whitehall Lane Farm

IHD GHD

IHD/GHD Ratio: 70/30

IHD Power: 65

GHD Efficiency: 55

Pattern of motion: IHD Speed, still developing

KY Derby Herd Dynamic Rating: 62

Money Moves was a late addition to this year's Kentucky Derby, joining the field just a week out after trainer Todd Pletcher decided to point Dr. Post to the Jim Dandy Stakes (G2) instead.

He is the type of horse we would not have seen in more traditional years -- lightly raced, no graded stakes experience and virtually no cross form with the rest of the field.

Money Moves was a $975,000 purchase at the Ocala Breeders Sales Co.'s 2019 April sale of two-year-olds in training. He did not make his racetrack debut until February 15 of this year at Gulfstream Park. That 6-furlong maiden race was run over a sloppy track.

Breaking from the 3 post in a field of 11 and wearing blinkers, Money Moves bobbled slightly after the start. Shuffled back to 8th place early, he was cycling very quickly in IHD mode. Luis Saez asked him for an early move, and Money Moves showed an intense forward focus as he started to advance. Moving that early is a sign Saez didn't think he was in the right spot at that point of the race.

Likewise, being in the back half of the herd early is probably not Money Moves' preferred pattern of motion either, especially with the blinkers on. Under a constant ride, Money Moves chased the leaders from the inside, then slid out 4-wide turning for home.

He looked athletic on the lateral move, but as the field straightened into the lane, he got stuck on his sensory transition, and that led to him getting stuck on his left lead.

He finally competed his lead change around the 1/16 pole, and got up to win by 1 ¼ lengths. It was not a pretty win from a stylistic or efficiency standpoint, but Money Moves showed raw talent and desire, and he got the job done.

Money Moves returned on March 27 in an allowance race going 1 mile at Gulfstream. He drew the tricky rail post in a field of 12. This time he broke very well. Setting a pressured pace from the inside, Money Moves was running with ears pinned. He has a lot of competitive fire.

The other horses briefly stacked up 5-deep outside of him on the far turn. That puts a ton of pressure on the inside horse. Money Moves lost the lead narrowly, but he held his lane and re-kicked for home, drawing off to win by 2 ¾ lengths. This was a much more efficient performance than the debut, and the race was fast at every point of call. This was a promising win.

Money Moves had some time off and missed the spring/summer Derby preps. He returned in a NW2X allowance race at Saratoga, where he faced older horses at 1 1/8 miles.

Money Moves looked a little distracted in the gate, and when it opened, he lurched to the outside, but quickly recovered. He got an outside, pace-stalking trip in this race that suited him well.

Saez asked him to intensify turning for home, and he got the jump on his main competition – a 5-year-old gelding named Prioritize, who was inside of Money Moves, hemmed in behind the leaders.

But Money Moves was unable to release and move forward, and eventually the older horse was able to influence his motion a little, pushing him out and then getting in his grill all the way to the wire. Prioritize won by a neck. Money Moves went into adjunct mode late. He knew he was second best in that herd.

Facing older horses in advanced allowance conditions can be a sneaky way to test a three-year-old. Sometimes those races are harder than age-restricted graded stakes.

Money Moves did ok in that race, and it was off a layoff, but he did suffer a Herd Dynamic defeat in his final prep. Some horses bounce back great from that experience; others need a race to re-affirm confidence.

Money Moves is clearly a talented horse, but he is still in the early stages of his Herd Dynamic path. His pattern of motion is still developing, he is still learning energy distribution, and his transitions are a work in progress. He has very little seasoning to fall back on. The jump to a Grade 1 classic race feels like an ambitious task.

WINNING IMPRESSION

Gray colt by Paynter—Unbridled Sonya, by Unbridled's Song
Bred in Kentucky by WinStar Farm

IHD   GHD

IHD/GHD Ratio: 60/40
IHD Power: 62
GHD Efficiency: 60
Pattern of motion: Still in development
KY Derby Herd Dynamic Rating: 61

It happens every year when we study the Kentucky Derby entrants. We find a horse that appears to have no chance to win the race, but we fall in love with the personality and effort we see on video.

Winning Impression, a hard-trying colt who enters the Derby off a pair of 7th-place finishes, is one of those horses.

Winning Impression's trainer Dallas Stewart has a reputation for hitting the board with longshots. His trainees Golden Soul (34.5-1 in 2013) and Commanding Curve (37.8-1 in 2014) both finished second in the Derby.

Sometimes we see patterns in the type of horse a trainer does well with. Golden Soul and Commanding Curve both profiled as Group Herd Dynamic closers, perhaps a specialty for Stewart.

Winning Impression has an IHD slant, but he hasn't yet developed a consistent pattern of motion. He is still an open book, and Stewart has allowed him to experiment.

Winning Impression broke his maiden with a pace stalking trip. He won an allowance race at Oaklawn Park with a mid-pack closing trip. And in his most recent race the Ellis Park Derby , he tried to close from dead last in a 12-horse field.

The constant in all of Winning Impression's races is effort and competitive engagement. His psychology is well-suited to being a racehorse, and he appears to enjoy it.

Winning Impression debuted at Churchill Downs on November 2 in a 6-furlong maiden race. He broke ok, flashed a little speed, fell back, then hitched a ride on herd momentum to rally for 5th place. He was green and he did not run a pattern of motion. To us, this looked like an example of letting a horse experience competitive herd motion and learn from it -- no blinkers, no pressure from the rider. It is an excellent, old-school approach to debuting a young horse.

Winning Impression took a step forward in his second start at Fairgrounds on November 29, but the effort got buried by

trouble. He stumbled badly out of the break, then was bumped and pinched back. But his engagement kicked in on the far turn and he came running with good intensity and extension. He finished 5th, beaten 3 lengths. His competitive IHD cycles were emerging.

Winning Impression got his first win in start #3, an off-the-turf maiden race going 1 1/16 miles in the slop. He broke well, again showing the emerging IHD energy from his last race. He tracked the pace from 4th on the backside, then advanced wide on the far turn. After he took the lead in the lane, he showed a good reaction to rear pressure, using it to propel himself straight forward.

He won by 3 ½ lengths and had good energy on the gallop-out. He loved the slop, and we liked the purposeful, hard-trying identity that emerged there.

Winning Impression ran two more times in allowance races at the Fair Grounds meet, finishing second and third. The horses he lost to were fringe horses on the Triple Crown trail (Mailman Money and Shake Some Action), but we still liked the competitive traits and heart he showed.

Winning Impression moved on to Oaklawn Park and broke though against winners in an allowance race on April 4 but was DQ'd. Again Winning Impression showed an affinity for a sloppy track. We particularly liked how he held his ground while between horses, showing a natural inclination to extend forward. This was a willing, athletic run, and we hated the steward's decision to take the best horse down.

Sensing improvement, they took a shot in the Arkansas Derby (G1) next. Winning Impression was in the division won by Charlatan, a very fast horse that will miss the Kentucky Derby.

Winning Impression got a tactical, mid-pack trip. He launched willingly on the far turn but he couldn't make up any ground on Charlatan, who really stretched that field out. Winning Impression tried very hard, showing some expressive body

language, and hung on for 4th place. He was later elevated to 3rd place when it was revealed that Charlatan had failed a drug test.

Next came a try in the Indiana Derby (G3). Winning Impression got bumped at the break, was wide on the backstretch and got outmoved on the turn. He still tried hard late, but he didn't have much impact as he finished 7th.

Winning Impression had a tough post (#11 in a 12-horse field) in his final Derby prep, the Ellis Park Derby. He broke ok, but rider Joe Rocco Jr. took back, deciding to sacrifice early position in exchange for saving ground through the first turn.

Winning Impression is game to try whatever his rider asks of him, but that was probably not the best pattern of motion for this IHD-slanted, forward-minded horse. He spun into the stretch in 11th place and ran as hard as he could to the wire to finish 7th.

Winning Impression enjoys competing, and he gives it everything he has got. He does not sulk -- if he is in 9th place, he is going to look for a way to try to get to 8th. He just doesn't have the physical ability or Herd Dynamic power of some of the horses in this race.

The connections have a willing, perseverant athlete here that still has upside. Hopefully this underdog has a safe trip, runs well and he can build on his Kentucky Derby experience in the future.

NECKER ISLAND

Chestnut colt by Hard Spun—Jenny's Rocket, by Mr. Greeley
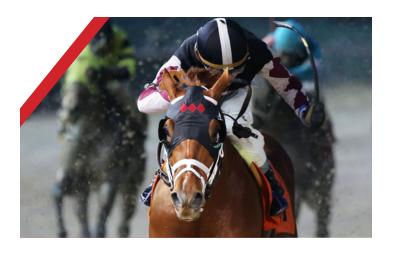**Bred in Kentucky by Stonestreet Thoroughbred Holdings LLC**

IHD   GHD

IHD/GHD Ratio: 80/20 (with blinkers)
IHD Power: 62
GHD Efficiency: 57
Pattern of motion: IHD speed, can lead, press or stalk.
KY Derby Herd Dynamic Rating: 61

We don't know what Necker Island is like when he doesn't wear blinkers, because he was worn them in all 10 of his career races. But one thing we are sure of – this is a horse that is still searching.

Searching for where he fits in the class hierarchy. Searching to understand the herd motion around him. And more than anything else, searching for open space to run into.

Necker Island looks like a big, strong, hulk of a horse on video. Lateral movement is not his forte. Trying to stop and start is not recommended.

Necker Island's game is sustained speed. His best pattern of motion is to get out of the gate well, establish momentum and keep on rolling.

He got the opposite of that trip in his debut at Saratoga last August 31. Necker Island broke from the gate like an IHD-slanted speed horse, but jockey Luis Saez checked him early to stop him from trying run up a small opening on the inside. Then Saez checked him again in the lane when a hole closed faster than Necker Island could hit it. Saez is a great rider but this was not his best work, especially on a debuting colt who was running with tunnel vision thanks to being outfitted with blinkers and a shadow roll.

Following that troubled third-place debut, Necker Island reeled off a pair of nice wins at Churchill Downs, breaking his maiden going 7 furlongs and then winning an allowance race at the 1-turn mile configuration

He went wire-to-wire in the maiden, in the clear all the way. We noticed a lot of front-to-back, back-and-forth ear articulation. He was trying to corroborate the signals his senses were picking up behind him.

Then he stepped right up in class to beat a good allowance field. Again in the clear, he won a pace duel with future Grade 2 winner Wells Bayou, then re-rallied after being caught in the stretch by Silver State (who would go on to be multiple graded stakes placed). Necker Island showed he is a tough, physically gifted horse in those promising two-year-old races.

But we are always concerned with a horse's growth curve when it wear blinkers from day one and never get the chance to experience herd motion without them. Running through those challenging spots, making mistakes and learning from them, is an essential part of how horses learn.

Necker Island made his three-year-old debut in the Swale Stakes (G3). His ears looked intense and stiff as he chased the pace early from 6th place. He didn't like being outsprinted, and he was struggling to interpret the race unfolding around him. Unable to make an impact, he finished 5th, beaten 11 lengths.

Next came a 5th-place finish in the Gotham Stakes (G3), where he was checked early and pocketed for much of the race. He showed some grit to rally in the lane, but he looked a little clumsy when moving laterally to get out from behind horses.

One recurring observation we had while watching Necker Island is that he is willing to bull his way into space that his riders deem unsafe. This is another sign that his space awareness may be a little off. It happened again in the Unbridled Stakes when Dylan Davis had to slam on the brakes three different times.

Following a 5th-place finish in the Matt Winn Stakes (G3), Necker Island was offered for a $100,000 claiming tag. He finished last in that field of four, but his current connections plunked down the money and got themselves a ticket to the Kentucky Derby.

New trainer Chris Hartman elected to stay with the blinkers and took a shot in the Indiana Derby (G3). Necker Island looked like he was feeling pressure entering the gate. He stumbled at the start and looked out of sorts early, struggling to interpret his environment.

We have to give this horse credit for running through uncomfortable situations, as he worked out a decent stalking trip on the outside. He made a nice early move to contention, but then he stuck with the leaders too long. He has a habit of competing with the horse next to him and losing awareness of the bigger picture.

Shared Sense, then Major Fed rolled up on him. Necker Island's head came up and he drifted inward. Only after Shared Sense was well clear did he drop his head and re-engage. His physical gas tank was not empty, but the sensory disruptions were substantial.

Necker Island enters the Kentucky Derby off a distant third-place finish in the Ellis Park Derby. Rider Mitchell Murrill had to check him twice early. Necker Island must feel like a bull in a china shop to ride!

Murrill did a good job working his way to the outside to give Necker Island his preferred outside stalking trip. They made a four-wide move turning for home, but the sensory disruption struck again. He got stuck on his lead change and drifted inward. He was outrun by Art Collector and Attachment Rate in the lane.

Necker Island is a gritty, physically gifted horse. He has upside, but so far we don't see much Herd Dynamic growth since his two-year-old season. Sensory interpretation issues are contributing to his under-achievement, and they are very likely to come into play again in this 18-horse Kentucky Derby.

STORM THE COURT

Bay colt by Court Vision—My Tejana Storm, by Tejano Run
Bred in Kentucky by Stepping Stone Farm

IHD ——————————————————————— GHD

IHD/GHD Ratio: 75/25
IHD Power: 64
GHD Efficiency: 52
Pattern of motion: IHD Speed. Presser/stalker.
KY Derby Herd Dynamic Rating: 61

The best and worst thing that ever happened to Storm the Court was winning the Breeders' Cup Juvenile (G1).

Finishing first in the most important race in America for two-year-olds made Storm the Court the horse of a lifetime for his connections. No one can ever take that incredible accomplishment away.

But with those honors comes high expectations at age three. And so far, Storm the Court has not lived up to them. After examining his races, we doubt he ever will.

Storm the Court is an above average physical talent, but we grade his Herd Dynamic to be below average by Kentucky Derby standards.

Storm the Court debuted at Del Mar in a 5 ½-furlong maiden race on August 10, 2019. He broke well and went right into a precocious looking IHD speed cycle. He battled down the lane with a Bob Baffert trainee named Garth (still a maiden to this day) and won by 1 ½ lengths.

His second career race was a disaster not of his doing. Eight Rings drifted inward at the start twice, the second time crashing into Storm the Court, unseating rider Flavien Prat.

Storm the Court ran in the American Pharaoh Stakes (G1) next going 1 1/16 miles on the dirt at Santa Anita. He was bumped at the start but he shook it off. He comes out of the gate with some grit, and he is emotionally expressive.

He got a pace stalking trip, but we didn't see much forward target focus. Storm the Court looked like a close-space combat horse who is content to battle or just run with whoever is next to him. He won that battle for 3rd place against Express Train, but he finished eight lengths behind Eight Rings.

We thought he still had good energy running through the wire, but the pattern of motion needed some work.

Trainer Peter Eurton outfitted Storm the Court with blinkers for the Breeders' Cup Juvenile (G1). It was a great decision. Storm the Court broke and went to the lead.

With blinkers funneling him forward and Eight Rings chasing on his flank, Storm the Court looked fluent while running in IHD cruise control on the front end. He cut the corner for home with a slim lead. Eight Rings was fading, but Anneau d'Or emerged four-wide as his challenger.

Those two hooked up in a stretch-long battle. Storm the Court drifted out several paths to get close to Anneau d'Or, who was not exactly intent on passing. With Wrecking Crew in third place but stuck on a lead change, no one else was coming.

Storm the Court and Anneau d'Or buddied up through a final 1/16 in a slow :6.94. Anneau d'Or never got his head in front. Storm the Court got the job done, but it might have been the weakest Juvenile we have seen from the standpoint of physical speed and Herd Dynamic strength.

Without significant development, Storm the Court always figured to be chasing his early unexpected achievement.

He made his three-year-old debut in the 7-furlong San Vicente Stakes (G2). Storm the Court runs with intense ears; he is always cycling. His path showed some ripples, in the wake of a higher Herd Dynamic, when Nadal emerged early to take the lead.

Although his efficiency is average and he doesn't really have a pattern of motion, effort is not a question with Storm the Court. He tries as hard as he can as long as he can. But he will buddy up with another horse to match rhythm and outsource his GHD reads, as he did here with Fast Enough in the lane. Storm the Court finished 4th. He was only 2 ¼ lengths behind Nadal, but he never tried to target the winner.

He would face Nadal again in a division of the Arkansas Derby (G1). After checking early, he recovered and found a decent

stalking position in 4th place, just outside of King Guillermo. He had that rival hemmed in on the rail, but when the serious running started on the far turn, King Guillermo had the much stronger energy. Strom the Court could not contain or stay with him.

King Guillermo shifted outside and chased Nadal home, while Storm the Court fell backwards. Storm the Court finished a well-beaten 6th.

They gave Storm the Court a much needed class drop when they tried him in the Ohio Derby (G3), and Eurton also took the blinkers off. We liked that pairing very much, as it combines a potential confidence building win with opening back up his awareness. That can be a powerful combination. However, Storm the Court finished third, beaten 2 ¾ lengths behind Dean Martini and South Bend.

They tried Storm the Court on the turf in the La Jolla Handicap (G3) in his final Kentucky Derby prep. He looked unsure of his new footing early, but as the race unfolded we saw some forward projection develop as he was stalking the winner Smooth Like Strait. Storm the Court couldn't catch the leader, and he just barely held on for second place, but it might be worth trying him on the turf again, but at a shorter distance.

Storm the Court enters the Kentucky Derby with a lot of things going against him. He does not have an effective pattern of motion. He has been exhibiting some herd dependencies, and he has shown no significant growth since his unlikely Championship two-year-old season.

MR. BIG NEWS

Bay colt by Giant's Causeway—Unappeased (Ire), Galileo (Ire)
Bred in Kentucky by Don Alberto Corp.

IHD   GHD

IHD/GHD Ratio: 40/60
IHD Power: 60
GHD Efficiency: 55
Pattern of motion: GHD closer
KY Derby Herd Dynamic Rating: 57

Mr. Big News was one of the last horses to commit to this year's Kentucky Derby, jumping in after the race failed to draw 20 horses.

We can understand why the connections want to dream and give Mr. Big News a chance to run 1 ¼ miles under the Twin Spires. This is a strong, stamina type that could be dangerous if a hot pace develops up front and he gets a clean trip.

But after viewing his seven lifetime races, we have our doubts about this colt's ability to handle the herd chaos and big Herd Dynamics in this 18-horse field.

Mr. Big News has been a slow developer, learning the racing game in small increments.

He debuted at Keeneland on October 19 in a 6-furlong maiden race. He hopped to the inside when the gate opened, chased the pace for a while with his ears pinned, and tired to 9th. He needed that race to begin his mental and physical tightening process.

Trainer Bret Calhoun stretched him out to 1 1/16 miles next at Churchill Downs. Mr. Big News hesitated at the start and then after falling in behind horses, he was checked heading into the first turn.

Mr. Big News made an early move on the backstretch up into body of the herd, but again jockey Robby Albarado had to check him. It is hard to say if Mr. Big News' space awareness was off or if Albarado was just having trouble working his throttle. But two things were clear, this was not an easy horse to ride at this point in his career, and Mr. Big News is not an agile type that can be asked to start and stop and start again. He finished 5th, beaten 13 lengths.

Mr. Big News moved to Fair Grounds for his third and final start as a two-year-old. This was his second straight 1 1/16-mile maiden race run on a sloppy track. Breaking from the inside post in a field of five, Mr. Big News stumbled at the start.

From there he got a good, close-up stalking trip. As the field straightened for home, the two leaders parted, and that created a sizable hole for Mr. Big News to advance through. He came through to the lead around the 3/16 pole, but he was hesitant to drive into open space. The previous leader Strike Appeal then re-rallied and took charge of the race. Mr. Big News finished 2nd, beaten 4 lengths.

Learning in small bits and pieces, Mr. Big News had his first big breakthrough in start #4, another 1 1/16-mile maiden race at Fair Grounds. Mr. Big News lurched at the start, but Albarado did not urge him, and that seemed to help Mr. Big News settle.

A close-up sixth in a field of seven early, Mr. Big News was showing some promising forward focus. He was beginning to advance a little under his own power when Albarado asked him for run around the 5/16 pole. Mr. Big News responded; we finally got to see what this horse can do.

Mr. Big news was clearly moving best of all but he was weaving from point-to-point through the lane. He caught Wild Union just before the wire to win by a nose. There was plenty more physical stamina in the tank.

Mr. Big News took his first shot at the Derby trail in the Risen Star Stakes (G2).He got out of the gate ok this time, but again Albarado checked him heading into the first turn. He got a pretty good trip otherwise, saving all the ground. But in the lane it looked like he was struggling to rally through the inside. His head was weaving a little, and it looked like his interpretations were a little off as he finished 5th, beaten 4 lengths by Modernist.

Mr. Big News isn't the quitting type, but he can be confused by herd chaos. And he is definitely not a thread-the-needle horse. It might be best to get him to the outside for a clean run, and that is exactly what new rider Gabriel Saez did for him in the $200,000 Oaklawn Stakes.

Saez kept all the chaos inside of him, and let Mr. Big News run

through space. This horse can move like a freight train when unimpeded, and Saez timed his move very well.

On the head-on we noticed every time Saez whipped Mr. Big News, he drifted two lanes in the opposite direction. Even with that weaving, he held on to win by a half length over Farmington Road. We thought that was a special ride by Saez. They made a great call signing him up to ride Mr. Big News again in the Derby.

Mr. Big News' most recent race was the Blue Grass Stakes (G1). Rarely efficient at the start, he stumbled again. He got a fine trip after that, but he wasn't fast or strong enough to impact that herd. He finished 6th, beaten 10 lengths.

The rider is critical for a horse like Mr. Big News. You have some power underneath you, but you don't have power steering. The jockey needs to take over the role of herd awareness for Mr. Big News and find a way to get him into the clear at the right time.

SOUTH BEND

Bay colt by Algorithms—Sandra's Rose, by Old Trieste
Bred in Kentucky by Highclere Inc.

IHD   GHD

IHD/GHD Ratio: 35/65
IHD Power: 60
GHD Efficiency: 55
Pattern of motion: GHD one-run closer
KY Derby Herd Dynamic Rating: 57

South Bend was the last horse to join the field for this year's Kentucky Derby. His connections, who purchased him privately following his fast-closing second in the Ohio Derby (G3), threw his name into the entry box at the last minute following news of Art Collector's scratch.

Interestingly, the last two horses to join this year's field – Mr. Big News and South Bend – have similar Herd Dynamic profiles. They probably also have the same game plan going into the race – relax early and make a big sustained run in the clear.

It is a strategy that has been attempted many times in this race over the years, looking to take advantage of the Derby's demanding distance to pass tired horses. But that might be a bigger deal on the first Saturday of May than the first one in September. These three-year-olds have had more time to develop and some are already proven at classic distance.

South Bend is one of the horses who already has run 1 ¼ miles. He finished a halfway decent 4th, beaten 9 ½ lengths by Tiz the Law, in the Travers Stakes (G1).

The Travers was South Bend's first race for Hall of Fame trainer Bill Mott, who made one subtle equipment change, removing South Bend's shadow roll. That is not a huge deal, but for a horse who has been slow to adjust to changes and new environments, we could see South Bend taking a small step forward in his second race in Mott's barn.

With 12 races on his resume, South Bend is the most experienced horse in this year's Derby. His development has been quite a winding road.

Previous owner Sagamore Farm and trainer Stanley Hough probably thought they had a Derby horse after South Bend won his first three career races, including a maiden race and the Street Sense Stakes at Churchill Downs. It's easier to see now, but South Bend revealed much of his Herd Dynamic profile in those three races.

In his debut, South Bend broke ok but fell back to 10th place early. He looked just a little high-headed at first, but he filtered out after some time in motion. He has a methodical way of going but his mental rhythms appeared to be spinning faster than his body was moving. That gap between the mental and physical can lead to inefficiency. It also can make a horse a little hard to read.

South Bend is not an elite interpreter of herd chaos, but he stayed out wide, ran his final quarter in a solid :24 flat and got up to win his debut by a nose over future Grade 3 –placed Answer In.

Following an allowance win at Keeneland, South Bend ran an even nicer race to win the Street Sense. He broke ok, got into a stalking position, split horses at the 1/16 pole and methodically rallied for the win. That was three nice wins in just a six-week span to start his career. His win total still stands at three today.

South Bend's development started going sideways with a 6th-place finish in the Kentucky Jockey Club Stakes (G2). He tried to run an IHD speed, pace-pressing pattern of motion, but after poking his head in front after six furlongs, the pressure got to him. He is better off with a pattern of motion that allows him to filter out stress and provides him a mental breather for part of the race.

Following a dull 4th-place finish in the Mucho Macho Man Stakes, they put South Bend on the turf for five consecutive races and also experimented with blinkers. His best performance was a 2nd-place finish behind Decorated Invader – one of the best three-year-old turf horses in America – in the Cutler Bay Stakes.

Hough removed the blinkers and put South Bend back on the dirt in the Ohio Derby (G3) on June 27. After relaxing in 10th place early, South Bend moved out wide and launched a nice sustained run that nearly put him back in the winner's circle.

He was running hard at Dean Martini late, but came up ¾ of a length short. He had a clean path and it was a Grade 3 field, but he showed good forward drive while running his final furlong in :12.79. It was the best race of his life and the performance that got him sold to his current ownership group of Gary Barber, Wachtel Stable, Peter Deutsch and Pantofel Stable LLC.

In the Travers, rider Jose Ortiz let South Bend relax early. He and Max Player launched their moves in tandem on the far turn, with Max going outside and Ortiz saving ground inside. Max Player covered more ground and had the better turn of foot, landing third place, with South Bend fourth.

We could see South Bend taking a little step forward here, but as a single-target, one-run closer, his pattern of motion is not very versatile. He would need to improve and have a lot of things break his way in order to make a mark on this Derby.

FINNICK THE FIERCE

Chestnut gelding by Dialed In—Southern Classic, by Southern Image

Bred in Kentucky by Paige Jillian & Blu Sky Stables

IHD _____ GHD

IHD/GHD Ratio: 30/70
IHD Power: 53
GHD Efficiency: 54
Pattern of motion: GHD stalker/closer
KY Derby Herd Dynamic Rating: 54

The Kentucky Derby may be a tough task for Finnick the Fierce, not because he is missing his right eye and not because he doesn't have physical talent.

Finnick the Fierce is an athletic hard-trying horse who needs help to read the environment and get through his transitions. Missing his right eye is in itself not the best case scenario – and it was probably made worse when he drew the rail post -- but it isn't a deal breaker.

The greater obstacle here is that he has, by nature, an inefficient sensory aspect and we believe a shorter optimal efficiency range than 1 ¼ miles. This could be particularly problematic in this complex 18-horse field.

The psycho-sensory system additionally is very important because it aids in the way emotional energy is used, conserved and eventually distributed into IHD during competing mode.

Finnick does his best work when he can outsource his GHD reads to his herd mates. This allows his focus and energy to be conserved and funnel forward without the nagging questions of environmental interpretation.

Outsourcing his reads can work for portions of races, but it is not a good substitute for independent reads and his own pattern of motion.

And there is no outsourcing in IHD competing mode. So even when he can hitch a ride to a good spot, his average Herd Dynamic presence doesn't do much for him in the heat of battle. More often than not, Finnick the Fierce is chasing but not influencing horses.

This is why Finnick can sometimes hit the board and finish close to graded stakes horses, but he never truly threatens to win those races.

Finnick's best race was his 2nd-place finish in the Kentucky Jockey Club Stakes (G2). His wide advance allowed him to see the entire field as a single unit, and he avoided much of the environmental clutter of this race run on a sloppy surface. He ran well there, but not good enough to take out Silver Prospector, who was himself being impacted by Tiz the Law.

Finnick has not built on that performance at age three.

In the Lecomte Stakes (G3) Finnick had the rail in a big field of 13. He walked out of the gate like someone stepping into a darkened room.

Finnick has good physical ability – he looked very athletic for parts of that sweeping, wide rally that took him from 12th place up to 4th in the Lecomte. But his run was disrupted when #9 Silver State encroached on his space. This was further evidence of Finnick's rank in IHD competing mode.

Trainer Rey Hernandez removed Finnick's blinkers after the Lecomte. He did not get a good result immediately. Finnick looked inefficient and lost while finishing 7th in the Risen Star Stakes (G2). But Hernandez stuck with the plan and allowed Finnick to continue to race again without blinkers. He eventually made some progress.

Finnick had the rail again in the Arkansas Derby (G1), and this time he broke ok. It does appear that getting outside of horses, where he can see them better, can help Finnick. But still there are disruptions. He made a run on the turn, stalled, then came running again in the lane on the outside. Finnick lost efficiency as he tried to approach King Guillermo late, but really he did quite well to finish 3rd.

Finnick's final Derby prep came in the Blue Grass Stakes (G2). Distracted at the start, he threw his head as he broke 12th of the 13 horses. Along the inside on the backstretch, Finnick

and rider Martin Garcia made a nice move to get to the outside and launch into a drive.

This is another one of those instances where Finnick looks quite athletic for part of the race. He advanced as high as 4th place in the stretch, but then his energy waned. He crossed the line in 7th place, 10 ¾ lengths back of Art Collector. All things being equal, Finnick's optimal efficiency zone is not likely to extend much further than 1-1/16 miles.

We admire Finnick the Fierce's physical athleticism and effort in the face of long odds. We think after the Derby he could still hold some potential for improvement, especially if redeveloped at shorter distance.

About the Authors
Kerry M. Thomas is a pioneering researcher of equine athletic psychology. His work began with the study of wild horse social structures and communication, and how those areas affect herd motion. He is the founder of the Thomas Herding Technique (THT) and author of *Horse Profiling: The Secret to Motivating Equine Athletes*. Kerry co-founded THT Bloodstock with Pete Denk. For more information, visit www.thtbloodstock.com or follow Kerry on Twitter @thomasherding.

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GLOSSARY

Behavioral Overcompensation: Occurs when one sensory avenue either by physical limitation or psychological aberration overcompensates, resulting in body language eruption and/or loss of mental and physical efficiency.

Buddy-Up: Occurs when a horse seeks the comfort of movement with another horse. When a horse buddies up, it is depending on another horse for environmental reads involving safety, direction and rhythm of motion.

Group Herd Dynamic (GHD): GHD encompasses a horse's awareness of the environment, including the herd around them and its overall ability to interpret stimuli. A horse with a good GHD can see/feel the big picture of herd motion (a race) and where the horse itself fits into that picture.

A healthy GHD usually is integral for a horse to consistently run well through traffic. Many horses with big group herd dynamic slants will prefer to be near the back of the field early in a race in order to read the other members of the groups' intentions. GHD horses can literally feed off of the energy of herd motion and are comfortable letting it unfold over time and distance.

Horses with high-functioning GHDs usually have the ability to travel with a herd while rating/conserving energy. For this reason, horses with good GHDs tend to get the most out of their physical bodies in terms of distance aptitude.

Herd Dynamic: a general term we use to describe a horse's overall herd level (its GHD and IHD combined with physical ability)

Individual Herd Dynamic (IHD): IHD is the dynamic that involves the self and a singular target. IHD mode is one-on-one competing mode, hence it is very important in racing.

A good IHD is integral to being a racehorse. IHD is the ability to turn on the intensity, fight for space, and vanquish an opponent.

Pattern Of Motion: A naturally occurring or learned response to the stimulus of a horse race that forms the basis of a running style.