THT BLOODSTOCK: PATTERNS OF MOTION ANALYSIS
WITH KERRY THOMAS AND PETE DENK

145 KENTUCKY DERBY
CHURCHILL DOWNS
MAY 4 · 2019

Ranked in Herd Dynamic order for 1 ¼ miles on May 4, 2019

1. Omaha Beach
2. Tacitus
3. War of Will
4. Game Winner
5. Roadster
6. Improbable
7. By My Standards
8. Maximum Security
9. Code of Honor
10. Win Win Win
11. Vekoma
12. Tax
13. Spinoff
14. Long Range Toddy
15. Haikal
16. Plus Que Parfait
17. Country House
18. Cutting Humor
19. Gray Magician
20. Bodexpress
21. Master Fencer

2019 KENTUCKY DERBY ANALYSIS INTRODUCTION
The Kentucky Derby & Herd Dynamics; The Nature of Competition

If you would have told me nine years ago that our dabble into providing a Herd Dynamic analysis of the Kentucky Derby would slowly but surely continue to build both in depth, as our work continues to grow, and in audience for years after, I probably wouldn't have believed you. Back then Pete and I were just starting to blend our working partnership; a serious blessing for me as he helps me translate the often times raw material in my mind into practical application. Our rostrum then was Kentucky Confidential, for which I am and will always be forever grateful. Their vision in providing a platform to who was then a relative "newbie" to the derby flavors afforded a most spectacular opportunity and challenge.

Each year we do our best to provide a snapshot of the herd dynamic hierarchy and behavioral genetic profile of the horses going into the Kentucky Derby, splitting hairs more often than not by way of considering naturally occurring tendencies in motion and under stress. Our main goal is to provide for you a detailed conspectus of the horses individually along with a herd dynamic ranking "order" based upon all of the information we could mine from film study; any notes we have on a particular horse we had inspected at an auction will be included in their profile. This year's top tier horses are very tightly knitted in herd dynamic strength, and coming up with an order of that strength is often by the smallest of differences. It's racing, anything can happen, but the top tier herd dynamic horses have in my opinion the highest probability of success.

I look at the horses through the lens of my instincts first and think of them both individually and together while asking myself the question, *out of ten races what is the likelihood of this horse finishing ahead of?* When competition is close, when fields are large, I lean on physical ability juxtaposed with herd dynamic strengths to answer the question of probability. This is the same core approach we take when we're asked to scout talent for private clients at sales, within an existing stable, for private purchase options or claiming opportunities. We utilize this fundamental approach when asked to assist with breeding decisions as well; behavioral economics being an important element in any investment strategy.

I say this all the time and I will say it again, race horses are not race cars; with a horse you're investing in both *car and driver*, if you're not considering the operating system of your physical machine, you're only considering half the athlete. That can be both costly and disappointing.

I love horse racing because by nature horses love to run, and I've always been fascinated by the natural herd dynamics and their particular influence on races in general. The Kentucky Derby is a unique experience that presents the horse athletes a variety of challenges both physically and emotionally that draw deeply upon their inherent behavioral genetic codes; their *herd dynamic*.

What are the herd dynamics? Born from the ebb and flow of Mother Nature's great storyboard, the predator/prey relationship, herd dynamics and structured hierarchy is the core of survival. They are the collection of the psychological matrix, the pieces of the jigsaw puzzle, the sequencing of the behavioral genetic code. They are often everything you don't see and everything you feel, there influence on the horse as an individual plays a major role in leveraging horses in a herd, most especially a herd in motion.

In short, herd dynamics are those naturally occurring traits, tendencies and characteristics that make up the individual psychology and where this places the horse in the hierarchy of the herd environment. It is as I have previously mentioned the operating system of the physical machine.

There are many ways to apply the idiosyncrasies of the psyche when it comes to equine sports. We always start by studying the raw materials of both the physical and emotional athlete and work our way up through the details. Horses as athletes come in three basic forms; there are those that are by nature more physically athletic than they are mental giants, there are those who have far stronger athletic herd dynamics than their physical ability can optimize, and then there are those rare elite athletes that are equipped with both highly fluent physicals and highly fluent psychologies. I need to point out here the very important and influential "other" participant in this equation, the sensory system.

The sensory soundness (efficiency) of the individual has a great deal to do with the physical expression of the psychological horse. I often use the comparison of a blocker in football making a hole for the running back to move through. A high functioning sensory system identifies stimulus in the environment, is able to pass the stimuli to other senses without disruptive physical reaction, (what I call a sensory-lead-change) and funnel the outside world to the inside world for interpretation. The sensory system searches for stimulus, the psycho-sensory interprets it; the herd dynamic manages the interpretation. The horse will either affect the environment, or be affected by it.

Horses that are more reliant on their physical ability than their core herd dynamic strengths as athletes and as individuals come with naturally occurring environmental dependencies. Mid level herd dynamic strength requires outsourcing; this is the

dependency/co-dependency relationship of the majority of horses in any natural herd. This is by Mother Nature's design and highly instinctive, for the links in this chain are the social fabric of a herd.

Mid-level herd horses though physically capable, struggle to assimilate when alone and are easily influenced when under stress by stronger horses and more easily affected by sudden environmental changes. The inability to properly assimilate independently creates dependency; isolating a horse means you're isolating both strength and weakness. Adaptability is an inherent element to overall herd dynamic strength and assimilation to situational chaos while in motion is an essential key to the optimization of ability during competition. It does not mean automatically that these horses cannot and will not become successful athletes, for they can and do. What it does mean is their management, development and placement require some additional attention. It also means to me, that if we have a like prospect before us, we need to make certain their sensory system is efficient to a level that it will not impede in any manner the physical strengths of the athlete, and even better, is high functioning in a way that will help offset any herd dynamic holes and thus help optimize raw ability.

In nature elite herd dynamics rule the day, day in and day out; measured hierarchy is how prey animals, exposed in the open with predators potentially at every turn, survive. They depend on the leaders to lead and to pass down as much of the "upper crust" behavioral genetics as they can. Emotional intelligence, adaptability and environmental awareness are all leadership qualities. Yet in sport, especially in racing, elite herd dynamics alone will not get you across the wire ahead of the more physically capable. It is the reason a strong herd dynamic may struggle to "compete" on a physical platform, yet may become quite useful in passing down their inherent strengths in a breeding program. We find horses in our scouting where we love their sensory systems and their herd dynamic, but we have to walk away from them because as physical athletes we just don't see the horse taking our client to the promise land. I find myself telling Pete, "maybe not a physical athlete, but probably a lot of potential in a breeding program".

Then there is the perfect storm, so to speak, where the elite psychological athlete meets the elite physical athlete. Elite potential in both of these areas is as rare as it is awe inspiring, and makes the search so exciting; it's why I dub it, #Panning4Gold.

These elite athletes are not often found on many of the same playing fields. Among the things that make the Kentucky Derby such a special competition, as well as so challenging to diagnose, is that generally the best of the best find themselves together for the first time; bumping and grinding and gritting it out in a chaotic and excitable environment. This motley of horses coming together, head to head at a mile and a quarter, makes for a wonderfully unique and herd dynamically demanding experience.

Herd dynamic strength and power operating a capable physical machine is a force to be reckoned with and an element that should never be underappreciated be it in handicapping or purchasing. I have always felt that the true "value" to be found in the athlete is housed within their internal grit, will and determination. The psychological influence of the herd dynamic from one horse to another is not often easily noted, for there can be, and frequently are, many subtle variations of influence at play in any given moment depending on environment and circumstance. Most often the result of herd dynamic presence is seen in its ability to manipulate or disrupt physical speed or pace, control space, sense and react to approaching pressure or zero in on the true forward target or peer. It's harder to see aspects are within the ability to manage stress, adapt in motion to rapidly changing environments, anticipate herd motion of lower ranking horses, and distribute emotional energy evenly as necessary and sustainably.

We break down the overall herd dynamic in to two collaborative but differently expressive areas, the Group Herd Dynamic and the Individual Herd Dynamic. The GHD is largely responsible for environmental interpretations, space awareness, sensory lead change ability, and emotional energy conservation; which lends itself to an efficient mental cruising gear quite well suited for in-traffic navigation. The IHD influences athletic power and expressions of grit, and is geared toward targets, combat and is what allows a horse to drop the hammer even on a "target" that is open space far out in front of them. (In the THT lexicon we denote this as DTF, Distance Target Focus). It is in this area of DTF you find the difference between horses running in space, and horses running through space.

A mixture of GHD and IHD to some degree is inherent in all horses, though horse athletes, especially thoroughbreds, will have a prevailing herd dynamic shift; some horses will be shifted more into the IHD area giving them what I refer to as a hi-rev psychological spin. Their sensory systems and sometimes even their basic character traits have a faster spin-cycle internally that veils their actual efficiency until in sustained physical motion. The GHD shifted horses have a more methodical, though no less competitive psychological spin. Their sensory system and character traits can be veiled in apparent quiet nonchalance that comes alive through the buildup of competition and the time they are in *competitive motion*.

Note: *IHD shifted horses can also find a mental cruising gear, though their natural rhythm cycles faster and is more directional than that of the broader based, methodically toned rhythm of the GHD horse. IHD shifted horses can at times run the risk of excessive emotional energy burn the same way the GHD based cruising rhythm can sometimes "fail to launch" into competitive IHD. When this is a question, the answer to which way they may spill under pressure is often found within the efficacy of the sensory system.*

Natural patterns of motion are reflected in these herd dynamic shifts. IHD shifted horses will have a pattern of motion generally

more aggressive and expressive than those GHD slanted, sliding through space with oft times subtle alacrity. In regards to distance aptitude and being competitive at increased distances, the inherent value is found within the individual horse's ability to properly filter stress and distribute emotional energy over time and within herd chaos. Regardless of the shift, IHD or GHD, it's what they bring to the table when they get there. Their inherent patterns of motion through the course of a race can look very different, but in either form, head to head, it is who brings the most sustainable grit that matters; for there are two types of fatigue, physical fatigue and emotional fatigue. When physical ability and athleticism are evenly matched, determination and mental fortitude becomes the difference maker.

"Herd Dynamics; if it influences the horses daily life, it influences their competitive life."

KMT

I'd like to express my appreciation to all of you that purchase our report. As you well know it takes a tremendous amount of time and energy to develop our Kentucky Derby Analysis. We work hard to provide you with a unique window into each horse (and into our singular way of evaluating them) that you can reference not only for the First Saturday in May, but also as these horses continue their journey. We work to provide you a perspective of where they were, where they are and where they're likely going, founded upon who they are as individual horse athletes.

I'd also like to thank Brisnet for their ongoing support of our work and it goes without saying, this report would never come to be without the dedication, talent and hard work of Pete Denk. Pete is not only THT Bloodstock partner, but the best friend I could ever ask for.

Pete and I continue to consider the future of THT Bloodstock and where we will always welcome new clients at any level of ownership or buying interest, we are also eying up the potential for THT Thoroughbred Partnerships. If you or someone you know would like to access the advantage of our services privately or you're interested in being kept in the loop regarding partnership opportunities, please email Pete at peterdenk@yahoo.com or via Twitter, Pete is @Petedenk.

For additional information about our work, research and everything else THT, please allow me to invite you to visit our website www.thtbloodstock.com. There you can find position papers on the Blog and the previous Kentucky Derby archives in Big Race Analysis section among other things.

*Clinics, Seminars and appearances are available and if you'd like to follow me on Twitter I'm @thomasherding, you can also connect with me on FB or join THT Bloodstock FB page. Thank you again for your time and your support, you make the effort it takes, worthwhile.

~Kerry M Thomas

Founder, THT Bloodstock

OMAHA BEACH
Dark bay colt by War Front—Charming, by Seeking the Gold

Considering the absolute Herd Dynamic beast Omaha Beach has become, it was interesting to watch him come up short in his first four races.

His first three runs came on the turf course, and in his fourth race he stumbled badly at the start, but still, it took him a while to learn how to finish opponents.

He debuted in a 1-mile turf race at Del Mar on September 2. He hopped at the start but showed a good forward recovery. Although he is competitive minded and shifted toward the Individual Herd Dynamic, he didn't panic over early position. He settled in 7th place, looking confident and powerful right away.

Asked to run late, he showed nice acceleration and body control while coming home in :23-1. We love how he finished in his debut. He had a big presence on the gallop-out. This was a useful, educational practice run.

In Omaha Beach's next start he came out of the gate more forwardly. He looked great while tracking the pace from third place. He looked like a winner turning for home, but he finished second by a nose to Flying Scotsman (who did come back and win a G3 on the turf by 4 lengths).

The one thing missing at this point was the killer instinct to close the deal. Omaha Beach was taking his time, and it cost him. His IHD transitions were drawn out and hadn't tightened up yet.

It was more of the same in start #3 going 1 1/16 miles on the Del Mar turf. He worked out a tracking trip again, sporting a nice GHD/IHD balance. He looked like a winner turning for home, but he didn't fight back quickly enough when Bob and Jackie re-rallied on the rail. Omaha Beach ran his final 5/16 in a very good :28-4, and he didn't lose to a bad horse (the winner came back and won a turf stake). But Omaha Beach still wasn't finishing the task, and he wasn't yet impacting the motion of his opponents.

As the calendar turned to 2019, trainer Richard Mandella decided to try Omaha Beach on the dirt in a 1-mile maiden race at Santa Anita. He stumbled badly at the start but recovered enough to be pressing the pace 4-wide through the first turn. He was expressing more IHD speed on the dirt than in his turf races.

He engaged in a stretch-long duel with Nolo Contesto, who got the much cleaner trip. Omaha Beach held a nice straight line through the lane, but he lost by a half length.

Mandella kept Omaha Beach on the dirt but shortened him up to 7 furlongs in start #5. Omaha Beach bobbled just slightly at the start but recovered nicely and settled into a strong IHD rating rhythm. Tracking fast fractions out 3-wide on the backside, we was just waiting to attack the leaders.

Omaha Beach took the lead on the turn and started widening his advantage. He absolutely was skipping over the sloppy racetrack.

Completely independent from the herd behind him, he held a beautiful line the length of the stretch. He ran really fast in this race, and he made it look easy. This 9-length win was Omaha Beach's Herd Dynamic awakening.

Omaha Beach set out on the Kentucky Derby trail when he shipped to Oaklawn Park for the Rebel Stakes (G2). Oaklawn's YouTube videos include pre-race footage, and in addition to his burgeoning Herd Dynamic, Omaha Beach looked like a physical beast in the post parade.

He did a slight stutter step at the start, but recovered very quickly and went into IHD competing mode. He made an early move into 2nd place on the backside and created a platform from which to re-launch.

He opened a 1-length lead on the turn, but last year's two-year-old champion Game Winner was revving up just behind. Omaha Beach's IHD transition was smooth and he was controlling the space between himself and Game Winner until inside the 1/8 pole when Game Winner -- a very gritty, game horse – closed the gap and made one more very determined run at him.

Omaha Beach also dug deep, and he still had gears in reserve. He won by a nose. These two titans bumped twice -- once before the wire and once after. They were very close on Herd Dynamic strength, and were affecting one another. Omaha did not give in; he wouldn't let Game Winner pass him. And Game Winner did not stop trying at the wire. That fight didn't end.

Omaha Beach's splits were really impressive (:23-4, :23-2, :24-3, :30-3). He sustains his speed well.

Omaha Beach announced his bid for the three-year-old crown in the Rebel, and in the Arkansas Derby he confirmed it.

In 5th place the first time under the wire, Mike Smith steered Omaha Beach outside early. He moved up while 3-wide around the first turn and took over the lead on the backside. These early-race tactical moves have become an important part of Omaha Beach's pattern of motion. Not many horses can execute that move without sapping their finishing energy. Rating on the lead, he was just plowing forward space, while creating a platform for the final push.

Improbable made a couple runs, but Omaha Beach always had a better answer. Improbable, who was wearing blinkers here, was unable to penetrate Omaha Beach's space. Omaha shook him off fairly casually in the end, and was still moving with strength and confidence at the wire.

Omaha Beach ran his final furlong of the Arkansas Derby in a very solid :12-2. His physical fractions and the emotional stamina he showed in the Oaklawn races give us confidence that 10 furlongs will be within his efficiency zone.

Omaha Beach looks like a very complete package. He has a solid, efficient GHD base, but at heart he is an IHD shifted, high-revving athletic psychology that has developed a pattern of motion that is sequential, smooth and methodical. Difficult to pass, he excels at defending herd leadership from the front. He is the acknowledged herd leader by many horses he has faced.

Battle tested and at the peak of his powers, Omaha Beach enters this Derby as our clear #1 rated Herd Dynamic horse.

TACITUS

Gray or roan colt by Tapit—Close Hatches, by First Defence

With just four races under his belt, Tacitus enters the Kentucky Derby light on experience but on a very impressive Herd Dynamic growth curve.

Tacitus ran twice at age two. He debuted in a 1 1/16-mile race at Belmont Park and finished a staying-on 4th against a good field. It was a promising, educational first race. Ever since then he has been climbing the Herd Dynamic ladder, meeting new challenges and growing in strength each time he runs.

Tacitus got his maiden win out of the way in his second start. Pinched back at the start, he was 6th of seven horses early. His Group Herd Dynamic efficiency looked very good. Tacitus is comfortable in a crowd. He runs with presence, but he also is not afraid to physically battle to hold his space.

Steered out to the clear on the turn, he launched a 4-wide move that showed off a big, smooth stride. His distance target focus looked good as he advanced from 5th place up to challenge the leaders.

His engagement and focus in IHD battle improved from the debut. He still was green, but we love to see him fight back against those space infractions from the other horses. It looked like he put runner-up Erlich away at the mid-stretch point when he forced him down toward the rail. Tacitus assumed the role of herd leader, but Erlich (and rider Irad Ortiz Jr) tried him one more time near the wire, drifting out toward his path. Sensing the challenge, Tacitus and Jose Ortiz drifted inside and gave their opponent a sound bump while never relinquishing the lead. Message received. Tacitus won by a neck. He was still learning body control in IHD battle, but there was an underlying strength to his performance.

Tacitus made his three-year-old debut in an ambitious spot – the Tampa Derby (G2). He broke from the 10-post in an 11-horse field just slightly head high, not in any hurry. There is definitely a sizable Group Herd Dynamic to Tacitus's personality. He doesn't panic over early position.

He was in 6th place through the early and middle portions of the Tampa Derby. He started making up ground on the far turn then split horses really nicely as they hit the lane. Tacitus came through that gap like he owned it.

Tacitus' transition from splitting horses to retargeting and rallying inside of the leaders was seamless. He just kept driving forward with no delays or hang-ups. When Tacitus kicks into IHD, his emotional gears are on an incremental, slow dial. He attacks with a big, grinding stride and relentless emotional drive.

He was still green – he drifted out as he got the lead in late stretch – but he finished this race with a lot of emotional energy. He rose to the occasion in his three-year-old debut on a demanding surface (Tampa) in his first graded stakes try. There were some strong emergent properties displayed there.

In the Wood Memorial Stakes (G1), Tacitus broke well from post #2 and with Jose Ortiz asking him to hold his position, Tacitus displayed a more competitive nature early. And it was a good thing he did, because a crush of horses tried to come over from the outside. Tacitus stuck his head into the hole and held his space twice in a chaotic scene heading into the first turn. It was very impressive that he held his position and retained body control. His gate break was better, and his reactions to herd chaos are becoming more forward.

Tacitus was stalking from 4th place, a good 8 lengths behind a fairly hot pace on the backstretch. Despite the distance between him and the frontrunners, Tacitus had them in his sights while tracking patiently.

Tacitus' approach on the leaders, which started brewing with him in open space as the field hit the top of the far turn, was beautiful. We love his countenance and athleticism as he took that turn and started revving up into IHD. He spun into the lane in the 5-path, just outside of Tax. Tacitus gained the advantage around the 1/8 pole. Tax, deferring to the new leader, was herded down to the inside as he fell back a length. The physical margin of victory was 1 ¼ lengths, but that was a much bigger herd dynamic win.

Tacitus's herd dynamic is still growing, and the way he finished the 9-furlong Wood Memorial, we are confident in his ability to get 10 furlongs.

Tacitus has a very nice mix of GHD efficiency and IHD power. He holds a strong path in a crowd, targets forward well, and he relishes a close-space fight. We have not seen him carry any stress. This Herd Dynamic profile is a very good fit for a race like the Kentucky Derby.

Tacitus is still a little green, and he is yet to lock horns with a fellow elite horse in IHD, but he has a powerful temperament and he is just starting to realize his Herd Dynamic strength.

The horses we ranked 2 through 7 were very difficult to split, but we think Tacitus' emergent properties could be very promising indicators.

WAR OF WILL
Bay colt by War Front—Visions of Clarity (Ire), by Sadler's Wells

Two of our top three Herd Dynamics in this year's Kentucky Derby field have a lot in common. Both Omaha Beach and War of Will are by the same great stallion, and both started their careers on turf, as many progeny of War Front are asked to do.

Both lost their first four races. And both developed into Herd Dynamic beasts on the dirt.

Once we know what a horse's preferred surface is, those races on other surfaces matter less in our evaluations. But there are still things that can be gleaned such as development patterns, personality and behavioral traits.

As we watched War of Will's turf races, we noted the physical talent of course, but we were most taken by his intensely competitive and gutsy personality. War of Will absolutely hates to get passed. Note the tail stress when he finished 3rd in his debut and again when he finished a close 4th in the Bourbon Stakes (G3).

War of Will is body language expressive, and he intensifies most on his transition into Individual Herd Dynamic combat. He digs deep in IHD, and if that doesn't work, he'll go back and dig deeper. When he was unable to pass a horse on the turf or was passed himself, it was almost like he was gritting his teeth.

We were happy for him when we watched his maiden win on the dirt. He finally did what he wanted to do since day one – dominate and bury a field. He looked so much more comfortable on dirt, winning by five lengths, geared down. His fractions of :24-4, :24-3, :24-3, :31-2 were excellent staying material.

War of Will stepped back up to graded stakes competition in the Lecomte Stakes (G3). He broke inward at the start, but righted himself. If there is an efficiency concern about War of Will's personality it could be that he risks over-intensifying in spots.

War of Will wants to be competitively positioned, and we always see him in the clear on the outside, but he has rating gears. Under a big hold from jockey Tyler Gaffalione, he was willing to wait in third place on the outside in the Lecomte. His IHD energy is always there, just under the surface, waiting to be unleashed. This kind of stalking trip could be ideal for him, as he can create a platform from which to launch from, while avoiding starting his IHD progressions too early.

War of Will drew off to win by four lengths. He knew there was no Herd Dynamic challenge, and he never needed his top emotional gears. This is a smart horse, maybe a bit of an independent thinker. His energy on the gallop-out was exuding pride and Herd Dynamic power.

War of Will had the 13-post in a field of 14 in the Risen Star Stakes (G2). He broke well. He is strong in early herd chaos. His early rhythm is competitive but relaxed. He is very sure of himself.

When #15 Gun It passed him on the backstretch and opened up on the lead, War of Will wanted to get after him in the worst way. But he listened to Gaffalione, who wanted to take a more gradual approach to hitting the front.

War of Will had the lead alongside Gun It about three furlongs from the wire, still in cruise control. When Gaffalione asked him to run at the quarter pole, War of Will opened up. He releases the horses behind him very cleanly. Being alone in open space does not expose any weakness in War of Will. He has no herd attachments and a sharp sensory system.

War of Will won by 2 ¼ lengths, and he probably could have gone a little faster. He was checking back with his ears inside the final sixteenth, and there were absolutely no challenges. His closest pursuer Country House was not threatening his space. War of Will galloped out by himself, looking full of energy.

War of Will's final prep for the Kentucky Derby was a disaster. He lost his hind end action and appeared to be injured in the opening strides of the Louisiana Derby (G2). When hurt, the natural instinct of a high-level horse in the wild will be not to expose themselves. Sure enough, War of Will did something we had never seen him do – go into GHD and try to blend in. He finished 9th, beaten 12 lengths, looking like just another horse.

Of course, War of Will is far from that. He is an elite Herd Dynamic, and we think he is made for the Derby distance of 1 ¼ miles.

One caveat – War of Will has to be 100% healthy to be able to do this. He should not be asked, or allowed, to run in this race if he is physically compromised. This ranking assumes he will be scratched if he is not at optimal physical health.

In terms of post position, War of Will drew the dreaded rail. That certainly makes things more difficult, as the inside horses must break well to get position or risk being shut off. Looking at the horses who drew just outside of War of Will (Tax, By My Standards, Gray Magician), we think he has the presence and Herd Dynamic power to win his path.

We expect Gaffalione will ask War of Will for speed early, and then if he secures position, adjust on the fly, forming a platform for his IHD progressions.

Although War of Will has never gone wire-to-wire, he has a number of traits that suggest he would be game to try it. War of Will releases cleanly into space, has no herd attachments, and once he takes the lead, he has shown both good forward efficiency and good rear feel in terms of responding to challenges. The potential downside to this pattern of motion would be that if challenged early by another horse, War of Will might tap into his IHD energy too soon.

If War of Will does not get early position, he will be in new territory, especially if covered up in traffic. Elite Herd Dynamics have a way of overcoming obstacles, but history tells us that most aggressive-minded, IHD-slanted colts like this will under-perform from that position in this race.

GAME WINNER

Bay colt by Candy Ride (Arg)-Indyann Giving, by A.P. Indy

In the wild, it is not unusual for a mare to be the queen matriarch of her herd for five years or more. It is hard for a colt to stay on top for more than a year or two.

A lead stallion must constantly defend his position against a bachelor herd of up-and-coming contenders whose powers are emerging at different stages of their lives. The Herd Dynamics of male horses are always in motion. That is how nature injects optimal strength into the herd.

The man-made world of horse racing is not the same as the natural world, but we think some of the natural forces of Herd Dynamics are still at work. Game Winner, who was a perfect 4-for-4 as two-year-old champion, is fighting to stay on top, against the flow of that natural cycle.

Game Winner was nearly a finished product from day one. He debuted at Del Mar last August wearing a shadow roll and blinkers. He broke almost perfectly from the outside post in a field of nine. He ran with a very relaxed rhythm while pressing the pace out five-wide.

When rider Joel Rosario asked him for run, Game Winner intensified and drew off by five lengths. It was a powerful, effortless win by a horse with a very solid Group Herd Dynamic base and a gritty Individual Herd Dynamic slant to his personality.

The blinkers came off in start #2 the Del Mar Futurity (G1) and they have stayed off ever since. Stalking the pace early, Game Winner was projecting forward beautifully. He already had a very fluid pattern of motion. He pounced on Roadster (who had a breathing problem in this race) and then drew his aim on pace-setting Rowayton, whose motion was disrupted by Game Winner's presence before he even reached him.

Game Winner continued to shine as the distance increased to two turns. He controlled the herd in the American Pharaoh Stakes (G1) from the start, putting another Herd Dynamic beatdown on Rowayton, then running downhill through the wire to win by 4 ½ lengths.

Game Winner finished his championship run with a win in the Breeders' Cup Juvenile (G1) at Churchill Downs. Cut off and bumped at the start, he was back in 8th place early, caught 4-wide around the first turn. Game Winner showed great forward focus and patience as he took his time, picking off one horse at a time. It is rare to see a horse with this much grit perform in such a relaxed manner in a high-pressure race.

Caught four-wide again on the second turn, he determinedly ran down Knicks Go in the lane, bumping him then running by to win by 2 ¼ lengths. His unwavering forward focus and follow-through to his pattern of motion was so impressive.

Game Winner never met a Herd Dynamic peer in his juvenile season. That changed in his three-year-old debut.

We watched the post parade footage before the Rebel Stakes (G2), and Game Winner looked so independent and regal. The outrider pony was deferring to him like he knew he was escorting the two-year-old champ.

As the gate opened, Game Winner did a stutter step and broke inward, bumping with Jersey Agenda. We like how he shrugs off contact. In sixth place early, this was a little more of a Group Herd Dynamic look from Game Winner. He was out in the 6-path on the backside. He looked relaxed, but focused.

Rosario went to hand-urging with about three furlongs to run, and Game Winner advanced while 4-wide on the turn. He got within about a length of Omaha Beach, but wasn't impacting his motion. Omaha Beach began to widen his advantage. Game Winner dug deep and mounted another charge, trying hard to punch through Omaha's armor, but he couldn't quite break through. Game Winner surged and closed the gap, but Omaha still had his head in front at the finish.

We called that race a draw between two monster Herd Dynamics. The reigning champ Game Winner ran great. Omaha Beach, the emerging challenger, showed growth in defending herd leadership from the front. Every time Game Winner has pointed his laser at an opponent like that in the past, he has pierced their bubble.
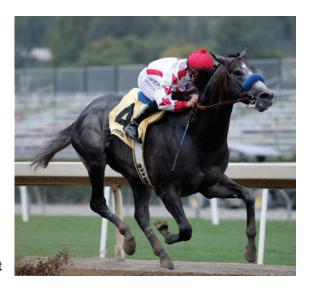
Game Winner ran his final prep at home in the Santa Anita Derby (G1). He ran his typical stalking pattern of motion but got caught 4-wide on both turns. Wide trips have been a pattern for him, and here he couldn't hold off the late charge of his stablemate Roadster, who won by a half length.

Game Winner did a lot of the dirty work in the Santa Anita Derby, particularly putting away the pacesetter Instagrand. Roadster, who had an easier trip, came running out in the middle of the track in the stretch. He got by Game Winner with a superior burst of speed, not necessarily superior Herd Dynamic strength. The champ was re-engaging before the wire and on the gallop-out. The savvy veteran was not finished there.

Game Winner has all the tools to compete well in this Kentucky Derby. We don't think additional distance, a roughly run race, or the Churchill atmosphere will affect him. This is a game horse with a balanced Herd Dynamic and a gritty, unwavering focus.

There is no faulting his two second-place efforts this year, but they are a reminder that the competition he towered over last year has caught up and is still getting better. Game Winner already has fulfilled a significant growth pattern, and he no longer has any margin for error.

ROADSTER

Gray or roan colt by Quality Road—Ghost Dancing, by Silver Ghost

If Roadster the horse was a car, a silver sports convertible would be the perfect match.

This steel gray colt is a highly efficiency, high-performance athlete.

Roadster looked like he had a special Herd Dynamic from day 1. The rail is a tough post for many young horses, but Roadster handled it like a pro in his debut at Del Mar last summer.

Competitively engaged from the start and holding a great line, he settled in 3rd place about 4 lengths off the leaders. About halfway through the 6-furlong sprint, a few of the other herd members started encroaching on Roadster's stalking perch. Mike Smith asked Roadster to pick it up, and Roadster responded with a smooth burst. He inhaled the leaders while putting two lengths between himself and the other closers. We love to see him controlling space like that.

Smith just shook the reins at Roadster one more time in the lane, and he increased his lead to more than 4 lengths at the wire. Roadster was very responsive, and his transitions were silky smooth.

Roadster's forward target draw looked strong when he was stalking the leaders. And when he made that second acceleration in the lane, his release point was perfect. His forward focus never wavered as he drew away from the other horses. He was targeting and accurately interpreting open space way out in front of his body. He executed that sequence with zero decay in his velocity (he ran the first half of the stretch in :12.44 and the second half in :12.43).

Roadster looked highly efficient both running at a target and running into open space. Many good horses can only do one or the other very well. This is a mark of elite versatility.

Roadster suffered his only career defeat in start #2 in the Del Mar Futurity (G1), when he finished third behind Game Winner. It was a gritty, laboring run, and it was publicly disclosed after the race that Roadster had a breathing problem. He underwent surgery afterward and did not race again as a two-year-old.

Trainer Bob Baffert ran Roadster in a 1-mile allowance race at Santa Anita for his 3-year-old debut. He again displayed great natural efficiency out of the gate. His ears looked relaxed as he negotiated the first turn and settled into stalking position. This is a very forward, fluent horse.

Roadster's ears were flopping as he moved up to 2nd place, patiently waiting for Mike Smith to step on the gas pedal on the far turn. Subtle hand communication and a shake of the reins was all the encouragement Roadster needed in the lane. His transition into IHD competing mode looked really clean again. He kicks into higher gear, and his mind extends way out in front of him. He left his competition, which included one-time Derby hopeful Nolo Contesto, in his dust. Physically accelerating late, Roadster ran the final quarter mile in :24-1. His adjustment to 2-turn racing looked flawless.

Roadster kept climbing the Herd Dynamic ladder in the Santa Anita Derby (G1), stretching out to 9 furlongs while facing a small but strong field that included stablemate and two-year-old champion Game Winner.

Breaking from the rail, Roadster got out of the gate cleanly. He can target open space to pull himself forward, and he engages very smoothly from a standing start. The race took an interesting turn though when Roadster and Smith did not seek early position.

In fifth place and covered up, we saw some minor tail stress and a slightly different head carriage from Roadster as he was taking some kickback while in an unfamiliar role – the Group Herd Dynamic closer. Roadster smoothed out into the clubhouse turn and on the backside, staying attached to the herd.

Still under a rating hold from Smith, Roadster lost ground to the leaders heading into the far turn. This is an entirely new pattern of motion for him – momentarily in last place, he was at least 6 lengths behind the leaders (the announcer called it 8 lengths). But jockey and horse looked surprisingly calm and comfortable. Smith must have a lot of confidence in Roadster's acceleration, and Roadster must have a little more GHD versatility than his early patterns of motion suggested.

Smith asked Roadster to start revving up on the far turn. By himself in open space and using his forward projection beautifully, Roadster moved outside and started gaining on the top four horses. Out in the 4-path through the lane, Roadster got within a length of Instagrand and Game Winner at the 1/8 pole. With Smith going to a left-handed whip, Roadster intensified further in IHD. He got his head in front just before the wire to win.

The turn of foot and distance target focus Roadster used to win the Santa Anita Derby could be very valuable tools in the Kentucky Derby.

It is notable that Roadster's pattern of motion is widening. Sometimes when a horse learns a new running style, that growth coincides with performance breakthroughs.

Roadster will get a new rider for the first time in the Kentucky Derby, as Mike Smith chose the cruising speed and pure Herd Dynamic power of Omaha Beach over this sleek, versatile, highly efficient runner. We think new rider Florent Geroux is a good fit here.

We don't think 10 furlongs is necessarily a strength for this Herd Dynamic profile, but due to his efficiency, we give Roadster an above average chance to stay the trip and maintain the performance level he showed from 6 to 9 furlongs.

In terms of pure IHD power and battle experience, Roadster might be a notch below a few of the top horses in this field, but his responsiveness, versatility and efficiency are second to none. He is an improving threat.

IMPROBABLE
Chestnut colt by City Zip—Rare Event, by A.P. Indy

We normally like it when trainer Bob Baffert takes blinkers off of a developing horse. In the case of Improbable making this move in the Kentucky Derby, we have mixed feelings.

We liked how Improbable ran in the Arkansas Derby (G1) with blinkers on. He was forward, ran with urgency, and he attacked forward space with gusto (until the closing yards when he accepted that he wasn't going past Omaha Beach, but that's another story).

The problem with the blinkers came before the race started. Improbable looked prancy and a little agitated in the post parade before the Arkansas Derby. Once in the starting gate, he became anxious. His sensory system, which normally appears fairly high-functioning, was overheating while being forced to stand in the gate wearing blinkers. He was shaking his head, looking sideways, trying to rear, and eventually had to be backed out of the gate.

Baffert knows how stressful the lead-up to the running of the Kentucky Derby can be, and he probably doesn't want to risk a meltdown at the starting gate in Louisville.

So the question is, what version of Improbable are we going to get? The one with the almost perfect, extremely promising two-year-old campaign or the one who has run well but come up short twice this year?

We inspected Improbable when he sold for $200,000 at the 2017 Keeneland September yearling sale and we gave him a good grade. We noted his distance target focus being above average, and he appeared to build energy into targets. It was a good, competitive profile for a sales yearling.

Improbable won his debut in late September at Santa Anita despite not looking dialed in. In that stretch battle, Stretford End was all out, in an intense IHD drive. Improbable to his outside looked a little aloof, just loping along, learning on the fly. He won by a neck without digging too deep. He was still learning IHD engagement.

Baffert took Improbable to Churchill Downs for his second start to run in the $100,000 Street Sense Stakes, an undercard race on Breeders' Cup Friday. We consider it a good sign when Baffert deems a young horse worthy of a plane ticket.

Breaking a little slowly from the 2 post in a field of nine, rider Drayden Van Dyke asked him for speed, and Improbable delivered, advancing up into a tight pocket behind the leaders. Van Dyke must have felt that approach was a little aggressive as he hit the brakes. Improbable looks efficient in tight quarters in Group Herd Dynamic mode, and he settled in very nicely, platforming just behind the leaders.

Improbable has good cruising gears and a closing move that gradually intensifies. He tipped out 3-wide, took the lead, then won off by 7 lengths, looking very forward but relaxed. He made two moves to win that race, and he made it look very easy. We love the forward progression he made from his debut.

In his final start at age two, Improbable won the Los Alamitos Cash Call Futurity (G1) by 5 easy lengths. There is not a lot of surface drag with this horse. He has a long, almost leaping, stride and a very athletic emotional energy. It almost looks like he is hovering over the ground.

Improbable made his three-year-old debut in the Rebel Stakes (G2). He broke well from the outside post in a field of seven, but was hung 4-wide around the first turn. We like him in this competitive, GHD stalking mode.

Caught 4-wide again on the far turn, he took over herd leadership in the lane, but for the first time we saw a loss of forward efficiency from him. Instead of releasing the horses behind him and extending out forward, Improbable was turning his head back to the right, where Long Range Toddy had tipped out and was rallying. Looking defensive, Improbable drifted laterally a couple paths and got run down just before the wire.

This was by no means a poor race. We love the way Improbable sustains his speed over distance (quarters in :24-2, :23-3, :24-1, and a final 5/16 in :30-3 are really nice). And he got a very wide trip in this race. But we still didn't like to see that hitch in the continuation of his pattern of motion.

Baffert decided to add blinkers and also changed riders to Jose Ortiz for the Arkansas Derby (G1), which was run on a sloppy track. After his near meltdown in the gate, Improbable actually broke quite well from the rail. It looked like the blinkers were channeling him forward nicely, and he might have wanted to be a little more forwardly placed, but he was eating spray on the inside, in 6th place while momentarily being held in by Omaha Beach.

Smith and Omaha Beach made an early move at the leaders, and Ortiz also put Improbable in the clear at the first opportunity. Improbable looked really good shadowing Omaha Beach on the back stretch. We like how he runs with blinkers on. He made a winning bid – perhaps as strong an IHD drive as we have seen from him -- as he tried hard to punch a hole in Omaha Beach's Herd Dynamic.

But Omaha was resolute as he defended his role of herd leader from the front. Improbable knew he was beat in the closing strides. This was a very good effort. He was just second-best to the division leader.

We wonder how much emotional energy Improbable burned before this race started, and we also wonder how he will come back from getting turned away by Omaha Beach. Will he run at him with that conviction again in the Derby?

We didn't think Improbable necessarily needed blinkers, but they did channel him forward nicely. We'll see here in the Derby what lessons and behaviors will carry over from his most recent race. Improbable is a promising athlete at a crossroads. We could see him going either way now.

BY MY STANDARDS

Bay colt by Goldencents—A Jealous Woman, by Muqtarib

Some horses realize their Herd Dynamic identity quickly. Others evolve from race to race and require multiple time-in-motion experiences to find their niche and hone a pattern of motion.

By My Standards did not look like a clear-cut Herd Dynamic powerhouse after his first few races, but there is a growth pattern here that has gotten very interesting, especially as it pertains to classic distance on the dirt.

By My Standards debuted in a 6 1/2 –furlong race in the slop at Churchill Downs on November 24. He had the outside post in field of 11, and he swerved outside at the start to avoid being sideswiped. That lateral movement contributed to him being in 9th place at the first call. He launched into IHD on the far turn and made a big, wide move.

He was a little green and reactive at times, but that is common for a horse on debut. Most importantly, we liked the follow-through to finish 2nd, four lengths behind Jersey Agenda, who ran very well on the lead.

Trainer Bret Calhoun wasted no more time sprinting with By My Standards. He was entered in a 1 1/16 –mile maiden race at Fair Grounds in Louisiana. Bumped on the first turn, he was in 7th place early, then back to 9th place on the backside. He went into a form of Group Herd Dynamic mode there and was matching rhythm with the horses around him. That is a common tactic horses use to cover distance in a herd. It's a form of cruise control/drafting that helps them conserve emotional energy. It looks like a natural default mode for By My Standards.

By My Standards remained in traffic for a good portion of this race. He started revving up on the turn, but he was still stuck inside behind horses at the quarter pole. He made room for himself, bumping #9 Twelfth Labour out of the way so he could get running room. By My Standards was a little green while under the whip, drifting in and out, but he rallied for second and galloped out well.

By My Standards took a little step backwards in his third race, but this was a transitionary effort. By My Standards, who had been operating primarily in GHD in his first two races, looked more forward and competitive. He bumped out of the gate but shrugged the contact off and was almost battling for the lead early, before he backed off and assumed a stalking position in 4th place on the backside. His Individual Herd Dynamic energy was emerging in this race.

Moving to the lead while 4-wide on the far turn, he looked like a winner turning for home, but he tired and hung inside the final furlong. He had better forward energy earlier in this race, but he didn't distribute his energy properly to finish the job.

By My Standards accomplished the mission and broke his maiden in start #4. He expanded on the pattern of motion from the previous race but he was more patient and he sustained his run much better, while overcoming the 12 post. Utilizing a fairly even balance of GHD and methodical IHD energy, he took over with a furlong to go and just kept grinding. He won by four lengths. His splits of :24-2, :24, :25-1, :31-3 were of the staying variety.

By My Standards stepped up in class to the Louisiana Derby (G2) and tried 1 1/8 miles next. He bobbled at the start and broke inward, away from War of Will. By My Standards looked a little reactive early. His body control improved when rider Gabriel Saez got him inside covered up in 4th place. That is where By My Standards can utilize his GHD. He was very patient in this race, sitting behind the leaders, waiting for his turn.

Held in by Spinoff in upper stretch, jockey Gabriel Saez redirected By My Standards back to the inside. He split Sueno and Lemniscate nicely and then came up the inside and gradually wore down Spinoff. It wasn't easy for him to rally up the inside and make that transition and take over, but his emerging competitive grit and doggedness shined through. Overcoming a challenge like that can lead to additional Herd Dynamic growth.

By My Standards uses a steady, methodical rhythm to wear down his opponents. Time-in-motion is his friend. Mentally and emotionally, 10 furlongs could be to his advantage.

By My Standards is not the most flashy or powerful Herd Dynamic in this field, but he has developed a pattern of motion that is maximizing his physical skillset. He is still improving, climbing the Herd Dynamic ladder.

MAXIMUM SECURITY
Bay colt by New Year's Day—Lil Indy, by Anasheed

In our ninth year of profiling the Kentucky Derby contenders, we don't recall one horse that reminds us of Maximum Security.

He debuted at maiden claiming $16,000, but he is undefeated in four career starts, with an average margin of victory of more than 12 lengths. He has uncommon physical energy distribution – he always shows early speed, but his velocity does not decay significantly with time-in-motion.

And despite being a Grade 1 winner, he has never matched strides with or looked an elite Herd Dynamic horse in the eye.

We have dissected his race footage thoroughly, but we still don't feel like we definitively know who Maximum Security is.

In his debut he broke well – this will be a hallmark of his pattern of motion. Maximum Security has been an excellent gate horse. He went to the lead, demonstrating a clear IHD shift, while setting fractions of :23-1 and :46-1.

He was well within himself physically. Mentally, he looked fairly intense. He could feel the horses around him, but we wonder how acutely he was interpreting them. A graded stakes caliber talent vs low-level maiden claimers is about as big a mismatch as exists in horse racing. In his debut, Maximum Security did not know how good he was.

He ran his final 5/16 in a very solid :30-1 and drew away to win by 9 ¾ lengths. We can tell he was amped up from the experience, as his ears and tail were a little stiff on the gallop-out.

Maximum Security caught a muddy/sealed track in his first start against winners. By virtue of debuting in a maiden claiming race, Maximum Security was eligible to run in starter allowance races. From the Herd Dynamic standpoint, these races are generally much easier than the non-winners allowance races that most maiden special weight winners advance to.

Breaking from the #2 post, he bumped with the rail horse at the start. Maximum Security shook off the bump and held his forward focus. He sat 3rd early, in an IHD rating mode. The whole time he didn't have the lead, he was targeting the leader.

Steered off the inside, he rushed by the leaders and won off by 6 ½ lengths, geared down. The path he held through the lane was very strong, and his opponents were drifting all over the place in his wake. Maximum Security is a very focused, intense and efficient horse.

He got to run at the same starter allowance condition again in his third start, though he added more distance to 7 furlongs. He came out of the #1 post position like a rocket.

His ear articulation in this race tells us he is becoming more comfortable, more confident. He looks more relaxed here even with horses encroaching on his rear egg from both sides. He gradually pulled away from this field, opening up an 8-length lead without being asked. He won by 18 lengths in an intense drive! His internal splits were special (:22-4, :22-4, :24, :12).

Maximum Security stepped up to the big leagues in his most recent race the 1 1/8-mile Florida Derby (G1). Starting from the #5 post, he broke like a rocket again and grabbed the lead going into the first turn as he dropped to the inside.

After running a first quarter in :24-2, he settled in and started showing ear articulation. He was feeling back with his ears to the nearest pursuer #8 Bodexpress (a maiden in a G1). Maximum Security might be a little bit of an agitator, as he was controlling his space, toying with Bodexpress a little bit.

Bodexpress was the first to come under a ride, and he was losing ground to Maximum Security's cruise control gear. Bodexpress was trying so hard to pierce his armor, but he couldn't do it.

Maximum Security pinned his ears and took off at the quarter pole. That was a very fluent IHD transition. His sensory system was clearing forward space well as he drew away and won by 3 ½ lengths.

After setting a slow pace, Maximum Security ran his final three furlongs in just under 36 seconds, a strong come-home time for a front-running horse at this distance. He controlled that race shape and completely negated the late runs of the GHD closers.

Looking at how strongly he finished the Florida Derby and how well he has been distributing his speed, we think Maximum Security should be able to get 10 furlongs. The question is whether he can get it so easily in the Kentucky Derby. How much he will have left for the stretch run in the Derby is very dependent on what happens along the way.

Maximum Security has not faced many Herd Dynamic challenges for a horse with his talent. He debuted at a ridiculously low class level, and continued to face very modest competition until the Florida Derby.

And in that race he got a dream trip for his pattern of motion. He looked two horses in the eye in the Florida Derby, the horses on each side of him in the starting gate – Hard Belle and Bodexpress. Hard Belle is 1-for-14 in his career (including three drubbings vs. Maximum Security). Bodexpress is a maiden, albeit a fast one, with an average Herd Dynamic.

None of the other horses got close enough to Maximum Security to impact him. Code of Honor and Bourbon War ran GHD closing patterns of motion, and they never caught up. The talented Hidden Scroll was undergoing a failed experiment at rating.

Sometimes we feel like we know exactly who a horse is. That is not the case here. We can't completely rule out Maximum Security's chances, but we suspect he is going to experience environmental and Herd Dynamic pressure like he has never felt before.

CODE OF HONOR
Chestnut colt by Noble Mission (GB)—Reunited, by Dixie Union

Code of Honor is a talented horse with a good Herd Dynamic. But as we reviewed his career up to this point and looked at his pedigree, we wondered if we weren't looking at a very adaptable turf horse that is doing his best on the dirt.

Code of Honor debuted at Saratoga in a 6-furlong dirt sprint. He broke efficiently from the 2-post and went to the lead. He didn't have the short, frantic stride of an early two-year-old sprinter. His body control looked good, and when #3 Most Mischief tried to press him for the lead early, even drifting toward him, Code of Honor looked him in the eye. Most Mischief drifted out two paths. We love to see that Code of Honor had enough environmental recognition and Herd Dynamic strength to impact the motion of another horse in his debut.

Code of Honor controlled the race from the start, and when he was asked to kick in the lane by rider John Velazquez, he extended fluently and gracefully. His splits of :23, :24, and :24-2 reflected excellent emotional energy distribution.

Code of Honor's second start came in the Champagne Stakes (G1), where he almost face-planted just after the start. New rider Eric Cancel allowed Code Of Honor to get his feet under him then guided him over to the rail. In contrast to his debut, Code of Honor found himself in 10th place, 10 lengths off the lead at the first call.

He caught up to the field at the half-mile pole while showing good forward projection, but he had to wait. We like that he wasn't showing any anxiety about his herd position. Tipped outside, he came with a 5-wide rally to finish 2nd. He didn't cross the wire first, but we loved the continuation he showed. We thought he was the best horse in the race. That trip gave Code of Honor a lot of things to manage, and he showed off a really nice mixture of Group Herd Dynamic awareness and Individual Herd Dynamic fight.

Code of Honor made his three-year-old debut on January 5 in the Mucho Macho Man Stakes at Gulfstream Park. Bumped at the start, he shrugged off the physical contact and was working out a GHD-based stalking trip. Code of Honor looked good while moving just behind the leaders in close quarters, but he came up empty in the lane. His energy was up and down, and his stride looked a little off late. He stopped competing around the 1/8 pole.

This field was not that strong, so we were curious what happened. Did he not like the track? Was he not fit enough off the layoff? Did he hurt himself? We combed the head-on replay for clues, and couldn't come up with anything definitive. On video, Code of Honor appears to have good size and scope, but he does look a bit thin and base narrow (his front legs are much closer together at his feet than they are at his chest). With that conformation, there is always a chance his feet could hit each other and sting him.

Whatever went wrong in that race, Code of Honor rebounded in the Fountain of Youth Stakes (G2), his first around two turns. He broke well from the rail and again showed he can shrug off physical contact as he bumped with #2 Epic Dreamer twice.

Code of Honor executed a GHD, mid-pack closing pattern of motion here vs. a very hot physical pace. He and Velazquez started to rev up a little more than three furlongs from the wire, and we really liked the sequence they executed on the far turn. They went between a tiring Gladiator King and a rallying Vekoma, then did an inside-out maneuver to beat Vekoma to the punch and get around a tiring Hidden Scroll.

It was an aggressively timed move. Code of Honor won by ¾ of a length. He did a lot of good things during that race, but he was losing efficiency, showing a little tail stress at the wire. He kept it together just long enough to avoid being caught by Bourbon War.

Code of Honor finished third, beaten 6 ¾ lengths, in his final prep for the Kentucky Derby (G1) in the Florida Derby (G1). He executed his mid-pack stalking/closing GHD pattern of motion, but he was unable to take advantage of a slow pace. Maximum Security controlled the herd from the front and then sprinted away, running his final three furlongs in just under 36 seconds. That rendered Code of Honor's respectable final 3 furlongs in :36-3 less effective.

Code of Honor has a good competitive psychology. His Herd Dynamic is well-rounded, and his sensory system appears to be reading the environment quickly and accurately. We expect a good, but not quite winning, effort from him in Louisville.

If Code of Honor's Triple Crown results don't keep him absolutely tied to the dirt, we would refresh this colt and give him a trial run on the turf later this summer.

WIN WIN WIN

Dark bay colt by Hat Trick (Jpn)—Miss Smarty Pants, by Smarty Jones

Despite his failure as a commercial stallion in America, we have always been big fans of Hat Trick (Jpn), the sire of Win Win Win.

A son of Kentucky Derby winner Sunday Silence, Hat Trick was a Group 1 winning turf miler in Japan and Hong Kong. He possessed elite skills in both the Group and Individual Herd Dynamics and many characteristics of a high-level stallion. Although he hasn't been passing his behavioral genetics down consistently, every once in a while he comes up with a special horse. Win Win Win, who has that almost black coloration of the Sunday Silence line, is the latest.

Like many Hat Trick progeny have done, Win Win Win was supposed to make his racetrack debut in a turf race. But after the race was moved to the dirt and Win Win Win posted a sharp victory, he has remained on the dirt ever since.

All three of Win Win Win's juvenile races were contested at Laurel Park in Maryland. In his first two races – both run at 5 ½ furlongs -- he used an IHD pace-pressing pattern of motion. Hat Trick had a lightning fast sensory system, and Win Win Win has inherited a lot of that efficiency, as there were no green moments in his early races. He looked like a natural athlete from the start.

He showed good grit and follow-through in the debut race. He attacked the lead horse, took over, and then defended herd leadership vs. an outside threat in resolute style. He showed off a well-rounded Herd Dynamic, and his sensory system had no problem staying ahead of the physical action.

He looked even better in start #2 in an optional claiming/allowance race. Win Win Win's body control looked great at the start. He held a perfectly straight path while showing an athletic, forward projection. His environmental awareness looked very good, and his tail was relaxed. Win Win Win is very comfortable in his role as a racehorse.

He pressed the pace for a half mile then just took off. Driving through the lane in open space, he showed no herd attachments. He won by 6 ½ lengths and was relaxed and confident on the gallop-out.

Win Win Win suffered his first career loss in the 7-furlong Heft Stakes, where he ran into Alwaysmining, a very good horse that is being pointed to the Preakness Stakes (G1).

Win Win Win broke slowly, and rider Julian Pimentel decided to rate him. This was the birth of a new GHD-based pattern of motion for Win Win Win. In last place, about 10 lengths back at the first call, we can see Win Win Win has a big distance target focus.

He made a nice advance up the inside and got through, then lost the IHD battle with Alwaysmining. That first loss was a wakeup call for Win Win Win.

Win Win Win made his three-year-old debut in the 7-furlong Pasco Stakes at Tampa Bay Downs. He started slowly and was last of five early. The GHD pattern of motion he tried in his last race as a two-year-old stuck with him.

Pimentel, who will be on board in Kentucky, asked him to catch up on the backstretch. Win Win Win responded by closing five lengths to get up to 4th place, just behind the leaders. Then, angled out 4 or 5-wide on the turn, he produced a powerful second run to overwhelm his opponents and win by 7 lengths. He ran his final three furlongs in a very solid :36-flat after making a middle move into a sub :45 half mile.

The ability to make an early move into that pace, platform, then power away – and do it all so fluidly -- is impressive. Win Win Win has a high-functioning sensory system. His distance target focus continues to look elite, his transitions were smooth, and he releases well into open space. This is a very complete package.

Win Win Win joined the Kentucky Derby trail in the Tampa Bay Derby (G2). Crowded and checked a couple times early while in Group Herd Dynamic mode, Win Win Win was outside of Tacitus on the backstretch in 7th place.

He made a wide move on the turn, but his finishing energy appeared a little bit dulled by the added time-in-motion. He looked like he was getting tired around the mid-stretch mark, but mentally he kept gutting it out to finish third, 2 ½ lengths behind Tacitus. His mental fortitude and target focus were pulling his body forward in the closing strides. This race made us wonder if Win Win Win is better going shorter, though looking at his physical splits (:24-3, :23-1. :23-1, :31-2) and taking into account ground loss, he did some good running there.

Win Win Win partly allayed our fears about his distance profile in his final Derby prep when he finished a troubled 2nd in the 1 1/8-mile Blue Grass Stakes (G1) at Keeneland.

In 13th-place early, Win Win Win continued with this GHD closing pattern of motion. On the far turn he was cycling up into IHD, on the move. Rider Irad Ortiz Jr. had him lined up to split horses, but then slammed on the brakes when the hole tightened up. That cost Win Win Win a couple lengths and valuable momentum.

Ortiz went to the whip to try to get him restarted, and Win Win Win re-engaged. Most GHD horses could not have restarted their rally so quickly. Win Win Win started passing horses again while floating wide in the lane. Running by mostly tired horses, he nailed Signalman on the wire to finish 2nd, without threatening the winner Vekoma.

Win Win Win's mental extension still looked good at the wire in the Blue Grass, and his final furlong in a very respectable :12-3 (much the best in that field) tells us that he improved his energy distribution in his second two-turn race, even after being stopped. This 14-horse field also gave him valuable experience dealing with herd traffic.

We initially suspected Win Win Win's physical ability and mental/emotional traits would optimize as a sprinter/miler, but he has proved to be an adaptable horse. He is competitive minded, efficient, and he has been consistent in terms of the emotional effort he puts into every race.

The Derby is going to be a big ask, but Win Win Win keeps making adjustments and improvements. His elite sensory system will help him at Churchill. We give him an outside chance at landing a share of the purse.

VEKOMA

Chestnut colt by Candy Ride (Arg)—Mona De Momma, by Speightstown

We inspected Vekoma at the 2017 Keeneland September yearling sale and noted the following: "Good tenacious eye. Competitive energy. Turns in vs. space infractions with power. Signs of a big Herd Dynamic." His intangibles at the yearling sale were very promising in terms of his competitive nature and courage.

As it turns out, Vekoma's personality at the auction has a lot in common with his personality as a racehorse. Vekoma is a gritty, tenacious competitor.

Vekoma sold for $135,000 at the Keeneland sale. That is obviously a lot of money, but by Thoroughbred auction standards, it was actually a slightly discounted price for a horse by a hot commercial sire (Candy Ride [ARG]) out of a young Grade 1 winning mare (Mona de Momma).

One of the reasons Vekoma did not bring top dollar was his physical conformation. The less-than-perfect way he is made has manifested in very unusual biomechanics. Vekoma swings his left front leg way out wide in a swimming motion.

Our general attitude on this subject is that (particularly in dirt racing), biomechanics matter more the longer the race. But Vekoma, of course, already has proved his doubters wrong, as he is a Grade 1 winner going 1 1/8 miles on the dirt.

Vekoma's competitive nature and Herd Dynamic strength were visible in his debut race in September at Belmont Park. Vekoma was very intense as the gate popped, jumping slightly, but recovering quickly. He breaks from the gate ready to roll in IHD.

Rider Manny Franco checked him early when they were 3-wide pressing into the leaders. That was a great decision by Franco to curb Vekoma's desire to engage in battle immediately. Franco made him wait until the lane, and when he gave him the signal, Vekoma exploded. He won a fast, highly rated maiden race by 1 ¾ lengths and galloped out with great energy. This colt loves to compete.

They stretched Vekoma out next in the Nashua Stakes (G3) to a 1-turn mile. He got cut off by Call Paul at the start and taken back. Vekoma is definitely going to want to control his space and own his path, and his body language tells us he was a little pissed off! But he grudgingly listened to Franco to back off early and stalk the pace. Vekoma is very emotionally engaged in his races, but he does listen (usually).

Vekoma was really looking forward to pouncing on the leaders. He got by the leader Call Paul in early stretch, but then he got stuck on his left lead, with his head cocked to the outside. It looked like Vekoma knew there was a challenge coming from the outside and he was locked on to the oncoming horse (Network Effect) instead of transitioning, changing leads and running on.

So this is a case where a horse can get too intense and loses forward efficiency. Vekoma did eventually switch leads, and he had plenty of energy left to hold off Network Effect, who wanted nothing to do with Vekoma in IHD! Vekoma won by 1 ¾ lengths and still looked powerful on the gallop-out.

Vekoma returned at age three in the Fountain of Youth Stakes (G2). He broke sharply, but he listened to Franco when he grabbed ahold of him. As much as Vekoma wants to look another horse in the eye and engage in direct combat, he does listen when he is asked to rate early in herd motion. Franco and trainer George Weaver did some good work with Vekoma to re-enforce this pattern of motion.

Sitting in 5th place early, he moved up to 4th on the backside, about 7 lengths back of a sizzling early pace. At about the three-furlong pole Franco asked him to go, and he was advancing three wide on the turn at the same time Code of Honor was advancing up the rail. As both horses passed Global Campaign, Franco tried to cut inside and get the jump on Code of Honor. Vekoma tried to do it, but he couldn't quite influence him enough, and Code of Honor's stride looked a little longer and a little more efficient than Vekoma's.

Code of Honor grabbed that path and went on. Vekoma had an exaggerated reaction to losing that space battle, then he stuck on his left lead as Franco tried to get him going again. Vekoma was psychologically stuck for a few seconds. The flow of herd motion --Bourbon War rolling by on his outside – might have helped as much as anything Franco did. Vekoma re-found his action and gutted it out to pass Hidden Scroll for 3rd place. It was a good, but not superefficient, effort considering it was his first race of the year and his first around two turns.

Vekoma's final prep came in the 1 1/8-mile Blue Grass Stakes (G1), where Franco was replaced by Javier Castellano. He broke well from the 2-post in that field of 14. Castellano asked him to get out, then rated him.

Sitting second off pacesetting Somelikeithotbrown, Vekoma found his IHD rating gear. We think this was a great trip for him. He has limited stimulus when he has just one horse in front of him, but he still gets engagement, which is his pacifier. He was chewing his rival up. Vekoma put his head in front about three furlongs from the wire.

Vekoma held an open lead as the field turned for home and drifted over to the rail. With no more forward targets, he lost his forward efficiency. He was turning his head back, looking for a challenge. He drifted out three or four paths, then back in. He finally switched leads and won by 3 ½ lengths.

Vekoma ran his final three furlongs in a tepid :39-2. With the exception of troubled 2nd-place finisher Win Win Win, it looked like there were a lot of tired horses behind him.

Vekoma loves competition. He seeks it out, and he will run to exhaustion. We love his tenacious nature, but we have some concerns about the efficiency of his transitions, especially in a race as chaotic at the Kentucky Derby. We think he'll put up a heck of a fight, but the distance and environment in Louisville likely is going to be a difficult test for his efficiency.

TAX

Dark bay gelding by Arch—Toll, by Giant's Causeway

In a race like the Kentucky Derby, where about half the field sometimes doesn't stay the trip, being able to carry your competitive energy through the wire is an edge.

Tax, the only gelding in this year's field, appears to have the Herd Dynamic of a classic-distance staying horse. In some ways his profile reminds us of Instilled Regard, who finished 4th in the Derby last year, crashing the superfecta at 85-to-1 odds.

Like Instilled Regard, we don't expect Tax to win this race for one glaring reason. By Grade 1 standards, he has looked a little weak in Individual Herd Dynamic battle.

Tax, who was bred and originally owned by the partnership of Claiborne Farm and Adele Dilschneider, was gelded before his racing career began. Gelding a horse can temper its competitive energy. In the case of Tax, we never inspected him before he underwent the alteration, so we don't know if it changed him.

Tax debuted in a modest $30,000 maiden claiming race at Churchill Downs last September. Although he pressed the pace from the inside, we sensed more of a Group Herd Dynamic energy from him. He is a nice mover, but he didn't look 100% comfortable competing for the lead early in a 6 ½-furlong sprint. He was in that spot because his physical pace put him there (the half was run in a relatively slow :47-3), not because he wanted to lead the herd.

There were three horses across the track turning for home, with Tax on the inside. He probably felt a little pressure there, as he swerved toward the rail in early stretch. Tax started matching rhythm with the other horses and then he started enjoying it more. He wasn't trying to win the race; he was a little green and just running in company, using the other horses for space awareness and feeling his way through.

He finished second, beaten a half length. His splits of :23-2, :24-2, and a final 5/16 in :30-3 reflected responsible energy distribution and a distance oriented psychological rhythm.

They stretched Tax out to 1 1/16 miles and raised him in class one level to maiden claiming $50,000 in his second race. He broke efficiently from the rail, but surrendered the lead on the first turn.

Sitting in second place, he quickly found comfort in GHD mode. He dropped back two lengths, not putting pressure on the leader.

Rider Brian Hernandez Jr. got Tax moving on the far turn. By going to the whip with alternating hands, he roused his mount to progress through a slow-burning, grinding series of IHD gears. Tax won by two lengths. Seven people put in claims for him, but it was trainer Danny Gargan's and his clients' lucky day.

This was a great claim, as Tax took a nice step forward in his first start in the new barn, finishing third in the Remsen Stakes (G2). He broke from the gate well, looking more forward. Tax sat second in GHD mode off of pacesetter Maximus Mischief.

Turning for home it looked like a two-horse race with Tax on the outside in good attack position. But under a whip from rider Manny Franco, Tax floated laterally, weaving through the lane. He lost second place just before the wire.

Tax got repelled in IHD battle by the winner, but this was a significantly improved performance in his first race for the new barn. His splits (:50-4, :24, :24-1, :12-4) continue to look favorable for distance.

Tax made his three-year-old debut in the Withers Stakes (G3). Breaking from the rail, he stumbled at the start, almost going to his knees. Tax recovered quickly; he has good environmental awareness. He had the lead through the first turn, but he and rider Junior Alvarado surrendered it on the backstretch, sliding back to third place along the inside.

Being covered up appears to be a comfort zone for Tax. He loves running within the herd. The longer Tax stays in GHD mode, the better, as he can cover distance quite efficiently and by default, competitively in this way.

Still on the inside and behind the leader turning for home, Tax was showing some forward focus. The pacesetter Not That Brady initially blocked Tax' advance, but then he drifted out under a left-handed whip, and Tax did a good job advancing up the inside gap.

Tax took the lead at the 1/8 pole and looked like he might open up more, but his urgency seemed to plateau. He didn't look tired – his action looked fine – but that was not the look of a horse who wanted to leave those other two horses behind. Not That Brady and to his outside Our Braintrust found renewed life; they were re-rallying on Tax. He held on to win by a head.

Tax looked like he was clearly the best horse in that race, but he does not appear to crave independence from the herd. He can run to a target very well, but once it's time to put horses away and run into open space, he can get a little shaky.

Tax finished second in his final Kentucky Derby prep the Wood Memorial Stakes (G1). He broke ok from the rail – overall he is a pretty good gate horse. And he avoided all the early race trouble in the Wood because he was in front of it. We can see Tax has very good rear feel and a long reach, as he knew there was trouble behind him.

Tax went into GHD mode, content to rate in third place behind a fast pace. He had the tiring leaders in his sights on the far turn, and he hit the lead in the stretch. However, Tacitus was just behind him, and that put Tax in a tough spot. We thought Tax made an honest effort to stave off Tacitus, but after a furlong or so of competing, Tax packed it in and settled into adjunct mode. He was just a length back, but no longer a Herd Dynamic threat.

Tax appears well equipped to handle the stretch to 10 furlongs from the standpoint of time in motion and physical stamina.

The longer he can stay in a competitive GHD gear, the better. The challenge for Tax is going to come when he has to compete in IHD mode or, if he gets the opportunity, leave the herd behind and run into open space. They certainly don't want to pull the trigger too early, as he has a finite amount of IHD fight in him.

We have seen that Tax is willing to make an effort to compete, but when push comes to shove, he is likely to default back to a high-revving GHD cruise control and keep running with the herd. Unless that changes, a minor share is his ceiling.

SPINOFF
Chestnut colt by Hard Spun—Zaftig, by Gone West

Spinoff comes into the Kentucky Derby like a promising piece of clay that is still being molded. He's not a work of fine art yet, but we see some very nice potential in him.

Spinoff debuted relatively early by Derby horse standards, winning a 5-furlong sprint that was run in a pouring rain at Gulfstream Park last June.

Breaking from the #4 post in a field of nine, Spinoff broke with a competitive but controlled rhythm and good forward efficiency. All the horses outside of him were negatively affected at the start when #5 Garter and Tie ducked out. Spinoff showed good body control and independence from the herd.

Hustled early, he sat 2nd through the turn, then took over in the lane. He definitely looked slanted toward the Individual Herd Dynamic, and he was just a hair head high, but we like the cruising gears and ear articulation. He exhibited no signs of stress on the gallop-out after that rapid fire event.

Spinoff finished 3rd in a four-horse Saratoga Special (G2) in his second start, but we thought this was a sneaky good effort in terms of future potential.

He looked very efficient at the break, forward-minded and owning his space. Between horses early pressing for the lead, he got squeezed back entering the turn. Forced to sit behind horses in a closely bunched field, he pushed #1 Meade out of his way turning for home and made a run at the top two through the lane.

He finished 3rd, beaten 2 ¾ lengths, but we like how he stayed on mentally and physically. He was still running at the wire, holding a strong path. On the gallop-out he looked like he would have liked to continue that fight.

Spinoff did not race again until February 22 of this year, when he tried two turns for the first time in an optional claiming allowance race at Tampa Bay Downs. He had another good break; he definitely seems to command space out of the gate. He has good presence and awareness as soon as herd motion starts.

Between horses early, then sitting second off of #5 Mercusio, Spinoff was putting a lot of Herd Dynamic pressure on the leader, first running up inside of him, then backing off and approaching from the outside. Spinoff executed those maneuvers into a hot physical pace while holding a controlled rhythm.

He had the lead turning for home, but he still had a job to finish, as stakes placed Cave Run was coming at him from the outside. Spinoff needed a few cracks of the whip from rider John Velazquez to release behind, but once he did, his ears shot forward and his stride lengthened. He was running just a hair head high as he drew off to win by more than 10 lengths. Spinoff was a little green, but he passed the two-turn test with flying colors.

Spinoff's final prep took place in the 1 1/8-mile Louisiana Derby (G2). Starting from the 10-post in a field of 11, he drifted out a half path at the start to avoid bumping with #9 Bankit. He anticipates the movements of other horses well. But that move caused him to bump with #11 Hog Creek Hustle a couple times.

Spinoff was dangerously close to losing his position at the start, but he muscled his way through and got up to 3rd place heading into the first turn, which he had to take 3 or 4 paths wide.

He held that position on the backside in an IHD rating gear and again was caught 3 or 4 paths wide on the far turn. Spinoff overtook Sueno for the lead in early stretch, but he was unable to hold off By My Standards, who got a more ground saving trip and advanced up the rail. Those were two colts with emerging Herd Dynamics figuring it out. Spinoff was second best, but as the top two galloped out together, Spinoff did not look beaten down emotionally.

Spinoff is still emerging from the Herd Dynamic perspective. There are a lot of good ingredients here, but he is still a little green. We would love to see him lower his head in the lane and run with all his power.

In order to compete for a top spot in this race, Spinoff will have to improve again, and that's a tough, but not impossible, ask in the Kentucky Derby. Spinoff has a promising profile, but he is not quite as battle hardened as some of his opponents.

HAIKAL
Bay colt by Daaher—Sablah, by Distorted Humor

Haikal is a Group Herd Dynamic-based colt who likes to let time-in-motion play out for a while before he asserts himself.

That tendency is reflected in his pattern of motion, which has been extremely consistent during his 5-race career. It is not the most effective pattern of motion for winning races, especially on the dirt in the U.S., but Haikal is well-suited for it, and he has some traits we like.

Haikal showed us who he was in his debut at Aqueduct back in November. Checked at the break and last of eight early, he was biding his time in GHD. About 10 lengths back at one point on the far turn, he didn't even think about competing in Individual Herd Dynamic mode during the first half of the race.

Rider Jose Ortiz started moving his hands a little bit late on the far turn, and a spark ignited in Haikal. Under a hand ride in the 2-path, he quickly and cleanly left two horses behind him. Then under a left-handed whip in the lane, he intensified further while moving to the outside to get a clear run at the leaders.

Passing four more horses, we see that Haikal has a good, long-range distance target focus. His sensory system is interpreting far out in front of his body, and he doesn't stick to horses as he passes them. He finished 2nd by a neck while learning IHD engagement on the fly.

He executed that same pattern of motion in his second race, but with more power and conviction. Checked early again, he found himself in 5th place, 7 or 8 lengths back at the head of the lane. We like the intensification he shows as he is running through open space, closing on the leaders. Haikal was the only horse significantly changing his herd position in the lane. That signifies a major physical talent disparity and/or a Herd Dynamic that is confident enough to move independently of the horses around it.

Haikal surged up the inside late to win by a neck. He looked very sure of himself as he crossed the wire and galloped out. A look at his internal fractions show that he ran nearly the same velocity for the entire race, and he actually accelerated slightly in the final furlong (:23-4, :24-1, :12-1, <:12). His IHD drive is definitely there, propelling his body forward late.

Haikal made his three-year-old debut in the 7-furlong Winkfield Stakes. He executed his pattern of motion, even choosing the rail path for his rally again, but it didn't come as easy this time.

With the leader Joevia crowding his path of advancement, Haikal got to the door, but he hovered for a while as he figured out the space awareness and whether it was safe to go up the rail. He gradually got his head into that hole and then took over to win by a neck rather casually. We loved his unwavering forward focus even when he had to slow down and figure that situation out.

When a horse overcomes adversity and successfully executes its pattern of motion, that can lead to Herd Dynamic growth. And that is what we saw from Haikal when he stepped up and won the Gotham Stakes (G3) in his next start.

He was far behind a very fast pace in the Gotham, and he didn't really start going through his IHD transitions until the lane. But he came up the inside then maneuvered outside to utilize his great long-range target focus. He got by the tiring leaders late to win by a length. Emotionally and mentally, he did not look tired at the wire. He passed the two-turn test, though he did get an ideal setup.

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Haikal stepped up to Grade 1 competition in his most recent start in the Wood Memorial Stakes. He ran hard and did a lot of good things, but this time his pattern of motion was only good enough for him to finish third, beaten four lengths. He won the second herd, but never got into the space of the top two finishers Tacitius and Tax.

Haikal is unlikely to take down any of the giants in this field, but he has a nice core of Herd Dynamic traits. He has been allowed to stay true to his natural pattern of motion, and he has honed it to the best of his ability.

We are neutral on the idea of Haikal adding more distance. Horses with this pattern of motion sometimes run best in sprints and middle distance races, but we have seen plenty of them finish in the money in the Kentucky Derby. More so than distance, how a race is run often dictates how effective this pattern of motion can be.

Haikal likes to run at horses who have been diminished by time-in-motion and competition, and there should be plenty of those nearing the finish line of the Kentucky Derby. His early energy conservation and late determination could come in very handy. A respectable finish should be in the cards.

PLUS QUE PARFAIT

Ridgling by Point of Entry—Belvedera, by Awesome Again

As we watched Plus Que Parfait's race videos, starting with his debut and ending with his win in the U.A.E Derby (UAE-G2), we had a lot of questions.

We think most of them were answered when trainer Brendan Walsh wisely added blinkers for his most recent race.

The result of that equipment change may mean the horse coming back from UAE is not the same one we saw floundering in Triple Crown preps in Louisiana earlier this year.

We were pretty close to completely discounting his chances of competing in Louisville after watching his six U.S. starts, where we saw a competitive minded, hard trying horse with some clear negative efficiency issues and a good but not great Herd Dynamic.

In his debut, which took place on the turf at Ellis Park, he got rank early and towed his jockey from 10th place on the first turn to 3rd place on the far turn. He showed a willingness to compete in Individual Herd Dynamic (IHD) combat, but he would do it with random horses, generally whoever was closest to him.

In his second race (on the dirt at Churchill Downs) he got stuck in the gate for a half stride, then jumped out to the front and tried to execute an IHD speed pattern of motion. But again we saw a horse that was just out there running. His focus points seemed a little random and scattered. He ran 3rd again.

We liked the strides he showed in his third race when breaking his maiden at Keeneland. Pressing the pace again, he showed improved fluidity and continuity.

His bumping battle through the lane with Harvey Wallbanger showed that Plus Que doesn't mind contact or close-space fighting. Plus Que Parfait did some lateral floating – his oblique space awareness could be better. It looked like Harvey Wallbanger had him beat, but when Harvey started exhibiting tail stress and lost some of his forward efficiency; Plus Que re-rallied up the rail and won a photo finish.

Although he didn't qualify for the Kentucky Derby, Harvey Wallbanger did later win the Holy Bull (G2) Stakes. The third-place finisher from Plus Que's maiden win, Cutting Humor, won his next race and later took the Sunland Derby (G3) to qualify for the Kentucky Derby (G1). So Plus Que Parfait beat some good horses there.

Plus Que Parfait finished his two-year-old campaign with a 2nd-place finish in the Kentucky Jockey Club Stakes (G2). With new rider Julien Leparoux on board, Plus Que hesitated out of the gate and found himself in 10th place early. We don't know if this was planned or not, but Plus Que completely changed his running style to a Group Herd Dynamic closing pattern of motion.

He executed it fairly well, and at the mid-stretch point he looked like a winner. But Signalman (who made the Kentucky Derby AE list but did not enter), rallied up the inside after saving ground and maintained his momentum a little better to get the win.

When Plus Que Parfait returned at age three, some of his previous efficiency issues came back worse. In the LeComte Stakes (G3) he stumbled badly at the start and ran a non-threatening 5th. It looked to us to be an issue of body control under pressure mixed with oblique sensory interpretation issues.

In the Risen Star Stakes (G2), Plus Que had a little trouble at the start and then checked heading into the first turn. Trying to execute the GHD closing pattern of motion, he looked over-reactive to stimulus and uncomfortable. His focus was pinballing. When Leparoux tipped him out turning for home, Plus Que looked confused. He finished 13th, beaten 20 lengths.

Plus Que Parfait looked nothing like a Kentucky Derby horse at that very recent point in his career, but he earned his way to Louisville by travelling to the Middle East and posting a surprising win in the UAE Derby (UAE-G2).

We think the difference was almost entirely due to the addition of blinkers (with an assist from jockey Jose Ortiz). Wearing blinkers, Plus Que Parfait exhibited better forward focus than ever. He was efficiently channeled forward for the first time in his career, wasting no emotional energy on oblique stimulus.

In 7th place along the rail in traffic, he looked much more comfortable moving within the herd in GHD. And his follow-through in IHD has never looked better. Ortiz and Plus Que Parfait weaved their way through traffic in the lane, redirecting to an open path back to the inside late and surging for the win.

This was a fabulous, strong ride by Ortiz, and by far our favorite race Plus Que Parfait has ever run. We think blinkers have changed this horse for the better. He starts a new development stage now.

Plus Que Parfait had no problem staying 1,900 meters in Dubai, and we don't think the extra 100 meters will be an issue for him. He can get the Derby distance.

Herd Dynamic competition level is another story, as that field was not close to what he will face in Louisville. And he is also a horse that bears watching during the long pre-race buildup. Blinkers won't help him if he burns too much emotional energy before the gate opens.

The effect of equipment changes on a horse's Herd Dynamic can change from race to race, but we were pleasantly surprised with Plus Que Parfait's run in Dubai. If he can build on that performance, he might run better than his body of work looks on paper. We wouldn't be shocked if he closed late for a minor award.

LONG RANGE TODDY

Dark bay colt by Take Charge Indy—Pleasant Song, by Unbridled's Song

Up until he finished 6th, beaten about 15 lengths in the Arkansas Derby (G1), we really liked the Herd Dynamic progression of Long Range Toddy.

His two-year-old campaign consisted of four races at Remington Park in Oklahoma. His August debut was a good practice run that saw him finish a close 4th going 5 ½ furlongs. He broke well from the rail and showed good efficiency and space awareness. In behind horses in the lane in a competitive cruise control, he exhibited good forward extension and rhythm to his stride.

They stretched Long Range Toddy out to a more suitable distance of 1 mile in his second start. He was good out of the gate again, and he showed us some nice relaxed rating gears as he sat just off the pacesetter in 2nd. His transition into IHD competing mode was smooth and fluent. He accelerated in that final quarter and pulled away with purpose to win by 5 ¾ lengths.

Long Range Toddy looked sharp and stress free on the gallop-out of his maiden win. This is a very aware horse, but he is not very expressive in his body language. He is all business in his races. He appears to have a balanced mix of GHD and IHD, and a steady emotional energy distribution. This is a good profile for two-turn dirt racing.

They tried stakes company while shortening him up to 7 furlongs in the Clevor Trevor Stakes. There was a chain reaction of chaos at the start, but he kept his body control and avoided being pinched back. He absorbs herd chaos well.

Again pressing the pace from 2nd, he has a very quiet, unobtrusive way of navigating the environment. He opened up in mid-stretch and won by a length.

The Herd Dynamic lessons Long Range Toddy experiences in one race often follow over directly to the next. When he stretched back out to a mile in the $400,000 Springboard Mile, he still had a little bit of the intensity he employed to win at 7 furlongs. He looked more forward and aggressive into space early. But as it turned out, patience would be the key lesson from this race.

On the far turn he was always behind horses, first pocketed, then hemmed in down on the rail. Long Range Toddy has good forward focus even in complicated GHD positions. He waited, then made an efficient lateral move to get out 4 wide in the lane and run for the wire. He hung on by a head over onrushing stablemate Bankit.

Long Range Toddy's three-year-old campaign consisted of four races at Oaklawn Park. In the 1-mile Smarty Jones Stakes, he got a good rail trip behind the leader and winner Gray Attempt. Never leaving the inside, he was wearing down Gray Attempt when the short wire came up. He just needed a little more time in motion to get the job done.

In the Southwest Stakes (G3) Long Range Toddy started from the 10-post, and he had to raise his intensity a little early in the scrum. He has good adaptability, environmental awareness and anticipatory responses. Rider Richard Eramira wanted to get over, and Long Range Toddy navigated the chaos to get down to the rail. He has been very good at working out ground-saving trips.

We like how he competed for space early, but then dialed down his emotional energy on the backside. Turning for home, the pacesetter Gray Attempt backed up in his face, but Long Range Toddy split horses and then came up the rail. When given room in the lane, he extended forward nicely and held a nice straight path rallying up the inside. He looked strong on the gallop-out. We liked this 3rd-place run.

Long Range Toddy's Herd Dynamic development was sneaky good coming into the Rebel Stakes (G2), and it all came together that day. Breaking from the 2-post, his pattern of good efficiency in the starting gate continued. He had the lead through the first turn, but he and rider Jon Court (who will be on board in the Derby) wisely relinquished it on the backside as Galilean and then Extra Hope rushed up on the outside.

A lesson/pattern of motion he learned earlier in his career came in very handy in the Rebel, as he had to wait patiently behind a wall of horses on the far turn. Steered out 5-wide in the lane, again his transitions look smooth on lateral moves and target redirects.

He made a run at Improbable, who had made a strong wide rally but lost efficiency a bit when he hit the lead. They came together in IHD combat, eye-to-eye near the wire, and Long Range Toddy put his neck in front. Fluency, efficiency (and ground loss) won the day there. Long Range Toddy's physical fractions of (:23-4, :24-1, :24-2, and a final 5/16 in :30-1) reflected his excellent energy distribution.

Based on his performances leading up to the Arkansas Derby, we would have thought 1 1/8 miles would be no problem for Long Range Toddy, and 1 ¼ miles quite possibly within his grasp. But his Herd Dynamic growth, which had been so steady and sequential since day one, blew up.

The Arkansas Derby (G1) was his first race on a sloppy track, but we didn't see any signs of major discomfort with his footing. He broke efficiently and was moving well, sitting in 3rd place when Omaha Beach made an early power move, passing Toddy on the outside and assuming control of the herd.

Toddy was still in third place on the far turn, but he was tiring just trying to keep up with Omaha Beach and Improbable. He faded in the lane.

There is always jostling at the top of the herd of male horses, and we think the bar for this generation was raised by the Arkansas Derby. Long Range Toddy finished in front of Improbable in the Rebel, but Improbable was the one who moved forward, and Omaha Beach made his claim to the throne.

When on his game, Long Range Toddy is a highly efficient opportunist. He is good at executing his pattern of motion, which usually involves him saving ground in tactical position, platforming, then making a smooth transition into a slow-dial, steady IHD advance.

Perhaps his efficiency has made him an overachiever since day one, and the Rebel was his peak? If he can recover from what happened in the Arkansas Derby and take a step forward in Louisville, he can certainly outrun expectations. An opportunistic but patient ride would probably be his best chance to get his Herd Dynamic development back on track in the 1 ¼-mile Kentucky Derby.

But if the Rebel was his peak, after a short refresher, we think this efficient runner would fit well in the post-Triple Crown Grade 2 and Grade 3 "other" Derbies.

COUNTRY HOUSE

Chestnut colt by Lookin At Lucky—Quake Lake, by War Chant

The good news for Country House is that he is a physically talented horse coming off the strongest, most efficient race of his career.

The bad news is that effort still only earned him a distant 3rd-place finish in the Arkansas Derby (G1). We see a lot of inefficiency in Country House's body of work, and that gives us pause regarding his chances in the Kentucky Derby.

Country House has never been through a public auction and he has worn blinkers in all of his races, so we haven't had the benefit of seeing him unfiltered. But judging by his physical output, this is a horse with some major quirks.

Country House debuted in a turf race at Belmont Park. His rider took up at the start, and Country House did not look comfortable. He caught up to the herd, but then checked on the far turn and backed off more than necessary – often the sign of a horse not confident in its environmental reads. He finished 9th in a non-competitive effort.

Country House tried the dirt in his second start in a 1-mile maiden race at Aqueduct. As the gate opened, his head and body pushed up instead of out. He was last of nine at the start.

Rider Junior Alvarado got into Country House, who responded by accelerating recklessly. Under a hammer lock from Alvarado, Country House was moving his head left and right, looking for somewhere to run the length of the backstretch. It is good to see that forward energy is in him, but this was uncontrolled, a little bit frantic.

Country House did launch into IHD in the lane and he made a run at Kentucky Wildcat (who went on to be Grade 3 placed). But after his initial burst didn't put a dent in the leader, Country House settled for 2nd place while running his final quarter in a slow :26. He made some progress there, but he was still very raw.

The quirkiness continued in his three-year-old debut at Gulfstream Park when Country House tried to take a left turn out of the gate. His body almost went sideways, facing the rail, in the opening strides. Rider Luis Saez straightened him out, but he was double digit lengths back early.

Country House caught up to the field, which was moving at a slow pace, and settled in 6th place. Making a second move, he launched 4-wide on the turn and passed the whole field by the time they reached the stretch. Running his final 5/16 in an excellent :29-4, he drew off to win by 3 ½ lengths.

That remarkable win led trainer Bill Mott to run Country House in the Risen Star Stakes (G2). Once again he broke poorly, his energy going upward instead of outward as the gate opened. Exhibiting tail stress early, he was turning his head. He looked a little bit reactive and body language expressive in traffic.

Country House has learned to recover from his poor starts, and after a little filtering time, he hooked into the field and settled. From there he platforms and waits for his rider to tell him it's time to launch. He looked good advancing on the far turn of the Risen Star.

When he cleared the herd and moved into second place in the lane, with only the leader War of Will (a monster Herd Dynamic) to catch, Country House lost forward focus and lugged in about four paths. Rider Luis Saez steered him off the rail and got him out from behind War Of Will, but there was no forward energy left. He ran through the wire evenly, hanging on for second place. Country House either wanted nothing to do with War Of Will in IHD battle, or his sensory system couldn't keep up with his changing environment, resulting in inefficient motion. It was probably a little bit of both.

A new rider (Joel Rosario) and reportedly a new bit (that might help the rider control him better), were the changes Mott made for the Louisiana Derby (G2). Country House bobbled slightly at the start and was turning his head. He was 10th of 11 horses early.

He launched 5-wide on the far turn. It looked like a nice IHD attack, but when he got within a length or two of the lead in mid-stretch, his energy weakened. He took a slightly wandering path through the lane and finished a hanging 4th.

Country House stayed consistent with his bad starts in the Arkansas Derby (G1), as his energy again went upward as the gate popped. One of his positives is that he has incorporated all of this – his strengths and his weaknesses – into a learned pattern of motion.

Again he launched 5-wide on the far turn. This running style lends itself to ground loss on the turns (but he is probably most comfortable rallying out there in the clear). Country House spun into the lane in the 9-path and for the first time since his maiden win, held his IHD drive and path through the wire. He out-finished Laughing Fox for 3rd place, but finished 5 ¾ lengths back of runner-up Improbable. From our standpoint, that was his best race to date.

Country House is running a GHD stretch-running pattern of motion, but we don't think he is a naturally strong GHD horse. Horses with holes in their operating systems will use other herd members to help them interpret the environment. It is harder for a horse to outsource those environmental reads when they are wearing blinkers. This could be part of what is going on with Country House.

Country House is physically talented, and he has his moments where he looks really strong coming forward, but he is prone to poor starts and interruptions in his transitions. Those behavioral traits are a recipe for underperforming in the Kentucky Derby.

CUTTING HUMOR
Dark bay colt by First Samurai—Pun, by Pulpit

Cutting Humor looks like a big, sturdy, strong colt, but he has some negative efficiency traits that are common in mid-level horses. We see cause for concern regarding how he will handle the Kentucky Derby.

If you want to see an example of how sensory interpretations can affect physical motion, compare and contrast Cutting Humor's first two races with his third race, when blinkers were added.

In Cutting Humor's debut at Belmont Park he came out of the gait a little frantic and internalized. He was digging hard, but his head was a little too high. He pressed the pace, but when he needed to dig deep in IHD to overtake the leader, he kinda pulled his own plug. He was not extending forward emotionally. Again head high, his motion was more up and down as he finished his final 5/16 in a slow :32-4.

In his second race, Cutting Humor had poor body control as the gate opened, crashing into the horse outside of him and losing position. He looked stiff and head high trying to catch up.

He looks much better when he can move out in the clear. He is able to find a cruise control when he is the far outside horse.

He was in a decent position on the far turn, but when Harvey Wallbanger ran by him on the outside, Cutting Humor looked over-reactive to oblique stimulus. We didn't like the looking-around, hanging-in-space, delayed reaction jockey Jose Ortiz got when he asked Cutting Humor to kick in. He finished a distant 3rd behind fellow Derby starters Plus Que Parfait and Harvey Wallbanger.

The improvement with blinkers was dramatic in his third race. Cutting Humor got bumped by the horse inside of him, but he didn't care that much. His forward focus looked much better.

He got a very wide trip, but all the ground loss didn't matter as he revved up into IHD and scored a powerful 2-length win over a decent maiden field at Gulfstream Park West. He was driving into forward space in the lane for the first time. His head came down, his extension was better, and he actually went belly down, running hard through the wire. Everything looked more fluent.

The time for this race was above average for the class level, and looking at his internal fractions, he actually accelerated from the third quarter (:24.86) to the final quarter (:24.54).

In his first two races we could see Cutting Humor expressing emotional stress physically. In this race he looked happy on the gallop-out. The improvement he showed in his first blinkered race tells us how uncomfortable he was before.

While blinkers can help cover up holes in a horse's sensory system, the holes are still there underneath. They can re-appear at any time, and they tend to do so in times of emotional stress or when a horse's physical abilities are put to the test.

His old demons popped up in his first race against winners when his head went up at the start. In traffic early, he did not look comfortable making Group Herd Dynamic reads. He was moving head-high again. Dealing with herd chaos still appears to be a problem for him.

John Velazquez was able to get him to the outside eventually, and his forward drive improved. Cutting Humor was in 3rd place on the far turn when the winner Bourbon War split horses to his inside. Bourbon War showed Cutting Humor how a horse with good space awareness and GHD efficiency advances through traffic! Bourbon War ran away from him to win by 2 lengths.

This was still better than he was without blinkers, but it is a reminder that he can still be prone to inefficiency.

That was the case in the Southwest Stakes (G3) at Oaklawn Park, where Cutting Humor hesitated to go forward as the gate opened, almost got sandwiched and lost position.

Again uncomfortable in close quarters, he is prone to overreact to space infractions, such as when #2 Ninth Street came over on him. Velazquez hit the brakes, and Cutting Humor almost lost his action.

He lost ground, then got out in the clear and advanced, only to get his doors blown off by the winner Super Steed. When Cutting Humor gets passed, he tends to watch that horse and he loses forward efficiency. It's like he gets caught in their wake. His head looked a little high in the stretch and he was looking around a little. Drifting out wide late, he finished 7th.

Cutting Humor got back on track and earned his way to Louisville by winning the Sunland Derby (G3). He looked a little uncomfortable early when bumped, and his neck and head looked tense in early traffic. But he looked better when he got outside to his preferred open lane on the backside.

Stalking a fast pace, Cutting Humor put away front-running Mucho Gusto then held on to win by a neck over the late-charging Anothertwistafate. We preferred how the runner-up was moving at the wire, but give credit to Cutting Humor for overcoming some early bumps and executing his pattern of motion.

Cutting Humor is a strong, physically talented horse, but we have reason to believe he could struggle in the Kentucky Derby. He is inefficient out of the gate, can get uncomfortable in herd chaos, and oblique stimulus (particularly from big Herd Dynamic opponents) can disrupt his physical efficiency.

GRAY MAGICIAN

Gray colt by Graydar—Burg Berg, by Johannesburg

Every once in a while we come across a horse that probably doesn't have what it takes to win the Derby, but we can't help but admire and root for him. Gray Magician is one of those horses.

Our race notes for him are full of praise even in losing efforts. He seems to have a ceiling in terms of his physical ability, but Gray Magician will experience physical exhaustion long before he gives up mentally.

We were sold on him as a competitor right from the start. He debuted at Del Mar on August 12 going five furlongs. His energy went up a little at the start, but he recovered quickly. In 8th place early, he had a fast-rhythmed, green, but competitively slanted energy to him.

Early in the stretch run, Gray Magician got sandwiched and smashed into hard by an out-of-control horse. Rider Tiago Pereira stood up and hit the brakes. But then came the best part of the race. Gray Magician recovered from the contact and went right into an IHD drive. He closed 4 lengths in the final sixteenth, moving from 7th place up to 3rd, beaten 1 ¾ lengths. Angling out just before the wire, he galloped out in front.

We like to see that adaptability in motion and then the good continuation after the trouble. He showed some grit there.

Gray Magician finished second in his next start after trying to execute an IHD speed pattern of motion from the rail. His post might have forced Pereira's hand a little, and we liked how he stayed on for 2nd place vs. a good field even though he got a little physically tired. He looked mentally sharp and engaged on the gallop-out.

In his third race Gray Magician finished third behind fellow Derby starter Improbable. Gray Magician brushed into the gate at the start and was shuffled back early by Improbable. He finished a distant third, but we thought his body control looked good while he drove to the finish out wide. After this race Gray Magician was transferred from trainer Hector Palma to Peter Miller's barn.

Miller stretched him out to 1 mile on November 24 at Del Mar, and Gray Magician responded with a workman-like 9 ½-length win. He still looked like he had a fast, competitive rhythm, but he relaxed well in his first two-turn race while stalking the pace from 3rd place. That is the type of trip we like for him.

They jumped Gray Magician up in class for the Sham Stakes (G3) next, but he was looking around a little bit in this race. It seemed like he knew he was in a race full of better Herd Dynamics. He respected them, but he wasn't afraid. The other thing we did like to see is that although he was well beaten, he was fighting late to advance from 5th place up to 4th. It seemed like he knew he wasn't good enough for the top three, but when he sensed weakness in 4th, he rejoined the fray.

Miller tried blinkers on Gray Magician in his next two starts. We didn't like the idea of taking an already fast psychology and turning it up another notch. He was spinning too fast when he finished 5th to Extra Hope. His second-place finish behind the talented Alwaysmining in the Miracle Wood Stakes in Maryland was better.

We loved Miller's decision to take the blinkers off Gray Magician when he shipped to Dubai for the 1 3/16-mile UAE Derby (UAE-G2).

He had trouble early, and he shrugged it off again. Very wide on the far turn, Gray Magician battled on to finish second to fellow Derby starter Plus Que Parfait.

We think that distance probably tested the upper echelon of his staying power, as will the Kentucky Derby. And we sense a class and physical ceiling here, but his heart is not in question.

Emotionally expressive but ready for anything, Gray Magician is a gritty competitor who is not easily discouraged.

BODEXPRESS (AE)

Bay colt by Bodemeister--Pied A Terre, by City Zip

The maiden Bodexpress nearly qualified for the Kentucky Derby – he is one scratch away from drawing into the field – on account of his surprising second-place finish in the Florida Derby (G1).

The Florida Derby was the third time in five starts that Bodexpress finished second. He clearly has good physical speed, but none of his races up to the Florida Derby impressed us enough from the Herd Dynamic standpoint to think he could be in this field.

Bodexpress finished 9th, beaten 16 lengths in his debut, but that race was a throw-out as he broke poorly and got wiped out shortly after the start. Wearing blinkers, he was unable to anticipate the moves of the other horses. His mind was pin-balling back and forth as he tried to absorb the environment around him. Bodexpress looked much like a boat with no rudder in this initial experience. Rider Paco Lopez kept him extremely wide.

The blinkers came off for his second start, and that was a positive move. Breaking sharply this time, he was able to hit an early IHD rhythm, and he was driving better into open space on the lead early.

Sustaining his IHD drive and reacting to rear Herd Dynamic pressure was yet a new experience for him and coming down the lane he was casually overtaken by Overdeliver (who finished a distant second behind Win Win Win in the Pasco Stakes in his next start). This was an improved, emerging try from Bodexpress to finish second.

Trainer Gustavo Delgado stretched Bodexpress out to a one-turn mile in his third start, but he had the misfortune of running into a buzz saw first-time starter in Hidden Scroll, who set a fast pace and drew off to win by 14 lengths in the slop. Bodexpress disengaged his IHD and was happy to "buddy-up" with whoever happened to be nearby. He finished 4th, beaten 18 lengths.
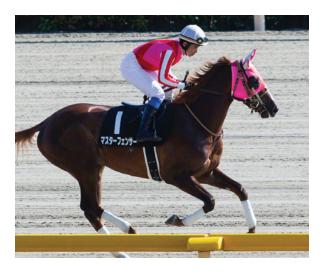
Dropping back in distance to 7 furlongs in his fourth start appeared to help Bodexpress, but he just missed getting the win behind first-time starter Shancelot. This was quite a fast maiden race (it produced two impressive next-out winners), although we were disappointed to see Bodexpress adopt a tentative approach into the space of the winner, appearing to hang in deep stretch.

The Florida Derby was by far Bodexpress' best race to date, as he outfinished some good horses in Code of Honor and Bourbon War. It appeared Bodexpress took advantage of two things to post his surprising runner-up finish: a slow physical pace and an inclination to outsource his rhythm by connecting with the leader Maximum Security, trailing along with him around the track in a supporting role.

After running six furlongs in a slow 1:13, Bodexpress rode Maximum Security's wake through the wire, running his final three furlongs in a solid :36-2.

Bodexpress so far in his career has shown that he is better physically than he is herd dynamically. For that reason, his qualifying race seemed a bit fluky to us.

Antagonists to his success in the Kentucky Derby include his largely outsourced GHD and an IHD that, although supported by good physical speed, has thus far failed to attack space with authority at the end of a race.

MASTER FENCER (JPN)
Chestnut colt by Just A Way--Sexy Zamurai, by Deputy Minister

Our profile on Master Fencer (Jpn) is based on videos of his two runs in stakes competition in Japan – the Hyacinth and Fukuryu Stakes.

In the 1600-meter Hyacinth, Master Fencer broke from the #1 post and was wearing headgear. He fell back to last place early, exhibiting some sensory drag as he endeavored to find his rhythm. He settled well behind the herd.

His initial psychological rhythm appeared fast and more up and down than forward, inhibiting early fluency. As he drew nearer the herd, his forward focus started to dial in on the closer targets. However his ears indicated his sensory system was struggling a bit trying to clear space.

Swinging wide to find less traffic and fewer stimuli to interpret, Master Fencer tried to build into a forward IHD sequence. His physical talent hard at work to support his senses and herd dynamic, the psychological struggle for continuity was evident in his physical rhythm as he tried to take forward space. Heading to the wire this was a slightly frantic physical effort, but Master Fencer did rally to finish 4th.

Master Fencer lengthened to 1800 meters in the Fukuryu Stakes at Nakayama. Again wearing his headgear, Master Fencer lurched out of the gate. He was in no combative rush to engage. In 7th place of eight contenders early, he sought to let things settle around him as his sensory system filtered. His head carriage looked high. He may not have been enjoying the kickback heading into the first turn.

On the backstretch #8 Der Flug, who was Master Fencer's partner at the back of the pack, began a wide advance. Master Fencer looked to hitch a ride on Der Flug, who was interpreting the environment much more sharply and moving more independently.

The Herd Dynamic strength of his opponents and his own blurry space awareness seemed to be gnawing away at Master Fencer's efficiency in herd chaos. Moving with a partner helped him somewhat, but in reality he never engaged with the environment efficiently, nor was he a threat to pass Der Flug.

A freeze-framed still shot just before the wire shows the story: Der Flug was driving through open space to get the win. Master Fencer was moving through the space his opponent cleared.

Master Fencer has all of the earmarks of a horse whose athleticism is much deeper rooted in his physical ability than his herd dynamic and sensory soundness. With the environment projecting itself upon him instead of the other way around, the "ask" of the Kentucky Derby is going to be a big one.

Master Fencer often struggles to distribute his emotional energy evenly and forwardly. When he does find himself in the clear, with minimal environmental chaos, his emotional energy borders on frantic when trying to dig into IHD combat mode. He tries very hard, but I fear the herd dynamic dependencies and sensory disruptions are going to be too antagonistic to fulfil the derby dream for this Japanese-bred entrant.

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

Anticipatory Response: A response that comes from anticipation, based on environmental circumstances. An anticipatory response precedes the actual stimulus. It is a learned response that becomes a habit. The anticipatory response mechanism can be used for learning and growth. However, an improperly functioning sequence can create aberrations and inefficiency.

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.

Buddying-Up: Occurs when a mid-level herd horse seeks the comfort of movement with another horse. Buddy-up horses are dependent on another horse for safety, direction and rhythm of motion.

Egg: The horse's egg is the space around the horse, varying in actual foot-distance by the individual, that is its personal space and area of influence. Shaped much like an egg is shaped, it is the area where stimuli are efficiently interpreted. It is directly related to the herd dynamic of the horse; that area around the horse that it manages.

Emotional conformation: the mental and emotional psychology of a horse, that makes up who they are. It includes the way they communicate, interpret stimulus, and almost everything they do, including compete on the on the racetrack.

Emotional Conformation Profiling: The study of a horse's Mental/Emotional Intelligence & Ability in three key areas; Trainability, Herd Dynamics, and Behavioral Genetic Traits.

Group Herd Dynamic (GHD): GHD is a horse's awareness of the environment, including the herd around them. GHD goes hand in hand with the ability to interpret stimuli. A horse with a good group dynamic can see/feel the big picture and where the horse itself fits into that picture. A healthy group dynamic usually is integral for a horse to consistently run well through traffic. Many horses with big group herd dynamics 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 literally feed off of the energy of herd motion and are comfortable letting it unfold over time and distance. GHD horses do not feel an urgency to take control of a herd immediately. Horses with high-functioning Group Herd Dynamics are usually multi-taskers, capable of taking in a number of stimuli at once without focusing too much on any one thing.

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 group and individual herd dynamics combined).

Individual Herd Dynamic (IHD): IHD is the dynamic that involves just the self and a singular target. IHD mode is one-on-one competing mode, hence it is very important in racing. A high individual herd dynamic is integral to being a great racehorse. IHD is the ability to turn on the intensity, fight for space, and vanquish an opponent.

As important as IHD is, too much IHD energy or unwise usage of it can lead to inefficiency. For example: a horse engages in a pace duel with one other horse, not thinking about the rest of the field, the length of the race, or anything else but that one-on-one struggle, and he uses too much energy too soon.

Horses that rely too much on individual herd dynamic also can get lost/overwhelmed if they have too much stimuli to interpret. Front-running horses that only run their best races when they are near the front of the herd, where there are limited stimuli, are usually very high on individual herd dynamic.

Horses with a lot of IHD energy sometimes don't "turn it off" that easily. So while they possess more fighting energy, they also tend to burn emotional energy at a higher rate. This sometimes leads to inefficiency in their distance aptitude.

In some ways, IHD dominant horses are like bullies. They are very dependable in their ability to dominate weaker competition and assume herd leadership at the front of the pack. This works well, especially for American racing where front-end speed wins a lot of races. But there is a downside to being an imbalanced IHD bully -- when you're only operating on one dynamic, it's easier to have the rug pulled out from under you. And when things don't go their way, some individual dynamic horses tend to fall apart.

In nature, male horses tend to be Individual Herd Dynamic dominant.

Mental Efficiency Zone (MEZ): Mental distance aptitude, expressed in race distance. The amount of time/distance a horse is able to efficiently operate from a mental standpoint.

Pattern Of Motion: A naturally occurring or learned response to the stimulus of a horse race. A pattern of motion develops every time a horse engages in a workout or a race.

Purposeful Motion: Efficient, willful movement, including reactions and non-reactions to stimuli, based on proper interpretations by the sensory system. High-level herd dynamic horses move with purpose in response to situational chaos, never losing control of their reactions to the environmental stimuli of herd motion and chaos. Thus, physical speed and movement is purposely controlled to fit the circumstance, as a naturally occurring act of self-preservation.

Sensory Dependency: The use of one sensory avenue over another to interpret stimulus even when such stimuli could be more efficiently processed by another sensory avenue. Example: eye dependent

Space infraction: When one horse infringes upon another horse's space.