THT BLOODSTOCK: PATTERNS OF MOTION ANALYSIS

WITH KERRY THOMAS AND PETE DENK

KENTUCKY DERBY 2022 HERD DYNAMICS ANALYSIS
A personal note from Kerry M. Thomas

Thank you for being a part of this year's Derby report. As always, we appreciate everyone, from those who are purchasing this report for the first time, to those who have supported our product over the years. 2022 marks our twelfth Kentucky Derby analysis. The journey has been one of discovery and progression as we march forward to advance our work. Thinking about when we started and about where we are now makes me excited for what yet lies before us.

We continue to make unique discoveries the deeper we dive into the fascinating world of herd dynamics. We do it as our business to provide forward-thinking services for the industry, but also to augment a deeper appreciation for the horses. There may be few enigmas on the cover of the horse, but there is no shortage of mysteries dwelling within their psyche. As complex as any sentient social being, the unique essence of the herd dynamic only reveals its secrets if you're patient enough to peer through their expression to understand the inflection.

Within the eye of a horse there can be found the truest reflection of ourselves. This is why we are drawn to them; it is intrinsic. I know for me personally that among the things I saw looking back at me were a depth of reasons to stay on and push forward. If you were here for last years' derby introduction you will know what it is that I am referencing, a time of great sadness and loss just weeks before the Kentucky Derby Analysis, had befallen me. It was a tough road as many of you have experienced, or are experiencing, yourself. I can tell you that among the most important relationships you will ever have, is the one you have with yourself. It is essential and its reflection can be found within the relationships of everything else around you.

I'm often asked what it is I learn the most when studying horses, and be there many, the individual's intricate link and the manner of its connection to the whole, is profound. Their innate ability to adapt and assimilate to the battle scars of life helped me tremendously and reminded me that despite the pain I experienced, I had to think forward. I dusted off, put my hat back on over the summer months and determined to live again, love again, embrace every moment of the unknown amount of time that is left. It is possible to rediscover joy and the excitement of what's next while remembering with respect what you once knew; happiness is a choice.

The journey of life is a series of events, experiences marking time along the way, contributing to our own unique growth. Experiences themselves do not define who we are, but the manner in which we negotiate them and their effect upon us is a reflection of who we are. No experience in life, in my opinion at least, is trivial nor fleeting. All can be as enlightening as they can be lingering, and almost all can have an associative effect on another.

This sets in motion, as the collection of experiences multiply over time, a growth pattern; which means that the manner in which the next experience is interpreted is predicated upon the interpretation of the experience(s) before it. Separate incidents are strung loosely together by the fabric of association and it is from the associative aspect that a memories' timbre is rooted. Like a song or a scent can take you back through time; a journey that carries with it the profound statement made at its inception, be it positive or negative.

For me the sound of crickets and frogs/toads in the summer nights takes me back to 12-year-old me, spending time with my family at the cabin up near Penn State. I may be 53, but when I close my eyes and hear them, I disappear into yesteryear with ease. It serves as a comforting reminder that time itself, in some measure at least, can be removed by our imaginations, for only the physical is subject to it, when our minds are set free.

Horse Profiling & Handicapping

Studying the collection of psychological ingredients in horses and how the assemblage of them is composed to manifest what I often dub the "operating system" is the baseline for herd dynamic profiling.

Making an effort to postulate how a particular group of horses is likely to respond to a changing environment and the competitive nature of their peers is a study in many parts. Few more important than identifying individual growth patterns and where an individual is on their's as compared to others they're facing.

Handicapping with herd dynamics starts here. Handicapping races is different than handicapping horses inasmuch as in a particular race you're seeking to identify where a horse is in their physical and psychological growth pattern to project how well they match up against another.

Handicapping a horse is the art of identifying and projecting the trajectory of those growth patterns. It is impossible to properly ascertain any would-be competitor without considering them as both physical and mental athletes. Before you can surmise how

a particular horse may compare to peers in competition, you have to understand how that horse collaborates with his/herself. If the mind-to-body fluency is disrupted under stress, competitive nature cannot manifest into competitive edge. This means that you have more physical talent than you do mental stamina and grit, and you are left to determine which of these are most likely to prevail.

Mind-to-body fluency is the smooth and sequential psychological translation of information, manifested into a controlled physical response. The common equation for this is the sensory system, acting like radar, identifying environmental stimulus in one or more of the sensory aspects which is necessarily funneled into the psycho-sensory (mind) for interpretation.

Physical response is administered based upon interpretation, the manner of which, be that controlled or reactive motion, indicates the nature of interpretation. When information is not properly interpreted the horse will display erratic physical movement(s), internalize emotional stress, or a mixture of both. When these things happen in competition it greatly affects both physical pace as well as mental stamina.

To offset what I classify as interpretive disruptions, the horse has two main sources of remedy, both an extension of their atavistic nature. First is their reliance upon the built-in herd dynamic characteristic of dependency/co-dependency within herd structure, and second, interpretative disruptions are circumvented altogether through the associative aspect.

The sense of insecurity is the great emotional enemy of the psyche, and for the prey animal this can be quite hermetic. Prey species find sanctity in harmony, peace in comfort. The herd animal sources them largely through their peers and environment. When emotionally removed from this inherent herding tendency, the horse can become overwhelmed with a sense of psychological confinement and exposure that can dramatically alter their personality. Isolated at too young of an age. the horse's normal growth pattern is at risk and greatly skewed by the lack of nurturing where interpretation is outsourced and experiences cushioned through the watchful eyes of older horses.

When harmony and comfort become dependent on associations through an isolated psyche, strong addictions to them occur, even to the point of emotional trauma. Many addictive behaviors that manifest later can be traced to a disruption or interruption, of the nurturing process. A breakdown of the family structure can have great effect on psychological development. That is why I always say, nurture the horse, develop the athlete.

The Kentucky Derby is more a total experience than it is a race, and trying to resolve the most likely "order of finish" can only be surmised through the determination of the hierarchy tiers. In order for us to do this, we have to unravel the herd dynamic makeup of each horse, identify who they were, who they are now, and where they're likely headed. Herd Dynamics tell a tale about the horse and their most likely trajectory based upon many accumulated and studied ingredients, chief among these is naturally occurring, inherent psychological growth patterns.

Who the horse is now may or may not be the truest representation of their future selves. At this particular stage in their career path the majority of horses have less races under their belt than they have ahead of them (at least I like to think so anyway), which translates to a still developing psychological growth pattern for the greater number of participants.

It is true that we see varying degrees of mental aptitude from the very near completed painting to those just starting to fill in. The Kentucky Derby evaluation process involves gaining a comprehensive understanding of the horses' projected future while studying a snapshot of the now. You have to compare the individual that they are to the individual they have potential to become.

As a total experience, obtaining a view of how the race itself is most likely to develop once the herd is in motion can only be embraced by appreciating how this new and unique milieu will be acknowledged by the horses within it. Who among them are best equipped to keep psychological time with the environmental changes they're in? It matters not whether we are looking for prospects at a horse sale or profiling for the derby, the horse must be considered both physically and mentally. The question has to be asked, is there psychological athleticism enough to maximize physical talent?

Assimilation to sudden changes is the cornerstone of versatility. This can only be done effectively and in a controlled manner of expression when the interpretative process is cycling at a faster pace than the rate of changes around them. The assimilative processes identified in competition, along with their growth pattern, is a reflection of adaptability to situational chaos as a whole.

In condensed environments of stress such as a race, individual stimulus has to be interpreted relative to the rate of physical motion of the interpreter, (this is also true during training, tasks must be mentally completed before moving to the next). To efficiently maneuver through an environment of uniquely moving parts, the horse must physically harmonize pace while having the ability of increasing psychological rhythm, when necessary, in order to maintain proper emotional energy distribution.

Multitasking is the navigation of multiple stimulus without losing physical efficiency. This aptitude is an earmark of a high functioning sensory system and elevated herd dynamic.

The further removed the individual is from an obligation of outsourcing to their peers for their interpretations, the more elevated they are within the structured hierarchy. One of the more difficult things for a herd animal to do is operate independently of that

nature. The mark of independence is a psychological rhythm that does not have to change to match the physical pace of others. These horses are highly versatile because they're mentally tactical. They are not left to assimilate to sudden changes after they happen, they navigate the chaos in a strategic manner without over expressing. Reading the room properly allows you to keep time with the changes in your surroundings.

Whether we're evaluating total athleticism at an auction or determining an athlete's probability of success in the Kentucky Derby, the evaluation of independent nature is requisite to it. I care less about the pedigree or how physically awesome any horse is before I determine how likely these factors are to be maximized in the heat of battle. Fast times at a two-year-old in training sale, or stellar physicals at a yearling sale, mean little if in the end there are grave deficiencies between the ears. When you make a decision to invest in a horse, you're investing in the total animal, everything they are regulates everything they can become. I want to "feel" the horse; I know what they are, I want to know "who" they are before I can get a sense of their inherent athleticism.

Handicapping with the herd dynamics is not about studying what happens to a horse in a race, but understanding how they react to what happens. There is often quite a difference between horses that are in the Kentucky Derby and a "derby horse". Paying attention to details in the horse's career path such as sensory efficiency, mind-to-body fluency, expressions of stress and how protracted time-in-motion (T.I.M.) demands affect mental stamina, go far in ascertaining how long a particular athlete can sustain competitive edge. In shorter distance races the T.I.M. is obviously less, but that does not mean that mental fatigue is removed from the equation.

The management of mental stamina is predicated upon the emotional density of stressful situations and how long they last. Regardless of whether a race is 6 furlongs or 1 ¼ miles, these physical distances are psychologically fragmented into disproportionate demands of mental focus and strain. Properly handicapping a horse requires a close look at how they mediate each moment of elevated emotional strain, be it a quick disruption that takes but a second, several strides, or the protracted.

In addition to this, you have to make an effort to comprehend the actual intensity level of these stresses which, to reiterate an important factor, means paying close attention to the reaction and/or recovery time. Each of these compartmentalized competitive stresses can have a major impact on the psychological aptitude of the athlete, gnawing away at their emotional energy, altering its distribution, curtailing the duration of competitive edge coming down the home stretch.

Comprehending the horse's natural ability to mentally rate and identifying the characteristics of it, are important. There are great benefits to be realized in a seemingly impervious psychology; an energy distribution that has an achievable cruise-control cycle allows the horse to maximize conserved energy for purposeful responses. Competitive edge, generally associated with an IHD shift, is not a tool that has but one use. In a high functioning herd dynamic, there is versatility within it and controlled ability to access it in the necessary degrees required by the situation, nothing more, nothing less. Over expression within the body of the race and you risk running short of mental stamina at the end, under-expressing and you risk, well, falling short.

Compartmentalizing your handicapping helps embrace the battles within the war. Comparing what the physical numbers show to what your eyes are telling you, helps you better understand the level of fluency between mind & body. Tactical turn of foot without a tactical mind, will lean upon the jockey for thoughtful execution. A tactical psychology with a heavier turn of foot asks for positional assistance while allowing trust in the horse. Those with both tactical turn-of-foot and mentality only ask for the humans to stay out of the way and ride with finesse and feel. Handicapping the collaborative relationship between horse & rider is an important part of the equation; you have to understand the horse in order to do this accurately. It's vital to not undervalue the horse/human communicative aspect by over-valuing the rider's accepted skillset. Matching human tendency to herd dynamic traits are important in every such relationship from the race track to the dressage ring.

An appreciation for and an understanding of the horse in their entirety is essential, it's not just the horses in a race that matter. A horse is a horse all of the time. Their performance capacity is an extension of, not a separation from, who they are. Identifying the characteristics of the individual and determining if they are inherently capable of sustaining the physical and emotional demands of athleticism should always be considered regardless of discipline, lest a horse be placed into an environment they're not readily equipped to handle. Achievable goals are ones that align with total athletic ability.

There is "cost" and there is "value"; cost is what you're willing to spend on the value you hope you're getting. It's wise to identify the athletic strengths physically and mentally and ask how they're likely to collaborate and which among those are more likely to carry the day if there is disparity between them. These are key factors you should consider in your investment strategy be it for handicapping or purchasing.

Closing Thoughts

From my point of view, an understanding of herd dynamics can go far in bringing the horse back into horse racing. The horses themselves are the greatest ambassadors the industry has, introducing who they are can supersede what they are, allowing for a much broader reach. Connecting people with the athletes beyond their "profession" is an important step to sharing the endearing beauty of these animals. Cultivating appreciation and interest in the sport not through the wallet, but through the heart, is in my opinion, the way for a brighter future.

Each year during our comprehensive study which produces this product, I personally end up with a vast collection of scribbled notes and thoughts about the herd dynamic makeup of each horse, information that is of course incorporated into the full profiles of the athletes you have here. As I was thinking about ways to try and expose more people to the personality side of the horses, I thought it would be fun and perhaps even helpful in fostering interest with at-large fans, who may only be race fans one weekend a year, to have access to some "color commentary."

I decided that I would take my notes and thoughts, condense them down to a few fun facts, add a touch of additional musings, and create little herd dynamic capsules as a character summary. I look at these as being more like the fun "get to know the player" information on the back of baseball cards. When I was a kid, I always loved reading that information, it made the players seem more real to me. I wanted to offer an opportunity for making the horses as personally available as possible through the herd dynamic lens by putting the capsules on our website blog.

The beauty of the horse we must never lose sight of, and if by taking a view from the hoof we can merge the passions of the horse players and industry insiders with those who simply love horses, every equestrian industry just might benefit.

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A very special thank you each year goes without saying to THT partner Pete Denk without whom this month-long undertaking would not happen, let alone for the 12th time. I certainly appreciate everyone at Brisnet for all the hard work and time it takes on their end and as always, a special nod of appreciation to our roots with Kentucky Confidential where this journey began.

And indeed, I can't thank those of you enough who have supported our efforts now and through the years. Our goal is to provide you with as much unique interesting information as we can about the horses in an effort to not only help your betting strategy but also to perhaps enjoy them even a little more than you already do.

At THT Bloodstock we are a full-service international bloodstock company and we invite you to visit us at www.thtbloodstock.com to learn more. Let us know how we can help you, reach your goals.

Herd dynamics, because if you're not thinking forward, you're already behind.

Thank You,
Kerry M Thomas, Founder

There are many key factors to understanding horses and appreciating their athletic aptitude,
below are some important things to keep in mind.

~ Kerry

Herd Dynamic Keys of Performance

"The mental capacity of the equine, controls the physical output of the athlete."

"I have always considered in nature that roughly 85% of herd animals are inherently dependent for 50 to 55 percent of their environmental interpretations; translated into athletic performance this compromises total herd dynamic strength. This is not to say they can't achieve athletically. It does mean the larger body of work will be saddled with environmental requirements that upper level, more independent minded peers, are less likely to assist with."

"Only running in spots is a reflection of a disruption in growth patterns which is a reflection of interruptions in psychological efficiency."

"The smoother the sensory sequences the more evenly distributed the emotional energy, even distribution conserves mental stamina for the drive home."

"Where equipment works in partnership with the physical horse, the rider works in partnership with the emotional horse."

"The balance between mind and body affects the cadence between horse and environment, athletic expressions are in large part emergent properties of these. When there are tendencies of personality that gnaw away accumulatively at total performance, the reliance upon physical talent is heavier."

"Herd Dynamics Matter; every horse, every discipline, everywhere."
- KMT

Herd Dynamic Rankings (by tier) for the 2022 Kentucky Derby

TIER 1 ★★★★
1. Epicenter
2. Zandon
3. Taiba

TIER 2 ★★★☆
4. Mo Donegal
5. Smile Happy
6. White Abarrio
7. Zozos
8. Messier
9. Charge It
10. Cyberknife

TIER 3 ★★☆☆
11. Barber Road
12. Rattle N Roll
13. Classic Causeway
14. Tiz the Bomb
15. Crown Pride
16. Simplification
17. Pioneer of Medina
18. Tawny Port
19. Summeris Tomorrow

TIER 4 ★☆☆☆
20. Ethereal Road
21. Happy Jack
22. Rich Strike

A note from Kerry and Pete: We provide these rankings as a service, but they are loosely arranged. We were splitting hairs in many cases. Don't put too much emphasis on the order!

We don't expect the winner to come from Tier 3, but there are horses in that tier that we like quite a bit either for their overall quality or for their chance to spring a surprise and possibly land a minor placing.

We strongly encourage you to read our observations on the individual horses and glean from the profiles what you wish, combining them with your own opinions and observations.

Our primary goal is to help bring to light the individuality of each horse – to accurately answer the question who these horses are as herd animals and emotional athletes.

We thank you for the interest in our analysis!

EPICENTER

Colt by Not This Time—Silent Candy (Arg), by Candy Ride
Bred in Kentucky by Westwind Farms

Owner: Winchell Thoroughbreds LLC
Trainer: Steven M. Asmussen

We dove into probable Kentucky Derby favorite Epicenter's race videos with curious, skeptical minds. It didn't take long for him to win us over.

Epicenter is a classy, smart horse with a competitive nature. His mental efficiency and emotional conformation are integral parts of who he is as a racehorse.

Epicenter finished 6th in his first race, and even so, we immediately liked what we saw.

Epicenter debuted at Churchill Downs in a 7-furlong maiden race on September 18. He had the #2 post in a field of 10, and he got out of the gate well. Rider Ricardo Santana Jr. asked him for speed at the start, and Epicenter delivered smooth acceleration.

The way he came through between horses and grabbed the lead demonstrated athleticism, space awareness, and good mind-to-body fluency.

Epicenter set early fractions of :22.37 and :45.72. There is plenty of physical speed here, and his ears were flopping as he led the herd forward. When a horse executes a sequence like that in its debut, it's a strong sign of an Individual Herd Dynamic (IHD) slant.

Epicenter's ears tightened up late on the turn as he realized two things: he was getting a little physically tired, and there were other horses still challenging him. Epicenter fought back, showing some good poise and body control even when tired. But his stride shortened late as he finished 6th, beaten 7 ¾ lengths. It was a fine debut to build on.

Many good horses take a big step forward in their second race, and that is what Epicenter did when stretched out to 1 mile at Churchill on November 13.

He had the outside post in a field of 10. Many young horses will struggle with that post because of the open space to their outside. We could see a little down-pressure on Epicenter's body as he exited the gate, but recovered quickly. His environmental awareness kicks in just after the start.

Epicenter confirmed his IHD speed profile from the debut, transitioning immediately into competing mode and battling for the front. His ears were articulating and flopping as he opened a small lead outside of #3 Surfer Dude through a half mile in :45.84. Epicenter's tail was relaxed. There was no stress in his body.

Epicenter's ears tightened, his competitive edge showing, when Surfer Dude tried to make a move inside of him. With only the subtlest of urging from jockey Joel Rosario, Epicenter took over through 6 furlongs in 1:10.43. With one crack of Rosario's whip in the lane, Epicenter drew away to win by 3 ½ lengths. Epicenter has a wonderful, controlled cadence to his stride.

Epicenter spent his winter at Fair Grounds in New Orleans. He made the jump to stakes company look easy in the Gun Runner Stakes, his first two-turn race. Breaking from the rail and with Brian Hernandez Jr. onboard, Epicenter's first step was just a little clumsy. But again the recovery was quick. He intensified when Hernandez shook the reigns at him.

Surfer Dude was a little quicker to the first turn, so Hernandez waited for that opponent to come over, then shifted Epicenter to the outside. Epicenter's transition was smooth and he was soon right outside the leader. Ears flopping again, Epicenter took control of the herd.

As Epicenter drew away to win by 6 ½ lengths, none of the other horses were even trying to pierce his space. Epicenter has a deep well of emotional energy and he distributes it in a very controlled manner.

The only blemish on Epicenter's record (after the debut) was a head-bob loss in the Lecomte Stakes (G3). Epicenter opened up a lead on the back side and appeared to be in control in the lane as he fought to keep Pappacap from advancing on his

inside. Epicenter won the battle against the other IHD speed types, but closer Call Me Midnight came running on the outside to win by a head bob.

There were only a couple strides where Epicenter wasn't in front, and we could see he was looking to fight back after the wire. Even though Epicenter was slowing down physically, we liked that mentally he wanted to keep fighting.

Epicenter responded to that loss with a Herd Dynamic growth race in the Risen Star Stakes (G2). Stretching out to 1 1/8 miles, he was facing a field that included five Kentucky Derby horses.

His start is almost always the same – there is a half a stride of float, then his mind catches up and he goes right into efficient, competitive motion. Epicenter got out and over to the rail from the 5-post to stake his claim on the early lead. This is a very focused and purposeful mover.

He emerged from the first turn after a first quarter in :23.79 looking relaxed and in control. His ear articulation when on the lead is indicative of a significant underlying Group Herd Dynamic awareness. He has a great sense of feel, and he can monitor his oblique and rear sensory fields without losing forward efficiency.

Unchallenged on the front end, Epicenter set a modest pace and drew off in the lane, completely independent of the herd. He won the Risen Star by 2 3/4 lengths while being geared down.

In the Louisiana Derby (G2) Epicenter broke fairly well, but with his regular rider Rosario sitting chilly, Zozos and Florent Geroux came out into Epicenter's path early.

Epicenter wanted to fight for that space, but Rosario checked him lightly and steered him down to the rail. This was the first time we have seen Epicenter in rating mode while covered up behind horses. He took to it beautifully.

Sitting in the pocket just behind the leaders, his tail was relaxed and his rhythm remained methodical. Epicenter showed a great deal of control and patience while remaining engaged with the leaders – he never let that space between them get too big.

Rosario eased Epicenter out into the three path late on the far turn. The transition into IHD competing mode was smooth. Again showing off his strong, balanced stride, Epicenter took over while under a hand ride from Rosario.

Methodically increasing his advantage, Epicenter drifted down to the rail as he looked to keep tabs on the competition behind. There was none coming; he won by 2 ½ lengths.

Rosario only showed Epicenter the whip for the first time in the final sixteenth, and that was only as a reminder to stay in a drive. Epicenter's ears scissored just before the wire, then went back into forward space clearance on the gallop-out. We don't think Epicenter will have a problem adding another half furlong in the Kentucky Derby.

We love Epicenter's poise and confidence. Things change around him, but his mental rhythm remains the same and his focus does not waver. We see no holes in his sensory system; his space awareness and body control look particularly good. His efficiency and emotional energy distribution looks great. He doesn't waste energy.

This Herd Dynamic Type is typically most comfortable leading the herd, but Epicenter showed his versatility in the Louisiana Derby, where he got invaluable practice with a secondary pattern of motion. We could envision a similar trip for him here from the #3 post.

With his dominant performances and still forward-moving growth pattern, Epicenter is our top-rated horse going into this year's Kentucky Derby.

ZANDON

Colt by Upstart—Memories Prevail, by Creative Cause
Bred in Kentucky by Brereton C. Jones/Airdrie Stud

Owner: Jeff Drown
Trainer: Chad C. Brown

One of the things that stands out to us about this year's Kentucky Derby field is how many horses are still so early in their Herd Dynamic growth patterns.

With four career races, Zandon is short on experience by historical measures, but he put together a powerful sequence when winning the Blue Grass Stakes (G1) in his final prep.

Having completed the first phase of his growth pattern, Zandon is actually ahead of many of his opponents. Even better, we see additional room to run on the upside. Zandon is an exciting contender.

Elite horses have a way of making increasingly tougher tasks look easy while stacking growth races on top of each other, and that is exactly what Zandon has been doing.

Zandon debuted in a 6-furlong sprint at Belmont Park on October 9. He threw his head at the start, lost a step to the field, then accelerated. Right away we saw that he needed to run off a little bit of pressure that had built up while standing in the gate. Zandon is a physically expressive horse that filters stress mostly through movement.

He caught up to the lead pack, then rated in behind them. We could see a big forward projection from him even when physically blocked. Still stuck in traffic in early stretch, he swung out 4-wide and pushed a horse out of his way. Running his final quarter in a sharp :23.73, he won by 1 ½ lengths. It was a chaotic, rushed trip, and Zandon had to put a bunch of pieces together on the fly. He did it with eye-catching raw talent and a powerful emotional energy.

Zandon went directly to the 1 1/8-mile Remsen Stakes (G2) off that maiden sprint win. Lightly bumped at the start, he squeezed forward when rider John Velasquez asked him. Zandon holds a strong path in traffic and has the forward instincts we like to see.

The Remsen featured a slow pace, and Zandon was up close to it but caught 3 or 4-wide on both turns. He launched his bid approaching the stretch while in between horses. He put both of them away, then immediately had to defend against Mo Donegal, who was rallying on the outside. That is not an easy sequence for any horse, especially a young one stretching out in distance.

Mo Donegal went from the 6-path at the head of the lane down to the 2-path inside the 1/8 pole, tightening Zandon's space against the rail. Watching the head-on replay, it appears Mo Donegal's rider Irad Ortiz Jr even made contact with Zandon as the two colts went eye-to-eye, bumping twice.

Zandon lost by a nose, but he showed no fear despite the space infraction, and he was fighting back against Mo Donegal at the wire. Zandon showed resilience and good space awareness even in a fierce IHD battle. His body control and stride efficiency in IHD is excellent. To do all that in his second lifetime start is the sign of a very strong Herd Dynamic.

Zandon made his three-year-old debut in the Risen Star Stakes (G2), going 1 1/8 miles at Fair Grounds. He hopped and swerved a little bit at the start and that put him in last place early. Zandon is typical of his sire line (Flatter-Upstart) in that he has fast mental cycles and filters his stress best at speed.

Moving efficiently from a standing start is one of the trickier tasks for a physically filtering horse to do. Their movements right when the gate opens can be a little random. That usually smooths out with experience, and the tradeoff is you get a very athletic Herd Dynamic once they are moving.

In the Risen Star, he was in 9th place early, then commenced a wide move on the far turn. He never reached the winner Epicenter, but he was in a 3-horse battle with Smile Happy and Pioneer of Medina for the runner-up spot. Zandon finished 3rd, while running his final furling in a very solid :12.14. He was hampered by the slow start, but he got practice rallying through traffic. This was a solid, useful first race of the year.

Trainer Chad Brown is known for teaching his horses to rate and finish, a style that has worked particularly well for him on the turf. Zandon is shifted to the Individual Herd Dynamic, and thus should be capable of employing a more IHD speed-shifted pattern of motion. But Zandon has adopted more of a GHD closing pattern of motion so far.

An example of a Kentucky Derby winner who was more IHD-shifted than his pattern of motion would suggests would be 2007 Derby winner Street Sense, who employed a deep closing GHD style despite a very strong IHD component. Street Sense was a far more accomplished two-year-old than Zandon, and was basically a finished product when he reached the Derby.

Zandon is still a work in progress, but he re-enforced his pattern of motion and took a big step forward when he won the Blue Grass Stakes (G1). Zandon broke more efficiently in the Blue Grass but still settled near the back of the pack. He moves with good authority and forward focus regardless of herd position. That versatility is rare for an IHD-shifted horse, especially in America, where speed is a big advantage, and horses are taught to express it.

Still in traffic on the far turn, Zandon got a valuable lesson in patience and how to finish strong from new rider Flavien Pratt. He gave Zandon a nudge about three furlongs from the finish. Zandon was ready to go forward.

Threading his way through traffic on the turn, then shifting out laterally in the lane, Zandin moved #3 Trademark out of his way. As he targeted the leader Smile Happy, Zandon left a wake of scattered horses behind him. Smile Happy, a strong Herd Dynamic himself, immediately sensed Zandon was coming, lifting then turning his head to look back, his forward efficiency disrupted. Zandon had the Blue Grass won before his physical body even reached the front.

Zandon won the Blue Grass going away, by 2 ½ lengths. He showed herd independence as the only horse significantly changing position through the lane.

Zandon ran his final furlong in :12.32 after running 24.77, 24.40, 24.43, 24.43 quarters. That is beautiful energy distribution. His ears were scissoring, his mind still sharp as he crossed the wire. We think Zandon will get the Derby distance with aplomb.

We are still relatively early in Zandon's development, but the raw Herd Dynamic power he has shown and the way he executed his pattern of motion in the Blue Grass suggests he might have arrived just in time.

The start of the race has been Zandon's weakest moment. We expect his starts to keep improving, but it is still a fairly random event. Due to the crowded 20-horse field, what happens when the gate opens in the Derby can be instrumental to the race's finishing order.

Zandon has been honing the tools he could need to win this Derby. He is strong in traffic, has a massive forward projection and he possesses the audacity of a seasoned veteran in the way he attacks forward space. Zandon enters the Derby confident and improving.

TAIBA

Colt by Gun Runner—Needmore Flattery, by Flatter
Bred in Kentucky by Bruce C. Ryan

Owner: Zedan Racing Stables Inc.
Trainer: Tim Yakteen

Can a colt with only two career races win the Kentucky Derby? It seems like an extreme thing to ask of a young horse, but if one were to do it, we imagine they might profile similar to Taiba, who has looked phenomenal to us so far.

Taiba is by the exciting young stallion Gun Runner, who ran a gallant 3rd in the 2016 Kentucky Derby (G1) and went on to be named Champion older male and Horse of the Year at age four. When we studied Gun Runner for the 2016 Derby, we absolutely loved his profile. We noted that he had, "an almost ideal sensory system and set of behavioral traits to optimize physical ability."

Taiba is the closest thing we have seen yet to fulfilling Gun Runner's promise. We just hope this isn't too much too soon.

Taiba sold for $1.7-million at the 2021 Fasig-Tipton Gulfstream sale of selected two-year-olds in training, and with limited tape to work with, we thought we should include that video in our review.

Taiba went one furlong in :10-1 at Gulfstream, exhibiting a nice stride, power and tremendous body control. Our experience at the two-year-old sales has taught us that many, many horses can work fast, and it means very little. The gallop-out was the most impressive part of Taiba's work. After the wire he cornered tightly and just kept going at a wonderful rhythm. He showed efficiency, focus and control.

Taiba did not make his racetrack debut until March 5 of this year at Santa Anita, a full year after the two-year-old sale. Trainer Bob Baffert, who has been banned by Churchill Downs for drug overages, was still Taiba's conditioner for the maiden race. Baffert took the blinkers off that Taiba had worn in the 2yo sale but outfitted him with a shadow roll.

When the gate opened, Taiba came out running with his head down. Looking very comfortable with what was unfolding, Taiba went into a matter-of-fact, almost casual Individual Herd Dynamic drive as he battled for the lead through an opening quarter in :22.28.

Moving with purpose and control, Taiba opened a small lead through a half mile in :45.69. Taiba was the inside horse in a three-horse duel as the field approached the stretch. The inside position generally receives the most pressure in that situation, but Taiba was moving with zero stress. If you freeze-frame the race at that exact moment, it would be hard to predict what unfolded next.

Painting a beautiful straight path down the lane, Taiba finished with furlongs in :12.28 and :12.00 as he drew away to win by seven lengths. The way he followed through and finished his first race was special.

Taiba was transferred to the barn of Tim Yakteen before the Santa Anita Derby (G1). He had the outside post in a field of six. If you watch the start of any race from the head-on view, you will regularly see the outside horse struggle with all that open space on one side of them. Some horses shy from open space, many others fall into it. Taiba broke dead straight, a sign of a really good sensory system.

Out wide, pushing for the early lead, jockey Mike Smith declined to move down toward the inside and press the leader Forbidden Kingdom. That left the door open for his stablemate Messier to slide through between. Taiba settled in 3rd place on the outside, stalking the duel through solid fractions of :22.75, :46.70 and 1:10.97. That was a great decision by Smith to encourage patience in Taiba and give him experience sitting off horses.

As Messier started to take over from a fading Forbidden Kingdom at the quarter pole, Smith was hand urging Taiba, just 1 ½ lengths back to the outside. Messier is an imposing

physical horse with a long stride. He was able to keep Taiba at bay for a furlong, but Taiba's relentless pressure cracked him. Messier subtly shied from Taiba, his tail stiffening and his head dipping toward the rail as Taiba took over.

Taiba ran his final furlong in :12.43, maintaining a strong rhythm and exuberant energy through the wire. Another furlong would not have been an issue for him.

Taiba has been so consistent from start to finish in both of his races. We are yet to see him negatively affected by the environment. His mind-to-body fluency has been perfect. He has a tenacious energy, but he moves with great purpose and control. He has been finishing his races with rare efficiency and follow-through, regardless of distance.

As much as were blown away by Taiba's tape, we think it would be wise to temper our enthusiasm based on his limited body of work. Taiba has defeated 11 horses in total.

Taiba reminds us a lot of his sire Gun Runner -- IHD shifted, with what appears to be an elite sensory system and a high-functioning, supporting Group Herd Dynamic. He is developing a versatile, IHD-speed based running style. But with just two races at two drastically different distances, there has been no chance for honing or pattern of motion re-enforcement.

Taiba is going to encounter challenges in Louisville that are far beyond what he has faced so far. If things get difficult – and they probably will – he has little associated stimulus to fall back on. Taiba will be trying to win the Kentucky Derby while learning on the fly. The potential here is unlimited, but his growth pattern is truly in its infancy.

We could hardly be more impressed after two races, but serious questions loom for a colt who is being asked to come a long, long way – physically and mentally – in just two months.

TIER 2 ★★★☆

MO DONEGAL

Colt by Uncle Mo—Callingmissbrown, by Pulpit
Bred in Kentucky by Ashview Farm and Colts Neck Stable

Owner: Donegal Racing, Repole Stables
Trainer: Todd A Pletcher

Mo Donegal is a methodically rhythmed horse, strongly based in the Group Herd Dynamic. It takes him a while to work into Individual Herd Dynamic (IHD) competing mode, but once he gets there, he is a powerful finisher.

Our comparable for Mo Donegal is Keen Ice, who interestingly hails from the same barn (Donegal Racing/Todd Pletcher). Keen Ice ran a troubled 7th in the 2015 Kentucky Derby, 3rd in the Belmont Stakes (G1), and later upset American Pharoah in the Travers Stakes (G1). We rate Mo Donegal higher than we did Keen Ice at this point in their careers, but they are a similar base Herd Dynamic.

When rallying to win the Wood Memorial Stakes (G1), Mo Donegal ran his final furlong in :11.99, the fastest finish of this year's Derby preps. How smoothly and when Mo Donegal reaches the IHD zone could be one of the keys to the stretch run of this year's Kentucky Derby.

Mo Donegal has looked like a distance horse all along, but his early and mid-race sequences haven't always gone as well as they went in the Wood.

Trainer Todd Pletcher debuted him in a 6 ½-furlong maiden race at Belmont Park on September 30. In 5th place early, Mo Donegal was losing ground on the turn, falling at least a dozen lengths behind the leader.

One thing we see in deeply rooted GHD horses, especially early in their careers, is that they aren't always ready to move when the jockey wants them to. This type of horse can be more tuned in to the environment and how herd motion is unfolding than they are to timing their move as it relates to the finish line.

Once his GHD was dialed in to the environment, he launched a rally, but his mind-to-body fluency in IHD was still a work in progress. Drifting laterally a bit and stuck on his left lead for most of the stretch run, Mo Donegal still rallied to finish 3rd. His physical fractions (:23.48, :23.98, :30.63) were that of a sustained pace, distance horse, but not a plodder.

Mo Donegal stretched out to 1 1/16 miles in start #2 and got his maiden win, but there were still growing pains. He ever so slightly stuck in the gate again at the start, but attained better early position.

Sitting in 5th place way out wide on the far turn, Mo Donegal was idling, in no hurry to advance despite jockey Irad Ortiz Jr.'s increasingly urgent strikes (more than a dozen times in total!?). Mo Donegal was going through his environmental reads, still in GHD.

Despite rider and horse initially not being on the same page, there was some solid improvement in Mo Donegal's IHD drive sequence. He changed leads in early stretch and ran down the leader to win going away, while holding a strong and straight path. He built into some legitimate IHD strength there, but even in a drive, his facial expression remained casual and his rhythm moderate. That is his true character.

Mo Donegal made his graded stakes debut in the Remsen Stakes (G2), a traditional spot for East Coast two-year-olds that are showing signs of ability and stamina. This was a really interesting race, featuring a crazy stretch duel with Zandon.

Mo Donegal was crowded at the start of the Remsen, but he held his path and did not appear troubled by the contact. That is always good to see when you're thinking about a race that can get as rough as the Derby.

In 4th place early on the rail, his tail looked so relaxed as he cruised behind the leaders, who went a slow half mile in :51.47. Mo Donegal looks extremely comfortable moving within the herd in GHD mode.

This was a much better, more patient ride by Irad Ortiz. He waited for a seam, but when none developed turning for home, he steered Mo Donegal out into the 5-path and built into a hand ride.

With Mo Donegal drifting down to the inside at Zandon, those two hooked up for a great battle from the 1/8 pole to the wire. The head-on from the Remsen had some drama! Irad was whipping Mo Donegal hard and steering him down to the rail to tighten up Zandon's space. He was leaning far to the inside and flailing with his arms. It looked like he might have contacted Zandon and/or his rider!?

The horses also bumped, but both did a great job maintaining body control. Mo Donegal won the race by a neck, but we judged the herd dynamic battle inconclusive (neither horse had thrown in the towel when the wire came up). Mo Donegal retained good environmental awareness and forward fluency through the sequence, while Zandon deserves credit for battling back after the space infraction. Zandon recovered quickly, and he was coming back on Mo Donegal at the wire.

Mo Donegal made his 3yo debut in the Holy Bull Stakes (G2). His methodical energy and drawn out sequences were not an ideal match for the speedy surface and short stretch run of the 1 1/16-mile configuration at Gulfstream Park.

Behind a wall of horses on the far turn, Ortiz took Mo Donegal out to the 4-path and asked him for his run. Mo Donegal has goods sensory skills, including space awareness, but he is a slightly heavy mover. Big lateral moves and the accompanying transitions are not his forte. By the time he got going, White Abarrio was drawing away, the win settled. Mo Donegal made good late progress to finish 3rd , and he was taking out 2nd-place Simplification when the wire came up. He never got into the winner's space, but it was a useful, solid three-year-old debut.

Mo Donegal took a very nice step forward in the Wood Memorial (G1). With rider Joel Rosario subbing for Ortiz, Mo Donegal was his usual methodical self early, in 7th place heading into the first turn. Rosario seemed to understand Mo Donegal's Herd Dynamic really well. He kept him on the inside and allowed him to slowly dial into his IHD drive, only steering and giving him minor hand urging as he was picking up horses mostly on his own. That is the ideal way to ride a horse like this.

Rosario shook the reigns at Mo Donegal approaching the quarter pole. He came through the inside of A.P.'s Secret in earl stretch, then angle out at the 1/8 pole. He still had two lengths to catch the leader Early Voting, but Mo Donegal was eating up that margin. He caught the leader just before the wire and won by a neck. It was a powerful run, and Mo Donegal did it in his typical casual yet relentless manner.

The Wood looked like a herd dynamic growth race, as it was by the far the smoothest sequence of transitions that we have seen from Mo Donegal. Rosario barely had to use the stick. Rider and horse looked perfectly in sequence.

Mo Donegal enters the Kentucky Derby on a Herd Dynamic growth pattern. His GHD and IHD were woven together seamlessly for the first time in the Wood. He has a chance to build on that race in Louisville.

The potential chinks in Mo Donegal's armor are the methodical nature of his transitions and his pattern of motion. He has the Herd Dynamic strength and sensory awareness to hold his own in a 20-horse field. But he isn't exactly light on his feet, and he doesn't have too much to spare in terms of the timing of his move. Derby traffic is a concern.

A rider who understands the horse and can make good decisions is more important for this Herd Dynamic than most. It would give us a ton of confidence if Rosario were riding him again in the Derby, but it appears he was already committed to Derby favorite Epicenter. Ortiz is world class, and hopefully he will mesh better with the most current version of Moe Donegal.

Mo Donegal is a stayer, built mentally and physically for classic distance. We see him as a legitimate contender and one who should be moving strongly at the finish.

SMILE HAPPY

Colt by Runhappy—Pleasant Smile, by Pleasant Tap
Bred in Kentucky by Moreau Bloodstock Intl and White Bloodstock LLC
Owner: Lucky Seven Stable
Trainer: Kenneth McPeek

Pleasant Smile, by Pleasant Tap

Until his loss in the Blue Grass Stakes (G1), Smile Happy was in the running for our top selection in this year's Kentucky Derby.

His two-year-old races – both impressive wins – were bursting with talent and classic promise. And although he finished 2nd to Epicenter in his three-year-old debut, we thought that was a solid enough beginning to his sophomore campaign.

But in the Blue Grass, Smile Happy suffered his first Herd Dynamic defeat. With only four career races, every one counts, especially the most recent competitive time-in-motion experience. Smile Happy enters the Kentucky Derby at a crucial juncture in his growth pattern.

Some might wonder if we were predisposed to liking him due to our connection to his sire Runhappy. Our company (THT Bloodstock) recommended the purchase of Runhappy to our then client James McIngvale at the 2013 Keeneland September yearling sale.

At the time, we were trying to help Mattress Mac win the Kentucky Derby. Instead he got a Champion Sprinter and one of the most talented horses of his era. Due to McIngvale's commitment to drug-free racing, Runhappy competed without the benefit of any raceday drugs. That move was in stark contrast to many of the horses Runhappy ran against. He was so good, it didn't matter.

Runhappy got off to a slow start at stud with his first crop in 2020, but he popped a pair of graded winners last year with Smile Happy and Vosburgh Stakes (G2) winner Following Sea and was a top-5 second-crop sire.

Smile Happy inherited Runhappy's love of competition, but he has more natural stamina, probably thanks to the female side of his pedigree. Trainer Ken McPeek proceeded directly to two-turn route racing with Smile Happy, debuting in a 1 1/16-mile maiden race at Keeneland on October 29.

Following an ok break and a light bump at the start, Smile Happy was held up in traffic. Physical impediments did not deter his forward extension. Rider Brian Hernandez Jr. applied the brakes a few times to convince Smile Happy to wait before advancing. This colt definitely had an instilled sense of competitive urgency.

As soon as Hernandez gave his cue, Smile Happy picked up his rhythm and split horses on the far turn. He moved out to the 3-path, inhaled the leaders and galloped off to win by 5 ½ lengths. It was a beautiful sequence for a debut race. He physically accelerated while showing signs of multi-tasking in his ability to interpret the environment. His sensory transitions were clean. The way he was moving independently of the horses around him really stood out to us.

We sense a slight shift to the Individual Herd Dynamic with a very nice Group Herd Dynamic base that looks highly functional and competitively geared.

Smile Happy went up in class to the Kentucky Jockey Club Stakes (G2) at Churchill Downs in his second start. Breaking from the 6-post in a good field of 11 two-year-olds, we saw that he breaks in GHD, then transitions into competitive mode. He had the environment read after two strides.

Smile Happy has a very strong presence to our eyes, even on video. He was casually fighting for his space heading into the first turn while posted 3-wide in 5th place. Whether covered up or in the clear, Smile Happy is not relying on the other herd members to determine his rhythm or direction.

Posted 4-wide around the far turn, he gradually turned up the intensity, then smoothly changed leads after entering the stretch widest of all. His mind-to-body fluency looked excellent. In the lane his efficient stride and steady IHD energy took over. He won by 3 ¼ lengths, his tail relaxed. That was a very impressive two-race stack to begin his career.

Smile Happy returned at age three in the Risen Star Stakes (G2). In 8th place early in traffic, he was exhibiting a little bit of tail stress. We think he was feeling the strong competition around him.

Smile Happy was in traffic almost the whole race. He split horses, moving through a hole that was wanting to close in the lane. He anticipates the movements of other horses very well. Coming through on the inside in late stretch, he never got the opportunity to target the runaway winner Epicenter, but he beat Pioneer of Medina and Zandon to the wire.

Smile Happy ran his final three furlongs in a strong :36.47, and he finished with good emotional energy. His time-in-motion profile looks promising for the move to classic distance, which makes what happened in the Blue Grass Stakes (G1) all the more curious.

Lanerie asked Smile Happy for speed at the start, but he got caught 4-or-5-wide around the first turn. Moving into 3rd place on the backstretch, Smile Happy got a very wide but clean trip. Everything looked good as he swept to the lead in early stretch and shrugged off a bump from the tiring pacesetter Emmanuel.

It was Smile Happy's race to win at the 3/16 pole, but he did something totally uncharacteristic. He lost his forward focus, veering inward then turning his head back to try to see what he no doubt could feel – Zandon powering through the pack.

Smile Happy had his motion disrupted, and although he made a token effort to keep up with Zandon, it was short-lived. With Zandon powering away from him inside the final 1/16 of a mile, Smile Happy flipped back to his left lead. It was the first time we saw Smile Happy defer to another horse and lose forward efficiency.

Possible excuses for that loss include ground loss, physical fitness or even a minor injury, but the timing of when Smile Happy lost his forward efficiency was perfectly aligned with Zandon rushing at him from his oblique.

Smile Happy has many Herd Dynamic traits of a Derby horse. He is athletic minded, moves independently of the herd, and has a strong time-in-motion profile (notwithstanding the Blue Grass).

He can still get back on that path, but Smile Happy does enter the Derby on a stalled growth pattern. How he responds to that setback is not entirely predictable. We wish he had another race before the Derby, because what happened in the Blue Grass can carry over to his next race. The Derby will be the determining factor as to the trajectory of his growth pattern.

And the horse that took him out, Zandon, will be in the gate again. Smile Happy has a chance to reverse that outcome in Louisville. We put him on the list of horses who could win this Derby, but one who has some major questions to answer.

WHITE ABARRIO

Colt by Race Day—Catching Diamonds, by Into Mischief
Bred in Kentucky by Spendthrift Farm LLC

Owner: C2 Racing Stable and La Milagrosa Stable LLC
Trainer: Saffie A. Joseph Jr.

White Abarrio is an extremely focused, intense colt. He also has some of the quietest body language and efficiency of movement that we have seen from a horse with this much fire inside his belly.

White Abarrio is one of two horses in this year's Derby by the Tapit stallion Race Day. Race Day stood in Kentucky for five years but until now hasn't produced any major horses. Race day was exported to Korea in 2020.

After selling for just $7,500 as a baby, White Abarrio delivered a beautiful :10-2 work at the 2021 Ocala Breeders' Sales Co.'s March sale of selected two-year-olds in training. He sold for just $40,000 to trainer Carlos Luis Perez. White Abarrio was still in Perez' barn when he debuted at Gulfstream Park on Sep. 24 going 6 ½ furlongs.

He broke ok from the rail – just the slightest delay – then cruised up the inside behind the leaders. Running his first quarter in :22.57 with ears pinned, he showed off his turn of foot and Individual Herd Dynamic (IHD) slant. He also looked very comfortable in close quarters.

White Abarrio split the lead horses on the far turn through a half mile in :45.18, then drew off to win by 6 ¾ lengths. His body control, space awareness and mind-to-body fluency looked superb for a two-year-old on debut.

White Abarrio was sold privately after his first race and transferred to trainer Saffie Joseph Jr. For his first race against winners, Joseph ran White Abarrio back in a NW1X race going 1 mile on the dirt at Gulfstream. Again we saw the slightest delay at the start – it took him 1-2 steps to get his feet under him – but then he smoothly accelerated to the lead.

There is a significant IHD slant here, but there is no rush or panic to this horse's movements. His ears are almost always pinned, but he runs with a very relaxed rhythm. It's a very unique combination.

White Abarrio won clear by 4 lengths, totally focused and within himself. The internal fractions of the race demonstrated White Abarrio's ability to save energy early and dispense it late. He motored home the final quarter in :23.63; that is fast for an IHD horse who was on the lead.

White Abarrio experienced Churchill Downs for the first time last November in the Kentucky Jockey Club Stakes (G2). That was also his first two-turn race. He didn't win, but he passed some tests.

He broke well and sat just behind the leaders. There is definitely some Group Herd Dynamic (GHD) versatility displayed in White Abarrio's pattern of motion. He is content to sit behind the lead horses.

White Abarrio got shuffled turning for home and was briefly stuck in traffic. Steered outside, he rallied to finish 3rd, beaten 6 lengths by Smile Happy. White Abarrio was still projecting forward at the wire of this 1 1/16-mile race. It was a competitive showing, and encouraging to see him perform on the ship to Kentucky.

White Abarrio made his 3yo debut back at his base in the Holy Bull Stakes (G2). Sent hard by Tyler Gaffalione at the start, White Abarrio broke like he was shot out of a cannon. He certainly intensified in reaction to his rider's command, even stiffening his tail. That's the most emotion we have seen White Abarrio show! (He was slightly mad/intense.)

White Abarrio quickly got over from the 8-post and sat 2nd, just off the outside hip of the pacesetter Galt. It was an easy trip. He drew even with the leader through 6 furlongs in a tepid 1:12.01, then ran his final 5/16 in a very good :30.77. He was in a full drive as he drew away to win by 4 ½ lengths over Simplification and Mo Donegal. White Abarrio shows no herd attachments at all. He releases cleanly and holds a beautiful straight path by himself in open space.

Gaffalione asked White Abarrio for speed again at the start of the Florida Derby (G1). That seems to be part of their game plan for him. One of the good things about White Abarrio's Herd Dynamic is that we never see him overdo things. That means he can be asked fairly aggressively to do something but his output is still likely to be controlled.

The pace of the Florida Derby was fast and contested from the outset. White Abarrio was crowded by Pappacap heading into the first turn. White Abarrio not only held his spot, but he showed almost no reaction to the space infraction. This is a confident, professional horse who doesn't overreact to stimulus.

He sat a stalking trip from up close in 5th position. Moving 4-wide on the far turn, he inched ahead, eventually taking over around the 1/8 pole. The inexperienced Charge It tried to run at White Abarrio through the lane, but couldn't match White Abarrio's focused intensity or efficiency.

White Abarrio did some minor weaving late in the Florida Derby, stealing some looks back to see if any more challenges were coming. That lateral drifting could be a sign that he was approaching his distance limit in this fast-paced 1 1/8 miles. We thought he stayed on mentally, but we note the race chart indicates White Abarrio ran his final three furlongs in :39.69 (not fast).

White Abarrio has a ton of interesting traits, led by his quiet but competitive nature. He is a matter-of-fact mover who seems barely affected by changing environments. If he is carrying any stress in his body, he sure doesn't show it on video.

From the standpoint of sensory efficiency, White Abarrio's races have been sparkling clean. He is forward-minded, intensely focused and has great body control. His mental aptitude and physical abilities are well synchronized.

In our experience, additional distance does not help White Abarrio's Herd Dynamic type, and that is probably the biggest concern for this profile. It is usually a matter of how far they can go before time-in-motion begins to dull their output. We think 1 ¼ miles represents a hurdle for White Abarrio, but his efficiency helps his chances of being an outlier.

A natural athlete with a focused, unique personality, White Abarrio looks like a legitimate contender in this Kentucky Derby.

ZOZOS

Colt by Munnings—Papa's Forest, by Forestry
Bred in Kentucky by Barry & Joni Butzow

Owner: Barry & Joni Butzow
Trainer: Brad Cox

Zozos is not a complicated read from the Herd Dynamic perspective.

Strongly shifted to the Individual Herd Dynamic (IHD), Zozos is a bit one-dimensional through three races, but his profile screams "athlete" to us. And everything is headed in the right direction.

Zozos debuted at Fair Grounds on January 23 in a productive 6-furlong maiden race. Breaking from the 7-post in field of eight, he left the gate with good body control and was sitting 4th on the outside early, about 4 lengths off the lead.

Posted very wide all the way around the far turn, Zozos intensified as he started closing ground on the leader. Our immediate impression was that Zozos has a strong emotional energy and a matter-of-fact presence to him.

Zozos spun into the lane very wide, in an interesting position from the standpoint of sensory awareness. There were three horses to his inside, including #6 Stayed In For Half, who was surging between horses. On Zozo's outside oblique, #8 Strong Quality was rallying. And on Zozo's back, rider Colby Hernandez was trying hard to get his mount to change leads.

Zozos weaved a little through the stretch, his focus bouncing between those stimuli. He never did change leads, but he just kept grinding forward! He ran down Stayed In For Half to win by a half length, while holding off Strong Quality. Both of those opponents won their next start and subsequently ran well against winners.

Mentally, that win wasn't easy for Zozos, and it wasn't a "pretty" win. Most IHD-slanted horses are stronger against a single target or at least a group of targets clustered on one side of their body, especially early in their careers. But Zozos showed us some mental toughness in a difficult situation, and he completed his task.

Zozos made his second start in an allowance race at Oaklawn Park while stretching out to 1 1/16 miles. He drifted inward slightly at the start and bumped lightly. Zozos has some intensity to his personality, and that can lead to minor losses of body control after being forced to stand still for a while, such as in the gate. But his overall sensory awareness looks solid and forward. Zozos has the ingredients to be a good gate horse.

After breaking from the #9-post, he got over to the 2-path into the first turn. His forward projection in traffic looked good, as did his space ownership.

The leader was going slow, but Zozos was content to sit just off of him, his ears flopping while tracking very strongly. Zozos drew even through 6 furlongs in a slow 1:14.25. It took him a few strides in the lane to change leads for new rider Florent Geroux, but then he took off.

Zozos ran his final 5/16 in :30.13 as he distanced the field by 10 lengths! His release from the herd was clean, and his forward projection into space looked great. He won with authority. That was a very nice step forward off the debut.

Zozos faced Derby favorite Epicenter in the Louisiana Derby (G2). He finished 2nd, but it was another Herd Dynamic growth race.

Zozos broke sharply and went to the lead. With Pioneer of Medina pressing him, and Epicenter sitting behind them on the inside in 3rd place, Zozos set solid fractions of 23.27, :47.35 and 1:11.69. That was a significantly faster pace than his previous race.

His sensory lead changes also improved another notch, as he transitioned smoothly into his final IHD drive. Zozos was holding Pioneer of Medina at bay, but when Epicenter emerged, it was clear he had the superior stride and turn of foot.

We like how Zozos reacted to being passed – he re-engaged, coming out slightly into Pioneer of Medina's path and trying to re-rally on Epicenter in vain. Zozos showed us mental fortitude and grit even when passed. We see no defeatist attitude here.

Zozos' mental capacity and physical tools are well woven together. Mentally, we think 1 1/4 miles could be within this hard-trying colt's range, though this is not a Herd Dynamic (or pedigree) that benefits from more distance. It is a matter of how much further he can go before it becomes a disadvantage. It helps that, for a horse with such a strong emotional energy, Zozos has good body control and does not burn excess energy. He definitely looks like an outlier.

Zozos has been climbing the Herd Dynamic ladder nicely through three races. He is expressing his IHD energy and physical speed more powerfully with each start. The majority of his growth has been housed in the forward aspect of his IHD, but his sensory lead changes also have improved with every race.

This Herd Dynamic type typically wants to be near the front of the herd, but we do sense a little versatility in Zozos. With his good gate skills and strong space ownership, we see him grabbing a spot somewhere near the front of the Derby herd early.

Zozos is cut out to be a racehorse – he loves competing – and we sense a legitimately strong, improving Herd Dynamic here.

MESSIER

Colt by Empire Maker—Checkered Past, by Smart Strike
Bred in Ontario by Sam Son Farm

Owner: SF Racing Partnership
Trainer: Tim Yakteen

Never worse than 2nd in six lifetime starts, Messier is an undeniable talent. On video he looks like a big, strong colt with a long, powerful stride.

But as we went through his six career races, we found ourselves wishing he was a little further along in Herd Dynamic growth curve.

Messier is one of two horses in this year's Derby who were transferred away from trainer Bob Baffert (drug overages) in order to become eligible for this year's race. Former Baffert assistant Tim Yakteen took over his training – along with stablemate Taiba -- shortly before the Santa Anita Derby.

Messier has some sensory efficiency issues that Baffert had been trying to correct, going back-and-forth with using blinkers. In our opinion, Baffert is one of the best trainers in terms of how he uses blinkers to modify a horse's Herd Dynamic.

Messier doesn't strike us as an early two-year-old type, but he debuted fairly early, in a 5-furlong sprint at Los Alamitos on June 27. Wearing blinkers and a shadow roll, he drifted in slightly at the start and bumped.

Messier has a significant shift toward the Individual Herd Dynamic, and that was apparent in the debut. He found an IHD cruising gear while in 4th place on the outside early. In behind horses in the lane, with the leader swerving in front of him, Messier was exhibiting some tail stress. Horses exhibit tail stress for various reasons, and they can be physical or mental. In Messier's case, it appears he does it when he is uncomfortable with his surroundings or when he is struggling to interpret a stimulus.

Messier rallied to finished 2nd in his debut, beaten just a length. We thought he showed some good assimilation during the race, but that 5-furlong trip looked too condensed for him.

Messier needed a little time after the debut, but he showed

some good progress when he returned at Santa Anita in a 6-furlong maiden race on Oct. 22

Messier drifted inward at the start again, but went right into stride after that. He was moving with a nice, purposeful rhythm as he cruised into 2nd place. After tracking a :21.82 opening quarter, rider Flavien Prat nudged on Messier, who went from two lengths back to a 1-length lead in less than a furlong.

His mid-race transitions looked good, and there is no doubt a lot of power in his stride. After going a half mile in a fleet :44.61, Messier drew away to win by 6 ½ lengths. He was being eased at the finish. He was again exhibiting tail stress in the lane, likely in reaction to Prat trying to slow him down. Messier has the raw speed of a sprinter but the rhythm of a router.

Baffert stretched him to 7 furlongs in the Bob Hope Stakes (G3) at Del Mar and took the blinkers off. Breaking from the rail in just a 4-horse field, Messier was last away from the gate. Blinkers or not, Messier often lacks efficiency for those first two strides out of the gate, but he finds it fairly quickly. Messier generally gets better with more time in motion.

Messier was 4 ½ lengths back early, but he gradually reeled them in, attacking 3-wide on the far turn. His head and neck looked just a little rigid as he approached the leader in the lane, but his physical momentum was plenty good enough. He won off by 3 ½ lengths while being eased again. His physical fractions were very fast early and slow late (:22.17, :21.66, :25.48, :13.44).

Baffert probably didn't like how he came out of the gate in the Bob Hope, because the blinkers were back in the Los Alamitos Futurity (G2). This was Messier's first two-turn race and featured another small field (5 horses).

Messier broke ok this time and settled in 3rd place while under a hold, just a length off the lead. Messier was moving with a

fairly casual rhythm early, then he turned up the heat while advancing wide on the far turn.

Messier poked his head in front around the 5/16 pole, but he was soon joined by two challengers to his outside. It was four horses across the track, with Messier in the 2-path as they entered the lane. His sequence from there to the wire was a little bit sloppy.

Messier's head came up a little and his neck tightened as Slow Down Andy challenged him from the outside. It was only after Slow Down Andy gained a small advantage that Messier fought back, briefly re-taking the lead. Slow Down Andy's body control was erratic through the stretch, and it looked like Messier's interpretation process was a little thrown off by the scenario. Messier ran in spots through the lane as he finished 2nd , beaten 1 length.

The blinkers came off again in the Robert B. Lewis Stakes (G3). Messier shuffled his feet slightly when the gate opened but he got out well enough to press for the lead. We like his awareness better without the blinkers. He seems more confident without them.

Messier's big long stride never looked better than in the Lewis. He had a half-length lead through 6f in 1:11.32, then left the field to win by 15 lengths! There were no Derby types to oppose Messier in that five-horse field, but he did finish on a really nice straight path while by himself in space. That was his best looking race.

Messier's final prep for Kentucky came in the Santa Anita Derby, and we wanted to see him build on his big win, but instead we saw him take a little step back while facing better competition in another small field (6 horses).

Messier was standing a little head-high, slightly withdrawn in the gate, and his body control was off at the start. He was displaying a little more emotional stress in the Santa Anita Derby than we had seen from him recently. That is likely the result of better competition.

Although he broke slowly, he had the time and space to recover. He accelerated between horses to go up and push Forbidden Kingdom. Those two battled through six furlongs in 1:10.97, with Messier's stablemate Taiba sitting off the duel in 3rd place.

Forbidden Kingdom threw out his anchor – he might just be a sprinter/miler, or he might have had a physical problem – and Messier took over the lead. Almost immediately, Taiba was mounting a challenge to his outside. Messier held him off for a little while, but Taiba looked like the more athletically free-flowing horse.

Messier's head and neck stiffened just a little, and he started showing additional tail stress as his moment of surrender approached. His head even tilted in toward the rail a little bit, away from Taiba's space, and his forward aspect withdrew. Taiba, who was coming off a 6-furlong maiden debut, beat his far more experienced stablemate by 2 ¼ lengths.

Messier has excellent physical talent and an underlying competitive nature that is sometimes compromised by sensory issues. He is on the edge of being a really strong horse and still has forward potential to get better.

An interesting comparable for Messier's Herd Dynamic is 2020 Kentucky Derby winner Authentic, whom we under-estimated and had ranked 7th going into his Derby. That was the year the Derby was held in September, which we believed changed the race's timeline of Herd Dynamic development.

Nevertheless, Messier has never raced outside Southern California, and even facing shallow fields, we see little cracks in his ability to process stress. Messier's physical talent gives him all the potential in the world, but he still needs to connect a few dots to fulfill it.

CHARGE IT

Colt by Tapit—I'll Take Charge, by Indian Charlie
Bred in Kentucky by Whisper Hill Farm LLC

Owner: Whisper Hill Farm LLC
Trainer: Todd Pletcher

Charge It enters the Kentucky Derby with just three lifetime races and a Herd Dynamic growth curve that is still in its very early stages.

We see bigtime potential here in terms of speed, stamina and maybe even Herd Dynamic power. But with a still undefined pattern of motion and quite a few things that need tightening up – particularly his transitions in Individual Herd Dynamic -- we wonder if the Derby is coming up too soon for him.

Charge It debuted at Gulfstream Park on January 8 in a 1-turn mile. His body lifted up slightly at the start, but then he was moving with very good power up the rail, joining the leader Volcanic. With that foe to his outside, Charge It's rhythm remained moderate to methodical as the pair set very solid fractions of :46.13 and 1:10.58. They left the other horses 10+ lengths behind.

Charge It drifted out in the lane and bumped Volcanic a couple times. Volcanic had a big experience edge, as he was making his 4th career start, but his forward efficiency looked a little off too, and he was exhibiting tail stress. It was a fast race for the class level, but both horses looked tired late, neither moving with great urgency or efficiency at the wire.

Volcanic (who went on to finish 3rd behind Classic Causeway in the Sam F. Davis [G3] in his next start) prevailed by a half length. It was 12 ½ lengths back to third place.

It was a good sign when Charge It returned just over a month later in another 1-mile maiden affair. He had the #10 post in a field of 10, and he broke efficiently, showing steady early speed. Jockey Luis Saez used the entire length of the chute and backstretch to work his way down to the 2-path. That seems to be Charge It's natural way of covering ground -- purposeful, methodical forward motion and gradual lateral movements.

To us, Charge It appeared to be operating within the Group Herd Dynamic even though he was on the lead. He has a nice, high-revving GHD and good physical cruising gears and rhythm. It is the most impressive part of his Herd Dynamic currently.

Charge It led by 1 ½ lengths through six furlongs in 1:11.45. He held a nice straight line through the lane, looking comfortable by himself in open space. There were never any urgent moments, and he did not have to engage his IHD as he drew off to win by 8 ½ lengths. His even energy distribution in his maiden win bodes well for more distance -- :24.24, 23.23, 23.98, 24.10.

Charge It qualified for the Kentucky Derby via a 2nd-place finish in the Florida Derby (G1). He broke slightly inward at the start and then was bumped by Pappacap. Charge It bounced off that contact and recovered quickly. Charge It looks well-made, big and strong as a tank on video.

With Saez asking him for a little early foot, Charge It worked his way inside up to 4th place. Covered up, just behind a solid pace, Charge It got a good trip in the Florida Derby.

There was still a half mile to go when pace setter Classic Causeway threw out his anchor, and that was when Saez started riding Charge It. White Abarrio had been a few paths outside of Charge It for most of the race, and he got the jump on his less experienced rival.

Charge It transitioned into his steady, methodical grinding IHD. He spun into the stretch in the 4 path, then drifted out to the 6-path when Saez showed him the whip. Under an urgent right-handed whip from Saez, Charge It over-corrected, bearing inward several paths and brushing Pappacap.

At that point Charge It was nearly in behind White Abarrio, and the leader made it worse for him by drifting out a couple

paths. Saez steered Charge It back into the clear, but with the wire approaching rapidly, Charge It was unable to regather his forward efficiency and flipped back to his left lead in reaction to that path infraction. White Abarrio won by 1 ¼ lengths.

The Florida Derby tape tells us that Charge It's competitive edge, especially his transitions in IHD, need additional sharpening via experience. He also is still learning how to react to competitive urgency from his rider.

Charge It's GHD cruising gears are wonderful. They put him in a position to win the Florida Derby, and they could be extremely useful at Churchill Downs. But he is still learning how to follow through in IHD. That could be where he gets better and takes the next step, or it could be a weak spot. The growth pattern is still undefined.

There is potentially a powerful Herd Dynamic brewing here. But in order to compete for the win in Kentucky, Charge It is going to have to take a step forward in the most challenging environment he could face. For the great majority of horses, a learning experience is what lies ahead.

CYBERKNIFE

Colt by Gun Runner-Awesome Flower, by Flower Alley
Bred in Kentucky by Kenneth and Sarah Ramsey

Owner: Gold Square LLC
Trainer: Brad Cox

Cyberknife is a textbook study in how sensory efficiency can affect performance and how a horse can work through mental issues, at least to some degree.

A strongly built, fast horse with a big stride, Cyberknife has the physical tools. His mentality, however, has presented some challenges.

Sensory issues cost Cyberknife the win in his first two starts at age two.

Trainer Brad Cox outfitted Cyberknife with blinkers in his first career race. Horses with sensory interpretation issues often will be outfitted with blinkers at some point in their careers. Based on how Cox has managed Cyberknife and watching how jockey Florent Geroux has learned to ride him since hopping onboard in start #3, we think this team has a pretty good grasp of what they are dealing with.

But it was Martin Garcia who rode Cyberknife in his first two races. In the debut, Cyberknife bore out at the start. His mind was revving fast, his ears pinned as he chased the pacesetters early. This is a very intense horse in competition.

Driving hard into forward space, Cyberknife got a little reckless as he took out the leader Hoist the Gold, literally. Cyberknife drifted inward, delivering a hip check to his opponent in early stretch. Cyberknife won by a half length but was disqualified. Our positive observations from the debut include signs of a deep well of emotional energy, athletic grit and some serious physical speed. The negatives included poor space awareness and body control issues.

Cox took the blinkers off in Cyberknife's second start. He broke high-headed, his energy going up instead of forward during the first few strides of the race. Stuck behind horses early, Garcia steered him outside. Cyberknife's slightly exaggerated lateral move to the outside was another clue to his psychology – exaggerated physical movements are usually a sign of a gap in a horse's sensory interpretations.

With extended time-in-motion, Cyberknife's head tends to comes down more. That is the positive stress-filtering process that occurs over distance.

He spun into the lane three-wide in 3rd place, just outside the leaders. He had the win in his sights, but on his approach, he cocked his head to the outside, away from the target stimulus. Cyberknife was over-reactive to the whip. Under a left-handed whip from Garcia, Cyberknife drifted out. When Garcia went right-handed to his hip, Cyberknife bore in. On the edge of losing body control, he finished 2nd, beaten a half length.

Cyberknife broke his maiden in start #3 when he was stretched out further to 1 1/16 miles. This was also Florent Geroux's first time riding Cyberknife in a race. It understandably took him a little while to get to know Cyberknife, but we think Geroux fits this horse very well.

When the gate opened, Cyberknife stumbled, his head going halfway to the ground. His recovery looked frantic as he started chasing in early traffic. Geroux took a big hold and got his mount to relax in pace-stalking mode.

Cyberknife looked great turning for home as he cruised up to the front of the herd. Even with his head cocked to the outside, away from the other horse, he opened up a 2 ½-length lead. But in open space with horses trying to chase him down, his forward efficiency started to crumble. He bore out several paths just before the wire, in response to Geroux's left-handed whip. He won by a diminishing half length. The maiden win contained progress, but he was still struggling with mind-to-body fluency.

The return of blinkers and a move to graded stakes company in the Lecomte Strakes (G3) proved to be too big of a jump for Cyberknife in start #4. He came out of the gate straight, but his head carriage looked a little high as he tracked the pace from 6th place early.

He tried to launch on the far turn, but was caught 5-or-6-wide all the way around. He was hanging in the lane, getting pushed around a little while floating laterally. He finished 6th, beaten 10 ½ lengths. It was a tough first race vs. winners.

We liked the buttons Cox pushed after the Lecomte. He kept Geroux on, took the blinkers off, kept Cyberknife at a route but dropped him in class to a NW1X allowance race. He broke straight from the gate. He was exhibiting tail stress at the start, but his body control and efficiency were better. We would rather see a horse diffuse stress through the tail like that than via awkward head carriage and/or frantic movements.

Cyberknife's head was still cocked away from the horse we was battling in the lane, but he won by three lengths. This was a useful developmental race, and we also think it might have been a lightbulb moment for Geroux. We noticed he didn't go to the whip so strongly in the lane. He only whipped him once, and he was mostly steering and encouraging him.

When you have a horse that is prone to overreacting to stimulus, as long as he is moving efficiently forward, you don't want to introduce too many other sensory inputs. Anything that feels too sudden or strong to a horse like this can cause an overreaction.

The blinkers stayed off for the Arkansas Derby (G1), where there were more growing pains but also a big breakthrough.

Cyberknife got out of the gate ok, but he was lugging in, contributing to some traffic trouble for a couple horses behind him, including the filly Secret Oath.

As quirky as Cyberknife can be, he sometimes attacks space and owns it surprisingly well, especially during the middle portions of his races.

He moved up to 4th place early, and then just about a half mile into the race, Cyberknife and Geroux launched. They moved to the inside, bumping one rival, then muscled their way between horses all the way up to the lead position. His space ownership and forward drive were impressive.

That proved to be the winning move – Cyberknife would prevail by 2 ¾ lengths -- although again there was inefficiency when he reached open space in the lane.

When Cyberknife drifted laterally off the rail he had horses hovering just behind him on both sides and open space in front of him. Looking uncomfortable, Cyberknife jumped several paths to the outside. His forward extension was waning as he crossed the wire. Had a strong challenger emerged, we doubt he would have been able to defend his position.

Cyberknife improved in the Arkansas Derby, and now he has a chance to stack growth races on top of each other.

We believe in his physical ability, his fighting spirit, and his depth of emotional energy, but Cyberknife is still a horse with gaps in his sensory interpretations, prone to inefficient physical movement. That makes him a big risk to underperform in the Kentucky Derby.

BARBER ROAD

Colt by Race Day—Encounter, by Southern Image
Bred in Kentucky By Susan Forrester and Judy Curry

Owner: WSS Racing LLC
Trainer: John A. Ortiz

Barber Road is nowhere near the biggest, fastest or most talented colt in this year's Kentucky Derby.

Nor does he have a rich pedigree. His sire Race Day stood in Kentucky for five years, was largely ignored by American breeders, and sold to South Korea in 2020. Barber Road himself was offered in a $30,000 maiden claiming race in his second career start (he was not claimed).

But this colt fought his way onto the Kentucky Derby trail this winter at Oaklawn Park, where he ran in all four of that track's Kentucky Derby preps. He didn't win any of those races, but he never finished worse than 3rd. And two things really stood out in Barber Road's tape – efficiency and heart.

Barber Road has a very good mixture of Group Herd Awareness (GHD) and Individual Herd Dynamic (IHD) grit. He leaned more on his IHD and natural speed in his first four races when he was two years old, often pressing or setting the pace, even in sprint races.

Normally when a horse shows speed sprinting, that attribute is amplified at longer distance, where the pace is slower. But when Barber Road joined the Kentucky Derby trail at age three, he transitioned to a more sustained, later running style. Our theory is that the bigger fields, stronger/faster Herd Dynamics, and longer distances drew his GHD skillset to the surface and led to development in that area.

Barber Road strikes us as a very intelligent horse. His controlled, efficient movement even in herd chaos tells us that he can multi-task and survey his environment very well.

His second-place finish in the Smarty Jones Stakes was not flashy, but it demonstrates one of the things we really like about Barber Road's mentality. He never stops trying to advance.

Having ridden up into a pocket behind the leaders turning for home, Barber Road had to fight through the slop for a clear lane between horses. The winner Dash Attack sailed by him on the outside, but Barber Road continued his sequence, found room and rallied to finish second.

Barber Road is a good gate horse, but in the Southwest Stakes (G3), he delayed just slightly at the start and then got bumped back to last place early. Despite being very wide on both turns, he closed over 10 lengths to finish 2nd behind Newgrange. Barber Road was second best, but he kept plugging along, undeterred.

The Rebel Stakes (G2) is our favorite effort from Barber Road. After being shuffled in traffic early, he made an early advance up the inside. Blocked for a while, he was eyeing a hole in the stretch that opened, closed, then opened again. He split horses late and was finishing with good energy as the 1 1/16-mile short wire came up. He finished third, beaten a half length, but we thought he was best. Longer distance could help this horse.

In the Arkansas Derby (G1), Barber Road looked a little nervous when the gate opened. He can probably feel the pressure of those higher Herd Dynamics. It's ok for a horse to get nervous, afraid, etc... The important thing is how do they react after that emotion hits them? Barber Road melted into the herd, defaulting to his GHD, and gradually found his best competitive nature through time-in-motion.

Running in traffic for most of the race, bumped and blocked, he was rallying behind a weaving Cyberknife. He caught the good filly Secret Oath (who made a big wide move on the far turn and was hanging late) just before the wire. Barber Road still had emotional energy at the wire and on the gallop-out.

The Kentucky Derby will be a big step up for Barber Road. He hasn't faced any of the top tier three-year-olds, and the races he has been in were not the fastest of this year's Derby preps. But Barber Road has shown us that he doesn't get emotionally beat down by adversity. His competitive nature and ability to manage and navigate environmental chaos are great traits that play especially well in this race.

We don't envision him winning the Kentucky Derby, but we would not be at all surprised if Barber Road comes running late to snag a minor award. He is the type of horse we love to root for.

RATTLE N ROLL

Colt by Connect—Jazz Tune, by Johannesburg
Bred in Kentucky by St. Simon Place

Owner: Lucky Seven Stable.
Trainer: Kenneth G. McPeek

Rattle N Roll needs two defections to get into the Kentucky Derby. It probably won't happen, but we want to keep this horse in mind, wherever he runs next.

Rattle N Roll is a Group Herd Dynamic closer with a really nice, balanced, athletic profile.

He completed a growth pattern at age two when winning the Breeders' Futurity (G1). Yes, it was a soft G1 win -- the field was just ok and he got a dream pace setup -- but his pattern of motion execution was excellent.

Rattle N Roll has a bunch of good traits, including the ability to conserve emotional energy while in GHD. His forward projection and target focus begins while he is in GHD rating mode and he can follow through powerfully in IHD.

His efficiency traits look good too. Rattle N Roll scores well on sensory clearance and mind-to-body fluency. For a GHD-based horse, he is purposeful moving into space and shows no herd attachments. His pattern of motion execution was beautiful in his maiden win and in the Breeder's Futurity.

Like any good two-year-old, Rattle N Roll will need to continue to develop physically and get faster at age three if he is to succeed in graded stakes. Maybe he simply hasn't trained on at age three. But nothing has gone right for him this year.

He tired in his 3yo debut in the Fountain of Youth (G2), a race that he came off a 5-month layoff. The 1 1/16-mile layout at Gulfstream was always going to be tough for his running style, but he never looked comfortable with his position.

Trainer Kenneth McPeek experimented with equipment in his next two starts. Rattle N Roll finished 4th in the Louisiana Derby (G2) when outfitted with a shadow roll. We saw signs of behavioral overcompensations in that race video (poor start and the shadow roll changed his head carriage).

Rattle N Roll was outfitted with blinkers in the Blue Grass Stakes (G1). He tried to rally 6-wide around the far turn, burned out and hung while finishing 6th. McPeek has him listed as Blinkers Off for the Derby, and we strongly endorse that move.

It might actually be better if Rattle N Roll can get an interim start before his next serious race, as his growth pattern is currently disrupted. We'd be guessing if we tried to say where he is going to pick up now, but there is still a chance for a turnaround here.

We saw video of his workout at Churchill Downs on April 30, and we liked what we saw from the sensory standpoint. The equipment was stripped off, and his big natural forward extension was back. That's a positive sign.

CLASSIC CAUSEWAY

Colt by Giant's Causeway—Private World,
by Thunder Gulch
Bred in Kentucky by Kentucky West Racing LLC & Clarke
M. Cooper Family Living Trust
Owner: Kentucky West Racing LLC & Clarke M. Cooper
Trainer: Brian A. Lynch

Classic Causeway was once considered to be one of the top choices to wear the roses in 2022, but after a disastrous run in the Florida Derby (G1), he was pulled from the Kentucky Derby by trainer Brian Lynch.

Then, less than two weeks out from the big race, Lynch announced a change of heart. He said it is a lifelong dream of the colt's owners to have a Derby horse, and Lynch didn't want to deny them that opportunity based on one bad performance.

Classic Causeway is now considered to be a huge longshot. Our view is that he was probably a little flattered by beating weak fields at Tampa earlier this year, but we like him too much to call him a throw-out. There is undeniably a very good Herd Dynamic here.

Classic Causeway debuted in a 7-furlong race at Saratoga on September 4. He came out of the gate fast, but smooth and in control. Shifted strongly to the Individual Herd Dynamic (IHD), Classic Causeway went to the lead. He held a 1 ½-length advantage through a half mile in :45.48. He appeared fast-cycling but very purposeful. His tail was loose and his ears were relaxed, occasionally articulating. He was operating very efficiently at high speed.

He hit the 6-furlong mark in 1:09.78 and finished 7f in 1:22.67 while 6 ½ lengths ahead of the field. It was an outstanding debut win.

Classic Causeway jumped up in class and stretched out to 1 1/16 miles in his second start in the Breeders' Futurity Stakes (G2) at Keeneland. He had the 13-post in a 13-horse field. After he broke outward at the start, he found himself in the 16-path and facing a short run to the first turn.

Sent hard by jockey Jose Ortiz, Classic Causeway kicked up his urgency and just managed to clear them all and get over. Judging by the traffic pileup behind him, there might have been a few words uttered Ortiz' way by the other jockeys!

Classic Causeway had to run a :22.81 opening quarter to execute that move. We liked the commitment to winning his space, but it was probably slightly reckless on the energy distribution front. He opened up a 1 ½-length on the backstretch, but by the time he was midway through the far turn, he looked tired, his action beginning to go up & down instead of forward.

GHD closer Rattle n Roll took advantage of the pace scenario and rolled on by. Classic Causeway fought all the way to the wire to try to get 2nd, but had to settle for third behind Double Thunder (subsequently 8th in the Breeders' Cup Juvenile, hasn't run since). It was a gutsy run. He stayed on emotionally, but his slow late fractions suggested he would need to manage his energy better to succeed at two turns.

Classic Causeway faced fellow Derby starters Smile Happy and White Abarrio in the Kentucky Jockey Club Stakes (G2). He had the rail post in a field of 11. Classic Causeway was not sent to the lead, and this time it was him who checked off heels heading into the first turn.

This trip gave us a chance to see how Classic Causeway could rate behind horses. He did a pretty good job. After sitting 4th early in behind horses, he made his move while 3-wide around the far turn. He might have poked his nose in front for a couple strides in early stretch, but Smile Happy to his outside was the superior mover.

Smile Happy separated from the herd and won by 3 ¼ lengths. Classic Causeway held his own, battling all the way to the wire to finish 2nd, beating White Abarrio by 2 ¾ lengths. Classic Causeway's physical fractions (24.55, 24.75, 23.99, 31.21) indicated he stayed the trip but was simply outrun by the winner.

Classic Causeway came out of the gate running at age three in the Sam F. Davis Stakes (G3). He ran his first quarter in a swift :22.66 and he did it easily. This is one of the best gate horses in this crop.

When #13 Little Vic came up on his outside, very rank, Classic Causeway was ready to go to battle, but rider Irad Ortiz asked him to stay calm. Classic Causeway showed excellent restraint in that scenario. He waited to make his second run, then burst away to win by 3 ¾ lengths.

We liked the internal fractions again (22.66, 24.03, 24.82, 31.29). He ran a fast opening quarter, rated while establishing his platform at the front of the herd, then relaunched.

Classic Causeway rocketed out of the gate again in the Tampa Derby (G2). He has a big IHD shift, but there is a nice Group Herd Dynamic (GHD) skillset underneath that gives him great environmental awareness. This is not an ears-pinned, pedal-to-the-metal frontrunner. Classic Causeway shows us the ear articulation of a fairly balanced horse, with very good sensory interpretations.

Running on the lead with a wonderful, confident rhythm, he dominated the Tampa Derby, again re-kicking in the lane to win by 2 ½ lengths.

Our only caveat on how good he looked in the Tampa races is that there was not any Derby-quality Herd Dynamics in those fields. And especially when talking about an IHD-speed based profile, the competition can make a huge difference.

Classic Causeway entered the Florida Derby (G1) on a high. In the betting he was viewed on roughly equal terms with White Abarrio, Charge It and Simplification.

On the pan view it looked like another great start for Classic Causeway, as he rocketed out to the lead and engaged in an IHD fight with Simplification. But the head-on view of the start revealed something else. Classic Causeway stumbled badly when the gate opened. His knees almost touched the ground as he rolled forward on them. He took a couple very awkward steps, before recovering in the blink of an eye. Did Classic Causeway get injured there?

Classic Causeway did not even last 6 furlongs on the front end before dropping out of the Florida Derby. Ortiz did not persevere in his ride. He finished 11th, beaten 21 lengths. It was the first time we ever saw Classic Causeway withdraw his competitive edge.

Talking strictly from the mental/emotional/ behavioral standpoint, Classic Causeway is a special horse. But we have questions about his distance aptitude and now that all the pieces are coming together, his company lines.

We liked how he was performing from 7 furlongs to 1 1/16 miles. We gave him a good chance to get 1 1/8 miles, but the Florida Derby casts doubt on his ability to add any more ground, especially when facing pace pressure from other tough IHD speed types.

We are confident that Classic Causeway has more of a GHD/IHD balance than meets the eye, but all of his growth and pattern-of-motion re-enforcement this year has been in the IHD. When everything is shifted to the IHD, you need a dominating physical edge from start to finish. Classic Causeway had that advantage at Tampa, but it's a reach to suggest he will have that in the Kentucky Derby.

We hate to see horses coming in to the Derby in anything less than their best form. We hope Classic Causeway is running because he is thriving again. If that is the case, there is significant bounce-back potential here.

At the very least, we expect him to make his presence felt with his excellent gate speed. And after he gets out of the initial scrum, new rider Julien Leparoux has the feel and patient style to take advantage of Classic Causeway's potential for versatility.

If you were a big fan of Classic Causeway before the Florida Derby, we suggest staying in his corner for at least one more race.

TIER 3 ★ ★ ★ ★

TIZ THE BOMB

Colt by Hit it a Bomb—Tiz the Key, by Tiznow
Bred in Kentucky by Spendthrift Farm LLC

Owner: Magdalena Racing, Lessee
Trainer: Kenneth McPeek

If the Kentucky Derby was a turf race, we would see Tiz the Bomb as a captivating contender. He has a strong emotional energy, athletic nature and a unique pairing of physical and mental traits.

But after dissecting his eight races – three on dirt, three on turf, and two on synthetic – we don't have any confidence in his ability to handle dirt, especially going 1 ¼ miles. What a horse feels in its feet matters a ton to athletic performance. And the longer the race, the more important stride efficiency becomes.

Tiz the Bomb debuted on the dirt going five furlongs at Churchill Downs. He broke awkwardly and bore out a little before his mental rudder caught and straightened out his body. We could sense a strong emotional energy in this colt right away, but he did not like the kickback when he was behind horses. His head was lifting up and away from the stimulus. He finished 7th, beaten 5 lengths. It was an educational debut.

Trainer Ken McPeek attempted to get Tiz the Bomb on the turf at Ellis Park in his second start, but the race was taken off the grass, moved to the main track and scratched down to six horses. Tiz the Bomb's athleticism emerged in this race. Exuding emotional energy, Tiz the Bomb avoided kickback by leading wire-to-wire. A forwardly aggressive moving colt, he won by 14 lengths.

It was an impressive looking race, but when we looked deeper at who he beat and the fractions of the race, we didn't view it as definitive proof of his ability on dirt.

Despite the main-track win, McPeek went back to the grass in Tiz the Bomb's third start, the Kentucky Downs Juvenile Mile. This race saw the emergence of Tiz the Bomb's pattern of motion. Sitting in 6th place early, Tiz the Bomb went into a high-revving Group Herd Dynamic (GHD) cruising mode. His primary rating gear is fast-rhythmed, maybe just one click

below Individual Herd Dynamic (IHD) competing mode.

The impressive thing about Tiz the Bomb is that he has multiple emotional gears still available beyond that high-rev GHD. And he had to use them over Kentucky Down's unusual layout, which includes subtle right and left-handed turns, a number of dips and rises, and an uphill finish. Those features test a horse's ability to maintain forward efficiency through sensory transitions.

Sitting 6th early, Tiz the Bomb gradually took over leadership of the second group. He targeted the front pack on the far turn and gradually gaining, spun into the stretch in the 7-path.

Tiz the Bomb came through the middle of the disjointed lead pack, then drifted down to the inside. He took the lead around the 3/16 pole, then flipped back to his left lead as he crossed the bottom of the dip, before the uphill finish. Switching back to his right lead, he ran his final furlong in a very solid :12.29. Staying on strongly, he won by ¾ of a length.

His internal fractions from the Kentucky Down race (:23.57, :24.28, :24.02, :23.96) are a great example of this horse's unique Herd Dynamic and energy distribution. He has some early foot, never slows down too much, but he was gradually accelerating through the finish. It's a sustained speed energy profile, and he can execute it from various herd positions.

In the Bourbon Stakes (G2) at Keeneland (1 1/16 miles turf) Tiz the Bomb broke alertly and got over from the 12-post in a field of 14. Nearly out-moved on the far turn, he gradually asserted himself through the lane and won in hand in the end.

Tiz the Bomb's runner-up finish in the Breeder's Cup Juvenile Turf at Santa Anita was excellent. Despite breaking well, he got shuffled and buried behind horses on the inside – not the place to be on Southern California's speedy turf.

He advanced up the inside, then cut through traffic in the lane. He ran out of real estate and finished 2nd, but he was running at the winner Modern Games with a tenacious energy.

Tiz the Bomb's initial entry to the Kentucky Derby trail came in the Holy Bull Stakes (G3) at Gulfstream Park, and it was a flop. He broke from the gate fine, but almost immediately his stride did not look right to us. Climbing early (high action), he never engaged emotionally and finished 7th, beaten 20 lengths by White Abarrio. Tiz the Bomb looked nothing like himself in the Gulfstream race.

McPeek redirected Tiz the Bomb to Turfway Park, where he could still qualify for the Kentucky Derby while running on a synthetic track. Many turf horses run well over that surface.

Tiz the Bomb got the job done by a diminishing neck in the Battaglia Memorial Stakes, then dominated the Jeff Ruby Steaks Stakes (G3) going 1 1/8 miles. His stride looked good, skipping off the top of the synthetic surface, similar to how he moved over turf.

We like Tiz the Bomb's Herd Dynamic very much, so we hate discounting his chances. But in two of his three dirt races, we saw a withdrawn, cautious horse. His stride mechanics changed, and he appeared taken off his game by kickback. The one good dirt race was against maidens in July of his juvenile campaign, and it wasn't that fast. His record on turf and synthetic (5 races: four 1sts, one 2nd) is very strong.

We expect rider Brian Hernandez Jr. might ask Tiz the Bomb to express some speed earlier in the Derby. He also might be willing to sacrifice ground loss to try to keep him in the clear. Anything less than his best is not going to be good enough here.

CROWN PRIDE (JPN)

Colt by Reach the Crown (Jpn)—Emmy's Pride (Jpn),
by King Kamehameha (Jpn)
Bred in Japan by Shadai Farm
Owner: Teruya Yoshida
Trainer: Koichi Shintani

With all the success Japanese horses have been having in International racing – including Marche Lorrain's victory in the Breeders' Cup Distaff (G1) last year – is it only a matter of time until they break through in the Kentucky Derby?

We think their entry this year – Crown Pride (Jpn) – is the most physically gifted and emotionally powerful horse they have brought to the Kentucky Derby. We like him more than Lani (who ran 9th in the 2016 Derby) or Master Fencer (6th in 2019).

But after watching Crown Pride's four career races, we think he might be one of the rawest talents we have ever seen in the Derby, from any country.

Crown Pride looks the part physically. He is a scopey, strong, handsome horse with a long stride. He also has a deep well of emotional energy.

But if he were to post a historic upset, the Japanese will have done it against the grain of what we consider two of the most important ingredients a Derby horse can have – mental efficiency and a honed pattern of motion.

Our trip notes for Crown Pride's races are wild. Facing maidens at Chukyo in his debut on October 3, Crown Pride hopped at the start and was a little head high early. In behind horses, in 5th place under the wire the first time, he was climbing in the face of kickback.

To say Crown Pride beats to the rhythm of his own drum is an understatement. The pace of the race appeared slow, but Crown Pride did not want to adjust to the speed of the horses in front of him. Mouth open, throwing his head, Crown Pride was jumping out of his skin. He was checked more times than we could count while in behind the leaders. These are unrefined Individual Herd Dynamic expressions.

Crown Pride finally settled briefly before tipping out 4-wide in the lane. He remained on his left lead, and he was drifting inward, but his superior stride allowed him to gradually draw away to win by 6 lengths.

His second career start came at Hanshin in an allowance race on November 7. The distance (1 1/8 miles) was the same as the debut race, but this track was right-handed. He had the 13-post in a field of 13. His gate break was much better; he broke running and again he was cycling like an IHD horse. Crown Pride has an extremely eager, athletic rhythm.

Sitting in the clear in 3rd place early, his head carriage looked much better when he didn't have to deal with kickback. His mind-to-body fluency also improved with no horses blocking his way.

He rated in 3rd place, waited until his jockey told him to go, then won going away by 3 lengths. There was some progress made in start #2.

Crown Pride made his three-year-old and stakes debut in the 1-mile Hyacinth Stakes on February 22 at Tokyo Race Course. Starting from the 9-post in a field of 14, Crown Pride was taken up at the start. In last place early, he was about 11 lengths off the leaders.

Crown Pride then made a very early move. He quickly passed two horses, while closing the gap out wide. He was checked by his rider after he caught up the main herd. Crown Pride soon re-commenced his wide advance with his rider standing up on him, trying to pull him back!

One excellent trait Crown Pride possesses is his forward projection. He ultimately wants to get to the front of the herd, and no amount of traffic trouble has dulled his forward urgency. But that wonderful ability has not yet been properly harnessed.

Crown Pride was parked about 6-wide around the turn. He spun into the lane in 9th place. He remained in a light drive to the wire, but that early move, fighting his jockey, and all that ground loss caught up to him as he hung late and finished 6th.

Crown Pride shipped to Dubai off that prep and ran in the UAE Derby (G2), where he faced a field of 16 horses. For a lightly raced horse, he has accumulated some good experience with big fields.

Crowded and bumped at the start, Crown Pride was not deterred by early traffic in UAE. This colt has a very aggressive, forward nature that could help him in the Kentucky Derby.

He advanced through traffic to reach 6th place as he took the first turn 3-or-4-wide. It looks like Crown Pride relaxes best when he is in the clear and out of any kickback, but the tradeoff is ground loss. He was 3-or-4-wide all the way around the second turn also.

Crown Pride advanced up to 2nd place as the field straightened for home, with only Summer is Tomorrow to catch. It was not a pretty stretch run. Crown Pride initially idled behind his target. Then, still stuck on his left lead, gradually pulled up alongside Summer is Tomorrow, who was shortening his stride. Crown Pride kept plugging along and won by 2 ¾ lengths.

He came home slowly, but we saw from the Dubai World Cup (run later on the same card) that the Meydan surface was quite heavy on the big day. On pure physical speed, we don't think Crown Pride is outmatched in this Kentucky Derby.

On sensory interpretations – and that includes how well he listens to his rider – we have major concerns. Crown Pride has been a difficult horse to control. We see far more physical talent than mental efficiency at this point in his career.

Also, Crown Pride doesn't have a defined pattern of motion yet. So far, he runs best when he stays in the clear to avoid kickback and has a clear line to advance. But that's not really a running style, and it can lead to a lot of ground loss.

We also wonder about Crown Pride's ability to interpret and absorb the chaotic environment at Churchill. We can tell they have been working with him by arriving early and familiarizing him with the environment.

Crown Pride will be a fascinating horse to watch on Derby Day. He has a very unique, expressive personality and a powerful emotional energy. His growth pattern is still being knitted together. We anticipate more lessons ahead for him, as well as for the Japanese as they continue to make adjustments on their quest to win the Kentucky Derby.

SIMPLIFICATION

Colt by Not This Time—Simply Confection, by Candy Ride (ARG)

Bred in Florida by France & Irwin Weiner

Owner: Tami Bobo and Tristan De Meric

Trainer: Antonio Sano

Two things really stood out to us when we analyzed Simplification's seven career races. First, there is a gap in his sensory process. We don't know exactly what is causing it, but the most significant effect is that he has not changed leads in many of his races.

Secondly, you could not ask for a harder trying horse. Simplification may get physically tired. He is often stuck on his left lead, moving awkwardly for the length of the stretch. But mentally, he always keeps grinding, giving everything he has got.

Simplification sprinted three times at age two. In his first race he was chasing the pace early, and although he got a little leg weary, he still tried to mount a rally when steered outside. He re-kicked but never changed leads as he finished 5th, beaten 3 ¼ lengths. He looked like an honest, expressive horse. His sequences suggested he would benefit from more time-in-motion.

Simplification returned 22 days later in a 6-furlong sprint for Florida-bred maidens. Breaking from the rail, his body went a little sideways at the start, but he quickly found his stride, advanced up the rail and took the lead.

Simplification has an enthusiasm for competing. When asked to change leads in early stretch, he intensified his movements but did not make the lead switch. Stuck on his left lead and completely by himself in open space, Simplification did not take his foot off the gas pedal. He won by 16 ¾ lengths! He held a beautiful straight path – this is a very athletic horse with good body control. But even when there is no space battle going on, he is fighting every step he takes.

We can see that he is receiving the cue from the jockey to change leads, because there is an emotional response. On video review alone, we would be guessing as to the reason for the short circuit.

Simplification completed his two-year-old season with a disappointing 3rd-place finish in an allowance race. Again sprinting, he pressed the pace, got stuck on his left lead, and faded physically but never quit mentally.

Simplification's breakthrough race occurred when he was stretched out to 1 mile in the Mucho Macho Man Stakes, and that very well might be his distance sweet spot. He broke well and gradually worked his way to the lead without overdoing it -- that can be a key for a horse with such a big competitive edge.

He went a half mile in a sharp :45.81, and he did it easily. His fluency looked better at the 1 –mile trip. He cornered into the stretch with a big forward expression, and he finally changed leads! It looked like he unlocked another series of emotional gears. Simplification won by four lengths. The time of the race (1:35.04) was quite fast, and he galloped out proudly.

Simplification officially joined the Kentucky Derby trail in the Holy Bull Stakes (G3). It looked like he mistimed the start (tried to jump early), and had his feet splayed when the gate actually opened. Environmental interpretations may be the zone where is getting mentally stuck.

Simplification had looked very shifted to the Individual Herd Dynamic in his first four races, but due to the poor start he had to try a new pattern of motion in the Holy Bull, and he did a reasonable job with it. In 7th place early, he looked about as relaxed as we've ever seen him.

Simplification launched his rally while very wide on the far turn. He couldn't catch up with the winner White Abarrio, who had a much better tactical trip and drew off to win by 4 ½ lengths. Simplification did not change leads and was hanging late when Mo Donegal came running at him. The short stretch helped Simplification as he just hung on to 2nd place by a diminishing neck.

Another poor break from the gate (veered outward) in the Fountain of Youth Stakes (G2) led to more pattern of motion experimentation. Rider Jose Ortiz had to check Simplification multiple times in traffic early. Simplification eventually settled, and we like that he was still showing a big forward focus even when he had nowhere to go. This is a horse that didn't have an "off" switch in his early races. So sitting behind horses might be a positive exercise.

Simplification launched 6-wide on the far turn. He drifted in early stretch as Ortiz tried to get him to transition, then held a good line as he drew away to win by 3 ½ lengths, again stuck on his left lead! The gap in his sensory process continues, but Simplification is so honest and consistent.

Simplification's final prep for the Kentucky Derby came in the Florida Derby (G1). He broke really well, battling out front with Classic Causeway early. He put his head in front after 5 furlongs and had the lead through 6f in 1:10.48. Just as Classic Causeway dropped back, Simplification was challenged by Pappacap to his outside – no time to get a breather.

White Abarrio had been stalking the pace battle from the start, and he had the stronger energy in the lane. Simplification did change leads, but he couldn't hold off Charge It and had to settle for 3rd place. That was not an easy trip. He was expending energy start to finish, as is his custom. In the Kentucky Derby, his rider may need to find a way to get him to relax for part of the trip, to help him conserve his top emotional gears for the finish.

Simplification is a really cool horse, and he has our respect for his determined, competitive spirit. But between added distance and the demands the Kentucky Derby places on a horse's sensory system, we think he may be facing too big of a challenge here. A minor prize would be an excellent accomplishment.
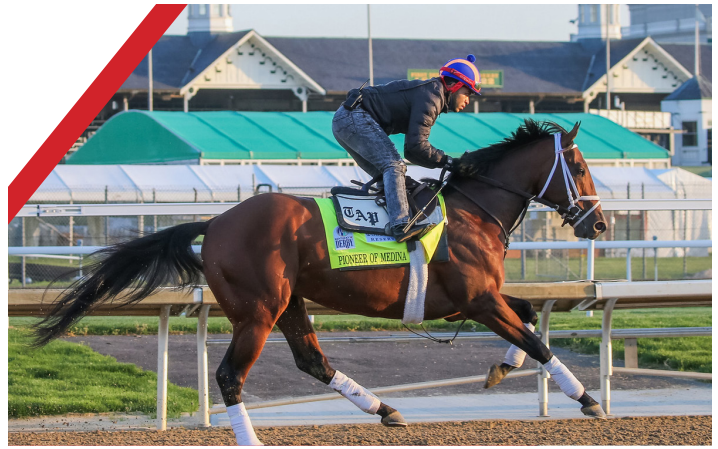
PIONEER OF MEDINA

Colt by Pioneerof the Nile—Lights of Medina, by Eskendereya

Bred in Kentucky by International Equities Holdings Inc.

Owner: Sumaya U.S. Stable
Trainer: Todd Pletcher

Pioneer of Medina has run at four different racetracks and has had a new jockey on him in all six of his lifetime starts. That's not a lot of continuity for a horse that had some Herd Dynamic issues to work through.

But Pioneer of Medina is a strong physical horse, and despite some sensory inefficiency, this hard-trying colt has clawed his way from trainer Todd Pletcher's second string to the Kentucky Derby starting gate.

He enters the Derby having completed a nice Herd Dynamic growth curve. He will need to take another step forward to contend for the win here, but we respect the progress this horse has made.

Pioneer of Medina debuted in a 6-furlong maiden race at Monmouth Park on September 6. He appeared to break from the gate in competing mode, sticking his head out into forward space, but there were soon signs of growing pains.

After pressing the pace early, he got squeezed back at the top of the turn when crowded between horses. He fell back to 3rd place, about 3 lengths off the lead. Asked by Paco Lopez to rejoin the fray, Pioneer went back into Individual Herd Dynamic (IHD) competing mode and made a run, but he got bumped and crowded twice in the stretch. He flattened and finished 2nd, beaten 6 ½ lengths in a fairly slow maiden race.

That trouble wasn't Pioneer of Medina's fault, but it's easier to be a victim of traffic when you aren't fully comfortable with your environment. He was still learning body control and space awareness in IHD.

Pioneer of Medina's second start came on the new synthetic surface at Gulfstream Park going 1 mile and 70 yards. He broke outward, then corrected back in. He came out of the gate in a competitive rhythm, but he quickly downshifted his intensity and settled in 5th place. He got shuffled back to 7th place on the far turn.

Pioneer of Medina rallied wide to finish 3rd, while staying on well but never reaching the leaders. He clearly made the shift into IHD, but the transition is just a hair heavy, and he continued to experience little brushes and bumps with the other horses.

His body control and space awareness still didn't look right.

Pletcher decided to add blinkers for Pioneer of Medina's third start, a maiden race at Tampa Bay Downs, and that move kicked off a growth pattern. Pioneer of Medina broke dead straight; his forward extension looked much more pronounced with blinkers.

He had the lead early, fell back to 2nd, then went on the attack. We still saw tiny delays in his sensory transitions, but for the first time, Pioneer of Medina was taking control of the herd.

He opened up a lead as big as 4 lengths. This was our first chance to see Pioneer of Medina in open space. When you isolate a horse from the other herd members, you also are isolating its sensory system. It is a chance to observe both strengths and weaknesses.

It appeared Pioneer wanted to see the horses behind him in the lane. That is not unusual, especially in a horse's first race wearing blinkers. He ducked out on a left-handed whip in early stretch, then ducked in late stretch when the pursuers entered his rear sensory field. Mentally he did not release cleanly from the herd. He won by 1 ½ lengths but was losing some of his forward efficiency near the wire. There was some progress there but also some things to work on.

Pioneer of Medina made his 3yo debut at Fair Grounds in a NW1X going 1 1/16 miles. He experienced what we call a "down-pressure" stumble at the start, but he recovered quickly into IHD and went to the lead.

There is often a little hiccup out of the gate for Pioneer of Medina, but it is usually followed by a quick recovery. He held onto his nice natural rating rhythm, even with blinkers.

Florent Geroux was on board in this allowance race, and he did a great job managing Pioneer of Medina's IHD efficiency through the lane. Pioneer drifted out sharply in early stretch the first time Geroux tapped him left-handed. From that point on, Geroux was using the whip both as encouragement to go forward but also as steering guidance. Geroux went left-handed, then right-handed to encourage forward efficiency and a straight path. He won by 1 ¾ lengths in a confidence

-building growth race.

Pioneer of Medina stepped up to the big time in the Risen Star Stakes (G2). In the gate between Zandon and Epicenter, Pioneer drifted inward and bumped Epicenter at the start.

Sitting 2nd, tracking Epicenter, Pioneer of Medina came under a ride from Luis Saez on the far turn. He was trying hard to get into Epicenter's space, but he couldn't quite rise to that level. Pioneer then got locked into a different battle, with Smile Happy coming up the inside and Zandon rallying on his outside.

He finished 4th, but he showed some guts finishing within a length of Smile Happy and Zandon. His body control looked better while competing between two good horses. He didn't take any of the big boys down, but he didn't get completely thrown away either. It was by far his best race to date.

Pioneer of Medina's most recent race was the Louisiana Derby (G2). He experienced down-pressure at the start again, but as usual recovered quickly. He was sitting 2nd, just off Zozos' hip into the first turn. That was basically where he would remain the whole race.

He was still trying to catch Zozos when Epicenter produced his run in the stretch. Pioneer of Medina could feel Epicenter coming, and that drew his focus away from Zozos. After Epicenter rolled to the front, Zozos and Florent Geroux came out into Pioneer of Medina's path slightly, and that caused Pioneer to flip back to his left lead. He finished 3rd, beaten 4 ½ lengths.

Pioneer of Medina has some minor sensory and Herd Dynamic weaknesses, but he tries very hard, and has good athletic ability. Pletcher's decision to put blinkers on him has led to a decent growth curve.

The best part of Pioneer of Medina's pattern of motion is his IHD cruising/rating gear. Finding a good physical rhythm with the other horses allows his mentality to settle down and links up his mind-to-body fluency. The longer they can take him in that mode, the better.

Pioneer of Medina's IHD sequences have improved, but he will need to begin a new growth curve if he is going to pose a serious threat for the win in the Kentucky Derby.

TAWNY PORT

Colt by Pioneerof the Nile—Livi Makenzie, by Macho Uno
Bred in Kentucky by WinStar Farm LLC

Owner: Peachtree Stable
Trainer: Brad Cox

Tawny Port won the final point-series prep race of the year – the Lexington Stakes (G3) at Keeneland on April 16 – to cement his spot in the Kentucky Derby.

Before the Lexington, there was some question whether Tawny Port could handle dirt. He has two wins and a second from three starts on the synthetic track at Turfway Park, but he finished 5th in his only previous dirt race.

Seeing how he ran at Keeneland, and considering he had some traffic trouble in his previous dirt race, we think Tawny Port has answered the dirt question well enough.

But Tawny Port's biggest challenges in Louisville are likely to be his physical speed and Herd Dynamic type.

Trainer Brad Cox debuted Tawny Port in 1-mile maiden race at Turfway Park on December 4. On video Tawny Port certainly looks likes like a router – a $430,000 yearling, he is a big horse with good scope.

Breaking from the 3-post in a field of 12, Tawny Port drifted outward and bumped, exhibiting some minor tail stress. In 11th place early, we noted a methodical rhythm and Group Herd Dynamic base. It took him the better part of a furlong to find fluency and forward projection.

Reacting to hand urging from jockey Emmanuel Esquivel, Tawny Port started advancing on the backstretch. He launched into Individual Herd Dynamic (IHD) as the field hit the far turn, first splitting horses, then moving out 4 or 5-wide. Tawny Port produced a sustained, sweeping rally and won by 6 ½ lengths. It was a really nice sequence for a horse on debut.

Turfway maiden races are usually not top class, and we did temper our visual impressions after seeing the time of the race (just average for the class level) and the HD strength of his opponents (9 of 11 runners are still maidens as of this writing, none have beaten winners).

Tawny Port was back in a NW1X at Turfway on January 7, again going a mile on the synthetic. His gate exit was just a little uncontrolled. He has a habit of falling into the space to his right when the gate pops. But this time his start wasn't followed by a long adjustment period. With the rider asking him, Tawny Port showed some urgency, finding a more competitively rhythmed GHD while caught wide around the first turn.

Tawny Port sat mid-pack in 5th place while tracking on opening half mile in :46.70. Esquivel asked him for his move quite early again, and Tawny Port launched while 4 or 5-wide around the far turn. He did a nice job maintaining body control while way out in the middle of the track, making a bold bid for herd leadership. He hit the lead fairly early and was persevered with to win by a half length.

The competition he faced was again very average for the class level, but facing winners for the first time is always a significant hurdle. And Tawny Port put together another very nice, sustained run to get the win. In two races, Tawny Port had already established and re-enforced his pattern of motion successfully.

Tawny Port stepped up to the bigtime and tried the dirt in his third start in the Risen Star Stakes (G2). He broke slowly, exhibiting a little tail stress. In 7th place along the inside early, Tawny Port had Smile Happy and Zandon as nearby running mates.

But whereas those two launched and would finish 2nd and 3rd behind a geared down Epicenter, Tawny Port was unable to forge his own path and got stuck behind a fading horse. Tawny Port made a sharp lateral move in early stretch to find room, then rallied steadily for 5th place, beaten 7 ¾ lengths.

Tawny Port got left behind by the top three, but he was at least targeting forward through the wire. We liked that he sustained his competitive nature and still tried to execute his pattern of motion in defeat.

Tawny Port appears to be a strong physical horse with a long stride, but the way he tracks does look just a little wide and loopy (left front). He got over the dirt ok. He might be a little better on a synthetic surface. That surface can act as a bit of an equalizer between horses with varying stride efficiencies.

It was back to the synthetic in the Jeff Ruby Steaks Stakes (G3). Sitting 5th early, Tawny Port was exhibiting his competitively edged GHD again. He tried to get the jump on Tiz the Bomb, but he was unable to establish any separation.

Tiz the Bomb took over herd leadership as they turned for home and won off by 2 ¼ lengths. Tawny Port stayed on to finish 2nd. In a clear adjunct role, he was running in the winner's wake.

Still needing points to guaranty a spot in the Kentucky Derby, they ran Tawny Port in the Lexington Stakes. He performed exactly to profile. He fell to the outside at the start, but quickly recovered and found his competitive GHD rating mode.

He launched on the far turn and showed good determination to win by 1 length. It was a gutsy run, but his sectional times (:24.29, :24.35, :24.19, :32.42) probably illustrate the biggest reason Tawny Port is up against it at the top level. He is a methodical GHD type that doesn't have that much real speed.

Tawny Port is an honest, hard-trying horse. He had his pattern of motion figured out from day 1, and he has completed a growth pattern in the efficiency and athletic strength of his Group Herd Dynamic. He is running very close to his potential, and that is all can you ask of a horse.

We don't view Tawny Port as a win threat in the Derby, but we expect him to deliver another solid effort.

SUMMER IS TOMORROW

Colt by Summer Front—Always Tomorrow, by Badge of Silver
Bred in Kentucky by Brereton C. Jones
Owner: Michael Hilary & Negar Burke
Trainer: Bhupat Seemar

Summer is Tomorrow has found his way back to his Kentucky home thanks to a surprise 2nd-place finish in the UAE Derby (G2).

Bred in the Commonwealth by former Kentucky Governor and Airdrie Stud founder Brereton C. Jones, Summer is Tomorrow was offered at two Kentucky auctions for modest prices. Later purchased by his current owners at a training sale in France, all seven of his career races have been in the United Arab Emirates.

We see a big shift to the Individual Herd Dynamic in Summer is Tomorrow and a lot of competitive grit in his physical expression.

Summer is Tomorrow debuted on November 18 at Meydan Race Course in a 6-furlong maiden race. In fact, his first six races were sprints!

He broke well in his debut and immediately went into IHD expression, battling for the lead. Mentally, he appeared fairly fast-cycling. Physically, he appears to be a strongly made, good-sized specimen. His stride isn't bad, but it isn't the prettiest – he sometimes appears to be slapping hard down on the ground. His lead change was drawn out as he ran a distant 2nd in the debut.

There was no growth in his second race. He broke like an IHD speed horse again and was pressing the pace first, then sitting just a length back in 5th place. Summer is Tomorrow looks like he is trying hard all the time.

He also looked a little rushed in this race. Mentally, he was trying harder than his physical output. His lead change was awkward again, and he finished 7th.

Summer is Tomorrow broke his maiden in his third start on December 23. He went to the lead following another IHD-cycled gate break; this is a good gate horse who has a strong desire to place himself at the front of the herd.

His mid-race transitions looked a little smoother as he won by 4 1/2 lengths. There is no doubt this horse has an intense competitive edge.

Summer is Tomorrow followed up his maiden win with a 2nd and a 4th vs. winners. He seemed a little rushed and one-dimensional at that point in his career. He would break from the gate running and was using his top gears right away. If he didn't dominate the early pace, he would be up against it late.

They gave him a little more ground to work with (his second try at 7 furlongs) on February 25 at Meydan, and Summer is Tomorrow responded with a breakthrough win. He rocketed out of the gate and established a 1-length lead while getting over to the rail. Moving powerfully throughout the race, he found another gear in the lane and drew off to win by 8 lengths. We don't know the reason for the improvement, but it was done in convincing style.

That win was good enough for the connections to try him in the 9 ½-furlong UAE Derby (G2). It was an ambitious spot for Summer is Tomorrow's first two-turn race.

His sprinter's speed out of the gate served him well as he broke fast and efficiently, going straight to the lead. We like Summer is Tomorrow's stride rhythm better going a middle distance. He no longer looked rushed.

With Del Mar Futurity (G1) winner Pinehurst trying to press him, Summer is Tomorrow cut splits of :47.63, 1:11.81, and 1:37.90. Those don't look that fast at face value, but the Meydan track was very dull on World Cup night. Life is Good, one of the fastest dirt horses in the world, cut these splits later on the same card in the Dubai World Cup (G1): :48.03, 1:11.41, 1:36.74. Judging by that comparison, Summer is Tomorrow has legitimate speed.

Pinehurst faded on the far turn, and Crown Pride (Jpn) emerged as the main challenger in the lane. Summer is Tomorrow initially appeared to hold the edge, but he hit the wall inside the final 200m. He was shortening his stride late, and Crown Pride, on his wrong lead, went by. Summer is Tomorrow finished 2nd, beaten 2 3/4 lengths.

Summer is Tomorrow ran very well for about 1 1/16 miles of the UAE Derby. Considering he will be facing even better IHD speed horses in the Kentucky Derby, it is difficult to like him adding more distance.

Summer is Tomorrow is a hard-trying horse who runs as fast as he can for as far as he can. He is a good gate horse, and he could potentially get the lead in this field. We think there is some legitimate ability here, but in the end, we expect the class rise and one-dimensional pattern of motion will catch up to him.

ETHEREAL ROAD

Colt by Quality Road—Sustained, by War Front
Bred in Kentucky by Paul Pompa Jr.

Owner: Julie Gilbert and Aaron Sones
Trainer: D. Wayne Lukas

Ethereal Road jumped into the Kentucky Derby field the morning of the post position draw after Un Ojo was scratched.

For us, he turned out to be one of the most puzzling studies in this year's race.

Ethereal Road has one career win, a maiden race at Oaklawn Park on January 29. If we graded him on that performance alone, we would be tempted to say there is possibly a "Derby horse" here.

The rest of Ethereal Road's work falls well short. Unless trainer D. Wayne Lukas has a magic trick up his sleeve, this colt may need a full reset after the first Saturday in May.

Ethereal Road debuted on October 31 at Churchill Downs going 7 furlongs. He lost position after the start and was shuffled back to 9th place. Asked by jockey Rafael Bejarano, Ethereal Road went into a drive and rallied mildly to finish 7th, beaten 13 ½ lengths. He was weaving a little in the lane while trying to catch up to the main herd. It was an acceptable first practice run.

Back in at Churchill on November 28, rider David Cohen urged Ethereal Road at the start. He was able to attach to the main herd in 7th place early. Ethereal Road launched his rally on the turn, but #7 Kupuna on his outside had a superior turn of foot. Ethereal Road got left behind, but he did re-commence his rally to finish 5th, beaten 5 ¾ lengths. It looked like his interpretation process was still catching up to race speed.

Ethereal Road moved to Oaklawn Park late in his two-year-old season. He took another small step forward when stretched out to 1 1/16 miles in start #3. He broke, then settled in 8th place early. It appears Group Herd Dynamic closer is his pattern of motion.

He slipped back to 10th place while in traffic on the far turn, then rallied late up the rail to finish 3rd, beaten 6 1/4 lengths. It took a little extra time for Ethereal Road to find fluency, but his IHD drive showed improvement.

Ethereal Road broke through in start #4, another 1 1/16-mile maiden race at Oaklawn. It did not start well, as Ethereal Road hesitated, then literally fell forward out of the gate at the start. Gapped by the field, he was close to 20 lengths out of it!

Then, coming from off the screen Ethereal Road started picking up horses on the far turn. He went outside, spun into the lane in the 6 path and mowed them all down. He finished full of run, winning by 4 lengths.

A review of the internal fractions showed Ethereal Road was very slow early, but the finish was solid over a very tiring Oaklawn surface (26.31, 24.36, 24.82, 31.34).

Ethereal Road joined the Kentucky Derby trail in the Rebel Stakes (G2). He broke from the gate much more efficiently. For the first time we saw a competitive GHD cruising gear as Ethereal Road sat 5th early, just a few lengths off the lead.

He launched 4-wide around the far turn, and when he hit the lead in mid-stretch, he appeared to have the race won. However as soon as he opened up a half-length lead, Ethereal Road lost efficiency. He began weaving in and out, losing his forward efficiency.

That allowed one-eyed Un Ojo (who had Ethereal on his "good side") to rally up the inside for the win. Ethereal Road finished 2nd, beaten a half length. Had the race been any longer, troubled third-place finished Barber Road appeared poised to pass him too.

When a horse looks good until the moment they hit the lead, it often means they were outsourcing some of their environmental reads to the other herd members. Forced to make their own

interpretations while moving into open space, efficiency drops off.

In the Blue Grass Stakes (G1), Ethereal Road showed decent engagement early, launched a rally on the far turn but then got bogged down in a bumping match with Trademark in the lane. The intensity was there, but the forward efficiency was lost on contact as he flipped back to his left lead. He tired late and finished 7th, beaten 11 ½ lengths.

Just one week after the Blue Grass, Ethereal Road ran back in the Lexington Stakes (G3). It was another partial effort. He transitioned into IHD on the far turn, and had decent position following the winner Tawny Port.

But Ethereal Road lost his forward urgency in late stretch, appearing content to run in the winner's wake through the wire. He finished 4th, beaten 3 ½ lengths.

Ethereal Road has some physical ability, but he has yet to run a race where his GHD efficiency and IHD drive came together. There is either a behavioral or sensory issue holding him back. We would love to inspect this horse in person to try to figure out what is going on. He might be a candidate for blinkers.

With a stalled growth pattern and the Kentucky Derby being his third race in just four weeks, Ethereal Road is in a tough spot here.

HAPPY JACK

Colt by Oxbow—Tapistry, by Tapit
Bred in Kentucky by Calumet Farm

Owner: Calumet Farm
Trainer: Doug O'Neill

Happy Jack is one of the most puzzling horses in this year's Kentucky Derby.

He really hasn't developed much since his debut victory, which was an odd race in and of itself. Two distant third-place finishes in the Southern California preps – which had shallow fields this year -- gave him enough points to get in the Derby gate.

We have liked a few moments of Happy Jack's races, but he is yet to put together a strong sequence from start to finish. So far, there is not much of a Herd Dynamic growth pattern.

Happy Jack debuted in a 6-furlong maiden sprint at Santa Anita on January 22. Trainer Doug O'Neill outfitted him with a shadow roll and blinkers. Combined with the way jockey Abel Cedillo rode Happy Jack, we think the connections believed he needed help with focus and/or competitive urgency.

Happy Jack broke well. His rhythm looked moderate to fast as he tried to keep up with a quick opening quarter in :21.78. He fell back to 5th place, between horses, while receiving regular reminders from jockey Abel Cedillo. It looked like Cedillo wanted more engagement from Happy Jack than he was getting.

There was a brief moment on the far turn where the other horses were revving into Individual Herd Dynamic competing mode, and Happy Jack appeared to be idling.

But as Cedillo went into full ask mode, Happy Jack's IHD fire lit. He cornered with improving urgency and purpose. With the leader on his wrong lead and drifting out, Happy Jack advanced between horses through that huge opening and came through on the inside for the win.

There was a moment on the turn where we would have given you 20-to-1 on him, but Happy Jack found his competitive gears and finished quite strongly. His internal fractions looked solid (22.31, 23.51, 12.51, 12.75) and he galloped out very well, looking forward and alert.

The way a horse finishes its first race often gives clues about where they will pick up in race 2, but Happy Jack did not build on his maiden win. In the Robert B. Lewis Stakes (G3) he took just a slight misstep at the start. Being ridden early by Cedillo, Happy Jack's mind-to-body fluency wasn't quite dialed in. Last of five as the first turn approached, Cedillo steered him to the inside rather than get caught wide.

Happy Jack remained last of the five pretty much all the way. He had trouble transitioning when asked and was stuck on his left lead in the lane. He finished 5th, beaten 27 lengths by Messier.

O'Neill took the blinkers off Happy Jack in the San Felipe Stakes (G2). Breaking from the rail in a field of seven, he got out of the gate very well, showing good competitive urgency early. With Forbidden Kingdom setting a fast pace, Happy Jack fell back to third place.

It looked like he briefly found a solid rating gear, but then he started losing ground on the backstretch. We see some signs of possible herd dependency in Happy Jack, as it looked like he was using Doppleganger and Cabo Spirit for outsourcing.

Doppleganger left him, and Happy Jack struggled to find his competitive edge when alone in space. He was trying to extend forward and latch onto a target or a running mate, but he remained stuck on his left lead again. In a field where no one came home fast, Happy Jack ran his final 5/16 in :33.66. He finished third, beaten 10 ½ lengths.

O'Neill decided to put the blinkers back on for the Santa Anita Derby. Happy Jack looked slightly pressured early and was exhibiting some tail stress. In 5th place, he was losing ground to the leaders on the backstretch. As usual, Cedillo was asking

him for more competitive edge. Happy Jack didn't appear to engage until Win the Day came up next to him.

Back to last place on the far turn, Happy Jack did transition into IHD, and he rallied ok up the inside (final 3f in :38.39) to earn 3rd place. He finished 10 lengths behind 2nd place Messier and 12 lengths back of Taiba.

Happy Jack enters the Kentucky Derby on a limited, uneven growth pattern. There are signs of either a sensory interpretation issue or herd dependency that still needs working out. He is only running at full efficiency for parts of his races. He has not established a successful pattern of motion, and that gives him little to fall back on when things gets tough at Churchill.

Judging by the way he has been ridden and the on-again/off-again blinker moves, we get the feeling the connections are still figuring him out. The Kentucky Derby is a strange and difficult place to ask a project horse to take the next step.

Rafael Bejarano will ride Happy Jack for the first time in the Derby. Normally we wouldn't like to see a horse that is difficult to ride get a new jockey in a big race. But we have always liked the touch and feel Bejarano rides with, so perhaps he can help unlock Happy Jack's potential.

Sensory interpretations in a 20-horse field and holding competitive engagement are likely to be Happy Jack's biggest hurdles. A remotely competitive effort would be a success in our eyes and would give Happy Jack something to build on.

RICH STRIKE

Colt by Keen Ice—Gold Strike, by Smart Strike
Bred in Kentucky by Calumet Farm

Owner: Red-TR Racing LLC
Trainer: Eric Reed

Rich Strike is likely to be overmatched if he draws in to the Kentucky Derby.

We mean no disrespect to the connections or the horse, who have accomplished something special getting here in the first place. Rich Strike tries very hard, and in the end that is all we can ask of an equine athlete.

After finishing 10th in his debut race on the turf at Ellis Park, Rich Strike ran in a $30,000 maiden claiming race at Keeneland. The current connections rolled the dice, putting in a claim on the Calumet Farm homebred.

It must have been exciting for trainer Eric Reed and the new owners to watch as Rich Strike demolished the field by 17 lengths.

Rick Strike was sitting 8th about 7 lengths off the lead early in the race when rider Adam Beschizza shook the reins. Rich Strike gained 5 lengths while swiftly moving up the inside. Beschizza tapped the brakes, and Rich Strike paused just behind the leaders. He waited, then tipped two wide and transitioned into a nice IHD drive. Rich Strike released the field cleanly, and held a strong path through the wire.

Rich Strike enjoys racing – he is a game competitor at his level -- but he has an odd way of filtering. He runs with his tail stiffened most of the time. That can be a sign of stress for some horses, but Rich Strike gives us every indication that he enjoys being a racehorse.

After he finished a non-threatening 5th, 14 lengths behind Epicenter in the Gun Runner Stakes, Rich Strike went to Turfway Park and ran in the Northern Kentucky track's Derby prep series. He seemed to take to Turfway's synthetic track well.

Rich Strike rallied to finish 3rd in the Leonatus Stakes, then ran an even better 4th when beaten just 3 lengths by Tiz the Bomb in the Battaglia Memorial. There was considerable traffic in the stretch, but Rich Strike never stopped searching for open space to advance through.

In the Jeff Ruby Steaks Stakes (G3), Rich Strike took what he could get, rallying up the inside to finish a best-of-the-rest 3rd behind Tiz the Bomb and Tawny Port.

Rich Strike has a methodical forward drive, and he uses time-in-motion to his advantage, always trying to sustain his effort to the wire.

About the Authors

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GLOSSARY

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

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

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

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

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

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

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

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

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