

THOMAS HERDING TECHNIQUE: PATTERNS OF MOTION ANALYSIS

WITH KERRY THOMAS AND PETE DENK



Graded Derby Selections

Dortmund
American Pharoah
Carpe Diem
Materiality
Mubtaahij
Bolo
Frosted
Upstart
Firing Line
Far Right
Keen Ice

International Star
War Story
El Kabeir
Danzig Moon
Stanford
Mr. Z
Itsaknockout
Tencendur
Frammento
Ocho Ocho Ocho
Tale of Verve

2015 KENTUCKY DERBY

Learning is a constant evolution by its very nature, and it is not only the cornerstone of our work and vision at THT Bloodstock but also for me as a person. Growth can only be measured by the transformation of itself from one thing to another based upon experience, even if at the time those experiences are a mystery and you know not what might emerge from them. It is the mystery of the horse that drives my passion; not what has been discovered, but what is yet to be.

As we now have moved into year five of our Kentucky Derby Analysis I want to once again thank you, both the new and the returning buyer of this product, for doing so. On behalf of both Pete Denk and I, the appreciation we have for your support and interest in the efforts we make cannot be overstated. The development of these profiles for the Derby is a monumental task, but a labor of love to be sure and also a chance for us to apply more of the things we continue to learn in our endless journey studying equine psychology and the Herd Dynamics.

Kentucky Derby 141 is flush with upper level herd dynamics and anything but easy to differentiate. Our view into this inner world of the individual horse has been greatly enhanced over the last year as we collect and track our data from thousands of horses both evaluated at auction and in our work profiling performances. We continue to build this bank of knowledge and have expanded to include a growing list of Stallion Profiles we make available for breeding purposes and progeny research.

This year's study afforded us a unique opportunity to include where possible our auction evaluation notes. There were several athletes that we evaluated in the sales environment and made our herd dynamic short list who distinguished themselves on the Derby Trail. Having had the opportunity to study these horses in depth as they mentally grow has taken our work to a new level. After several years of hard work and study we have built a growing database of ingredients to monitor how these translate to athletic ability. We continue to chisel down the primary focus points in our unique evaluation system with practical applications found both in the profiles we produce and the services we offer.

I have long held fast to the belief that patterns of behavior translate to patterns of motion, that sensory soundness and the efficiency of the psycho-sensory system, *mentality*, is the key to both adaptability and stress management. As emotional athletes, horses are often a reflection of their environment, and like any athlete in any sport, the *ingredients of greatness* lay just as much in the psychological as they do in the physical. And, just like in other professional sports, the closer the athletes become in their physical abilities, the dividing factor begins to shift to their psychological strengths; things we call, grit, will-power, class, *heart*.

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

In order for a horse to move freely and efficiently into space their sensory system must first clear the path as it leads the body; the *sensory super highway* is the pilot steering the vessel if you will. The horse's capacity to optimize physical ability, or even rise above it, lay within the efficiency of their psycho-sensory system. A natural pattern of motion is a physical reflection of naturally occurring psychological rhythms, this emotional energy distribution is innately even allowing for the optimization of physical ability. The sensory system must identify stimuli and then funnel the information into the psyche where that stimulus is then interpreted. Proper interpretation allows for a smooth and sequential purposeful motion. At a high rate of physical speed in the midst of herd chaos and stress, the efficiency of this rapid-fire sequence is tested and thus begins to separate the horses over a period of time-in-motion within their natural leadership roles, their herd dynamics. There's a big difference between horses whose psycho-sensory system leads their body and of those that do not.

If the sensory system, the 'radar-egg' around the horse did not have influence over the physical horse, the horse then would simply be a machine of no reaction. Blinkers, shadow rolls, screens... would be sensory modifiers never developed because they would have no effect. The horse walking in a sale environment being asked to walk faster by the use of a broom would not react to it, nor would the horse respond to your intentions, your emotions, your *body language*, they wouldn't show signs of stress or fear or look playful in the pasture. These are real things, they really happen, they impact the horses daily life, they impact the horses ability to perform.

I personally feel that every horse should have the opportunity to excel and grow with the full use of their natural sensory systems without inhibitors. I think once you gain a full understanding of the psychology of your athlete a coaching-up program that fits them individually offers a healthier longevity. I feel too, that because the sensory system (identifying) and psycho-sensory system (interpretational) leads the physical horse through space, mental coaching and sensory enrichment should supersede that of the physical. Let the body catch-up to the mind, not the other way around. This is the basis for the old adage, “be patient”. Like ourselves, individual horses learn, grow, and season, to the beat of their own unique drum. Nurture the horse, develop the athlete.

I adhere to a common mantra in my work, for every action there is an equal and opposite reaction, so if the sensory system can optimize the physical, it can also pinion it. The inability to translate information and adapt quickly to changing environments ultimately begins to chip away at any physical advantage the horse has; especially in elevated competition, most especially in classic distance races. Of course, in a horse race comprised of elite athletes anything can happen, so we must look at the body of work and at consistency of performance. Our job at THT Bloodstock is not to determine *what* the horse is, but to do the detective work necessary to identify *who* the horse is; scouting potential is about projecting the future, and because the psyche manages the growth patterns, gaining an in-depth understanding of that psyche is essential to that projection. Our work is not that of saying who will and who will not, but rather in evaluating probability by focusing on sensory soundness and mental aptitude, the command center of the athlete.

When it comes to applying the herd dynamics to handicapping, psychological versatility should not be underappreciated. As you go through the following profiles of the Derby Contenders, and as you put together the pieces of your own puzzle and plays, we work to offer you another window from which to see the race, not as a whole group, but as individuals who thus make up the whole.

When studying a horse I care less about where the horse finishes physically in a given race than I do about where they’re finishing psychologically against their peers. When you look for things that key you in on psychological growth patterns you begin to unveil the emerging character of the equine athlete’s one to the other. These growth patterns are in my opinion useful to note when handicapping a field such as the Kentucky Derby as it’s like putting together a puzzle of both athleticism and psychological versatility in varying environments. I always lean toward the horse whose psychological ‘speed’ and rhythms are the same regardless of the speed of the physical body.

Another essential ingredient lay in the area of influence. High level horses have the ability to influence other horses without themselves being influenced. The difference between elite herd dynamic athletes and their subaltern counterparts lies in the area of their ability to impress their will upon the world around them. Horses with elite minds can supersede physical expectations; mid-level horses can achieve to them.

It is vitally important to keep in mind when looking at individual profiles that a snap-shot of the physical placement of a group of horses at the end of a race does not always indicate the natural herd dynamic hierarchy of them individually. I never get too excited by ‘a’ performance, but by the aforementioned growth patterns in juxtaposed performances. Circumstances can dictate physical location; herd dynamics allows them to manage that.

This year’s Derby has in my opinion a deep collection of highly capable herd dynamics and mental profiles, leaving us much to consider in the smallest of ingredients. Separating the top tier horses in herd dynamic order is not unlike splitting hairs. For me the challenge is very exciting and as I always say, on any given day...; it is our goal with this report to offer a deeper window into the psychological and sensory aspects of the individual athletes. I look for patterns in their psychological rhythms and patterns of motion and think of these in terms of *probability*; how many times out of ten say, does one particular herd dynamic trump another at a mile and a quarter of time-in-motion. I have always felt that psychological versatility is made possible by sensory soundness and the lynchpin that makes a horse tactical; the ability to change gears, adapt and react to sudden changes and stresses mentally paves the way for the body to follow, taking full advantage of talent and speed.

On a personal note I have to say, looking ahead from where I now sit, I am excited and thankful, energized and tirelessly seeking to peer deeper into the window of the invisible. The growth we are experiencing and the awesome amount of detailed data we have been able to collect and track allowing us priceless research to learn from, both where we were right and where we were wrong, has us zeroing in on what I call the *ingredients of greatness*. This is due in large part to the tireless and dedicated efforts of Pete Denk, for whom I’m most grateful.

As a team we continue to take this work to new places and we look forward to those advancements we've yet to discover. Whether at a sale where the scouting process for us is not unlike an NFL Combine, or evaluating a herd of contenders seeking those who show the mental fortitude to fully optimize their athleticism, my thinking is always forward. I never look at what is, without then considering what could be, something imparted to me from my heroes, my parents, who taught their children to have fearless imaginations and to live in a forward direction.

Visit our new website www.thtbloodstock.com and enjoy a dig around and most certainly get in touch with us if there is anything we can do for you. In a financial game of emotionally charged athletes, the economics of behavior simply makes sense.

Thanks Pete, thanks Brisnet, and most importantly, thank you.

~Kerry

"Never underestimate the value of Emotional Intelligence in High Herd Dynamic athletes."

KMT

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

Pete Denk is a consultant, bloodstock agent, handicapper and director of Equine Services with THT. He and Kerry are partners in THT Bloodstock. Pete can be reached at peterdenk@yahoo.com and @petedenk on Twitter.



DORTMUND

Big Brown—Our Josephina, by Tale of the Cat

Dortmund is a freak of nature, an impervious giant that combines enormous size and balance with rare mental and emotional strength.

Trainer Bob Baffert had a horse with a similar herd dynamic profile previously. His name was Point Given, and although he finished 5th in his Derby, Point Given won the Preakness (G1), Belmont (G1), Haskell (G1), and Travers (G1) Stakes. He is in the Hall of Fame.

Watch a couple of Point Given's races and then Dortmund's. The similarities are eerie (other than Point Given's big white blinkers). Dortmund actually scores a little higher than Point Given on mental efficiency at the same point in his career.

Back on November 2 at Santa Anita, Dortmund was raw power on debut. He was throwing his head early to take control of the herd. It was like a bunch of kids in the swimming pool and he's twice as big as any of them. He just grabbed them and pulled them backward, bullying his way in front.

Dortmund shipped to Churchill Downs in his second race. Breaking from the 12-hole, he was wide and in the clear all the way. He is a methodical mover. Both aloof and a bully, Dortmund runs emotionally free. On the head-on we see he gradually destroys the spirit other horses that challenge him. Dortmund is non-reactive to other horses, and that often frustrates and wears them down.

Back to California in the Los Alamitos Futurity (G1), Dortmund had a minor stumble at the start, then fell right into a methodical rhythm. He is fairly graceful for his size. He wanted to take on Mr. Z and Firing Line early on the backstretch, but the rider told him to wait. Dortmund listened. This was a step forward in his emotional control.

In the stretch run, Firing Line and Mr. Z were engaged in intense battle with each other. Dortmund was unable to feed off the energy of the other horses, because at first they weren't concerned with him. He was parked out wide all the way around, and he barely got there in a very methodical effort. That could have been easier. Dortmund didn't yet know how powerful he was.

The Robert B. Lewis (G2) was an awakening. Dortmund looked beaten when he fell a full length down to Firing Line in the stretch. Then he re-rallied through a tight opening on the rail. A rally like that should not happen. It takes amazing herd dynamic power to overcome momentum and lasso another horse in.

This was a very special run from Dortmund. He showed no panic under pressure. He never lost control despite falling behind. He came back with a gritty, unrelenting energy. This tells you Dortmund has an answer when the water gets deep. When you see something like this, you know you are dealing with a special horse.

The Lewis was a huge growth race. Dortmund would not let another horse get in front of him in his final two preps.

In the San Felipe (G2) Dortmund had a slight misstep at the start and then went right into his methodical rhythm on the front end. Note the ear articulation and space awareness. He was taking in a lot of information without affecting his forward efficiency or rhythm, and he was relaxed.

He invited Bolo in to battle and he cracked that one with his unrelenting stride and rhythm. Dortmund showed no stress at all on the gallop-out. That was not hard for him. We see nothing but purposeful motion from this behemoth. He keeps getting better.

Dortmund experienced another bobble at the start of the Santa Anita Derby (G1) and then found his rhythm. Again showing great feel behind while on the lead, he hung on his left lead briefly in the stretch as he psychologically felt back for a challenge. Sensing none, he attacked the open space in front of him. When he decided to run away from the field, it was easy for him. None of the horses behind were interested in challenging his space. They grouped up and all were hitting a wall together, struggling in Dortmund's wake.

Dortmund is a competitive horse, but his desire to be out front is not out of urgency or anxiety. It has been happening because he is fast and dominant, but he is willing to get there methodically. His learned behaviors will bode well for him in the Derby, as will his battles.

Dortmund does often bobble slightly at the start, but he has always recovered. That can become more difficult in the Derby, where decisive traffic situations unfold quickly.

Based on his two most recent runs, Dortmund would prefer to control the herd from the start, but we don't think he has to. His emotional conformation tells us he is unlikely to get in a rush.

Dortmund can influence other horses, and his space awareness is so good that despite his hulking frame, he is likely to be able to handle himself in the Derby chaos. He has an Elite Group Herd Dynamic, and much like Point Given, he could probably rally from any position if he has enough room and time in motion.

Additional Distance, from the mental and emotional standpoint, will be no problem whatsoever.

Dortmund has shown amazing herd dynamic power to go with a huge, efficient physical stride. Combine those traits with rare emotional strength and a vertical growth pattern, and Dortmund is the highest rated horse on herd dynamics in a very good Kentucky Derby field.

Sales inspection notes: We inspected Dortmund twice – at the 2013 Fasig-Tipton Kentucky July yearling sale, and again at the '14 Fasig-Tipton Midlantic two-year-olds in training sale. Both times Kerry felt something special in him. Dortmund already was a giant as a yearling. He had an internal fire and grit, plus the ability to lock onto targets and stay focused. At the two-year-old in training sale Dortmund worked one furlong in :10-1, showing amazing speed and gracefulness for his size. At the barn he demonstrated signs of an excellent Group Herd Dynamic.



AMERICAN PHAROAH

Pioneer of the Nile—Little Princess Emma, by Yankee Gentleman

Everything changed for American Pharoah when the blinkers came off in his second start.

After acting up in the paddock before his debut, American Pharoah stood in the gate poorly, challenged for the lead, and gradually faded to 5th. It was a fairly non-descript run.

Not only did trainer Bob Baffert make the right move next time by removing the blinkers, but he stepped the maiden Pharoah up in class to the Grade 1 Del Mar Futurity!

American Pharoah charged to the front at Del Mar and then felt backwards to his pursuers with his ears. He showed exceptional ear articulation and Group Herd Dynamic awareness for a horse that was sent hard for the lead from the rail. And that move did not sap him at all. He finished very strongly. American Pharoah was truly leading that herd, and you'd be hard-pressed to see straighter, more purposeful motion. With the blinkers off, a naturally-occurring elite herd dynamic animal emerged.

American Pharoah stretched out to 1 1/16 miles in his next start, the Grade 1 Frontrunner Stakes at Santa Anita. Again he methodically took charge of the herd early, all the while showing the ear articulation of an elite Group Herd Dynamic horse. This is a versatile sensory system.

He beat some very good colts including Calculator and Texas Red, who later won the Sentient Jet Breeders' Cup Juvenile (G1) in Pharoah's absence, and he did it with emotional energy in reserve.

Even though he is extremely aware of his environment, American Pharoah runs without stress. His sensory transitions are so smooth you can barely see them. American Pharoah was forging into space in the Frontrunner, and the other horses were following him, being pulled through.

By the end of his two-year-old campaign, American Pharoah was close to a finished product. His identification and interpretation of stimulus along with the translation to body control and forward efficiency already was elite.

In his first start at age three -- in the Rebel Stakes (G2) --- he partially displaced one of his shoes. Dealing with shoe trouble and running on a sloppy track for the first time, American Pharoah showed the ability to adapt to environmental stimulus. He had a lot to deal with in this race, and his senses became more acute and focused. That's the reaction you want to see from a high-level horse.

In the Arkansas Derby (G1), American Pharoah again had a minor bobble at the start but he recovered quickly. He is a pretty good gate horse, but he is so relaxed that sometimes he breaks a little methodically for a horse that wants early position. His assimilation and recovery times are so pinpoint, the break hasn't hurt him so far.

Pharoah settled in second place behind Bridget's Big Luvy in the Arkansas Derby. He showed a little bit more intensity with a forward target, but he did not show any signs of panic. Pharoah was in control and willing to let things unfold over time in motion.

American Pharoah managed the herd behind him while chasing down a rogue who was trying to run away from him, and still never swayed from his methodical movement.

At the very moment Pharoah was putting Bridget's Big Luvy in his place, Mr. Z pounced on him from the outside. This was an advanced challenge in terms of herd dynamics. Pharoah aced it -- showing a seamless transition while handling front-to-back oblique stimulus on both sides. He drew away easily, with emotional gears in reserve. He floats over the ground.

Even though the Arkansas Derby looked a lot like his previous races, it required more versatility of psychology than it would appear on paper.

Watching the gallop-out, he didn't over-compete. He let horses come to him. He knows who he is and he can manage horses from any direction.

This is not a single-minded frontrunner. Herd management is important to American Pharoah, and ever since the blinkers came off, he has owned every herd he ran with.

We have never inspected him in person, but American Pharoah appears to be a very thoughtful horse, physically gifted and generally kind, but with a competitive edge.

One of the special things about him is that he maintains the same methodical, high-functioning psychological rhythm regardless of how fast his body is moving or what the other horses are doing. He employs 360-degree surveillance while maintaining strong forward focus.

The sensory system of high-level horses is one of the primary things that differentiates them from lower-level horses. American Pharoah has an elite sensory system that optimizes his physical ability.

Early traffic is unlikely to compromise his herd dynamic or cause mental stress or inefficiency. While he has the mental tools to rally from off the pace, up-front placement will help his chances in the Derby because it will allow him to operate from within a pattern of motion he has used successfully in the past.

In terms of mental efficiency and rhythm, American Pharoah should have no problem with the Derby distance.

So far, American Pharoah has had no real peer challenges. He was a ridiculously high-level horse at age two. So in that sense, his developmental line looks a little flat compared with Dortmund's. That is hardly a knock, but we had to find some way to decide who gets our top spot.

Also, American Pharoah assumes the responsibility of herd leadership. Doing that against this size and quality of field will be a HUGE task. He might be up to it, but American Pharoah is yet to be engaged in a true battle of wills like the one he could face here.

American Pharoah is a special horse and he has all the tools to win the Kentucky Derby. We rank him a close second on the herd dynamics of this field.

CARPE DIEM

Giant's Causeway-Rebridled Dreams, by Unbridled's Song

With four open-length victories and just one loss – a 2nd in the Sentient Jet Breeders' Cup Juvenile (G1) -- Carpe Diem has a blue-chip resume. After we analyzed those races on herd dynamics and emotional conformation, we liked him even more than his record looks on paper.

It really says something about the quality of this Derby field that a horse like this only made our Top 3, because Carpe Diem is an elite Herd Dynamic horse.

In his debut on September 1 at Saratoga, breaking from the rail was no problem for Carpe Diem. He was extremely efficient from the start, and relaxed through fast sprint fractions. Even when he almost got passed in the stretch run, Carpe Diem never panicked. He showed another gear late, running straight as an arrow.

The communication between Carpe Diem and runner-up Ready For Rye in the stretch was powerful stuff. We now know that Ready For Rye is a very good horse – he later won the Fasig-Tipton Swale Stakes (G2). The makes the subtle way Carpe Diem disposed of the pace setter and then Ready For Rye all the more impressive.

Carpe Diem showed high-level sensory strength, good body control at high speed, and hinted at an elite herd dynamic in his debut run. He also showed an ability to adapt to situational challenges.

Shipped to a new track, stretched out in distance and elevated in class in the Claiborne Breeders' Futurity (G1), Carpe Diem looked elite again. Note the smooth transitions and overall flow in this 6-length win. He showed he can attack open space with the same efficiency he attacks other horses.

Carpe Diem conserves energy extremely well. He was in complete control in this race, showing zero emotional stress.

In his only loss, at the Breeders' Cup, Carpe Diem was a little *keyed up at the start (*See Sale Inspection Notes below). He broke outward and bumped, hurting his early positioning.

He also had his space taken for the first time in his career. Texas Red cut inside of him and surged past on the turn. Carpe Diem was taken back momentarily, but he showed us the recovery response we want to see. He dug in hard and ran down Upstart for second place. He finished very strongly here and won his space at the wire.

This was a methodical, gritty run and a great learning race. This was not a herd dynamic defeat. He got outmoved in the race, but on herd dynamics he still wanted a piece of Texas Red, still challenging for herd leadership on the gallop-out.

Carpe Diem's three-year-old races have been flawless. In the Tampa Derby (G2) he broke perfectly and sat covered up on the rail early. He showed seamless multi-tasking and transitions as the race unfolded. He demoralized three consecutive horses on the turn -- Moonlight Bandit, My Johnny Be Good, and Divining Rod.

As soon as Carpe Diem senses weakness in another horse, he releases them and advances into forward space. This is an elite sensory system, the epitome of efficiency and functionality.

Carpe Diem had another seamless run in the Toyota Blue Grass Stakes (G1). He showed great patience here, not responding to herd chaos or the emotions of other horses. He slowly chewed up Ocho Ocho Ocho, an intense competitor who wanted to fight for space. Carpe Diem did not get sucked into an intense emotional duel. The ability to choose your battles gives rider and horse a powerful influence over their environment and is an important tool for the Derby.

This was another easy win. He was looking for more on the gallop-out, as usual.

Carpe Diem has an excellent mind for additional distance. There are no distance limitations here from a mental/emotional standpoint. Every ounce of physical ability he has is optimized by his elite herd dynamic and sensory system.

Carpe Diem is an Individual Herd Dynamic-slanted horse, so we wouldn't want to see him too far back in the Derby. But he has a highly efficient, underlying Group Herd Dynamic, and that gives him some versatility. There is a tight connection between sensory system, mind and body. That makes for an extremely efficient racehorse.

Sale Inspection Notes: The first time we inspected Carpe Diem was at the 2013 Keeneland September yearling sale. He was a very powerful yearling, basically ticking all our boxes. He was strong into space and showed good distance focus and forward efficiency. His egg of interpretation was elite, and he had an internal fire.

We saw him again at the 2014 Ocala Breeders' Sales Co.'s March two-year-old sale. Carpe Diem worked one furlong in :10-1. Many two-year-old-in-training candidates breeze in a frantic manner, but Carpe Diem had a nice relaxed energy. The overall mental profile was very strong, but **we did have notes on him acting up one day at his barn, displaying some pressure and body language. Momentarily, he lost his efficiency. That was a rare moment for Carpe Diem, but note that we also saw him lose efficiency in the gate at the Breeders' Cup. Carpe Diem bears watching during the lead-up on Derby day to make sure he doesn't waste emotional energy before the race.**

MATERIALITY

Afleet Alex—Wildwood Flower, by Langfuhr

In his debut at Gulfstream Park on January 11, Materiality ran up front with the pace, similar to many of the dirt horses trained by Todd Pletcher. On paper this looks like just another front-running sprint debut victory, but there was potential for diversity and hints of multiple gears in this performance. There were some signs of a special horse here.

Materiality broke well and was ready for a challenge immediately. Right away we saw an efficient environmental awareness with excellent body control and interpretational skills. He adjusted very well to the sloppy track.

In his second start in the Islamorada Handicap, Materiality stretched all the way out to 1 1/8 miles. He was learning control and rhythm over time in motion in this race. Even though he has a tendency to want to go fast and maybe rush slightly, he appeared to listen to his jockey well.

He wasn't completely emotionally extended when beating Stanford. Even when he had Stanford defeated and was leaving him, Materiality was still looking for a running mate. This is a youthful, competitive horse who is always looking for something to do. He mentally rates at a high cruising speed, and he loves one-on-one space battles. His favorite moment is when he is side-by-side, competing with another horse.

In his third start, Materiality stepped up to win the Besilu Stables Florida Derby (G1). He absolutely savored that long one-on-one battle with the more experienced Upstart. This is a good, youthful herd dynamic operating an elite physical body. He is still growing mentally and physically, and he has not met his equal yet on herd dynamics.

Although all his career runs have come at Gulfstream Park in modest sized fields, we do like Materiality's adaptability skills in terms of environmental stimulus. He probably has the skillset to go 10 furlongs, but he is not yet fully seasoned. He is still developing his pattern of motion. He reminds us of a big strong kid.

Keeping Materiality on the straight and narrow, focused properly, will be a key in the Derby. This is the kind of horse who is at his best when on task. And he may need help from his jock to conserve his energy going 10 furlongs. Materiality is a tad busy minded, but as long as he expends his energy forward he is very good.

So far Materiality appears to have a very strong shift to the Individual Herd Dynamic. That tells us he will want to be forwardly placed in the Derby. If he breaks well, he can be a serious IHD presence on the front end. Materiality is a busy-minded, youthful, physically gifted horse that likes protracted battle. And he will be looking for someone to battle with.

Materiality's Derby is probably going to come down to control in the face of herd chaos, mental rating, and how he stacks up in IHD battle with horses like Dortmund, American Pharoah, Firing Line, etc...Materiality is yet to meet a horse as physically talented as himself. When that happens, we will find out how tenacious he is.

Materiality's jockey will have to work out the right trip for him to utilize his skills properly in the Derby. All the tools are there, but right now his body is ahead of his mind. With such a light resume, we tend to think he is not mentally ready for the task of winning the Kentucky Derby, but there is a powerful herd dynamic here, and Materiality is still improving.

Sale inspection notes: We saw Materiality at the 2014 Fasig-Tipton Midlantic two-year-olds in training sale. He worked one furlong in :10-2 and looked very powerful doing it. At the barn inspection he was youthful, at times a little busy, but he showed good ear articulation. He was physically strong, and the foundation of a good herd dynamic was there.

MUBTAAHIJ (IRE)

Dubawi (Ire)—Pennegale, by Pennekamp

No horse has prepped in Dubai and gone on to win the Kentucky Derby -- or really even come close -- but Mubtaahij is a very efficient, powerful invader.

We rate him slightly higher than last year's UAE Derby (G2) winner Toast of New York at the same point in time. That one missed the Derby, but later finished second against America's best in the Breeders' Cup Classic (G1).

There is a fire inside Mubtaahij, but he is a controlled competitor.

He is probably more versatile than he showed in Dubai, but we did note he worked out a similar trip almost every time he ran -- break from the rail, track just behind the pacesetters, let time-in-motion chew them up, then explode home. He will have to work harder to get that same trip in Kentucky.

One of our favorite performances was his only loss in five runs in Dubai, when he was second by a nose in the UAE Two Thousand Guineas (G3). He pushed a horse out of the way to get off the rail and was coming back up the inside on the winner Maftool at the wire. Mubtaahij showed great focus and resolve there. This was a herd dynamic win. He was chewing Maftool up gradually. It showed us more about what is inside Mubtaahij than his runaway wins.

In the Al Bastakiya, he absolutely threw away the previously undefeated Uruguayan champion Sir Fever, a Southern Hemisphere four-year-old. He was no champ in Mubtaahij's eyes.

In the UAE Derby Mubtaahij avenged the previous loss to Maftool while easily dispatching a trio of Japanese horses -- two of them by the elite American dirt stallion Tapit. Mubtaahij's emotional rating is excellent, especially for a horse with this much fire and grit. He shows a great burst into open space and a sustained emotional energy burn when the rider pulls the trigger.

We noticed Mubtaahij didn't switch leads physically in the stretch run of the UAE Derby. Sometimes a failure to change leads comes hand-in-hand with emotional sticking points. In this case Mubtaahij looks so efficient in all other regards, we think it is plausible to chalk this up to differences in training style between the Americans and Mubtaahij's excellent South African conditioner Michael de Kock.

Mubtaahij is a good gate horse, and his space awareness is elite. He knows exactly where he is in relation to other horses. He is an elite interpreter of herd motion. He can move horses with presence, he is maneuverable, and forward-minded. We think he has the tools to navigate Kentucky Derby herd chaos.

Mubtaahij has a fabulous rating gear. He floats along physically and mentally in a wonderful rhythm. He just chews up time-in-motion over distance. We have no doubt about his ability to get 10 furlongs. Added distance is a benefit for him because he is wearing down more slowly than the other horses.

Unless top American horses start prepping in Dubai, there are always going to be significant question marks about the Dubai invaders. American style dirt racing often is run at a grueling intensity that few overseas horses can handle. But there are signs of an elite herd dynamic in Mubtaahij. This will be the biggest challenge of his life so far, but he looks like a legitimate contender in one of the toughest Kentucky Derbies in years.

BOLO

Temple City—Aspen Mountain, by Chief Seattle

Bolo is a herd dynamic powerhouse, but he comes into the Kentucky Derby off a pair of third-place finishes. The first of those was underrated and quite good; the second was a bit dull.

What happened? He ran into a beast named Dortmund. But we give Bolo a lot of credit, especially for the way he took on Dortmund head-to-head in the San Felipe Stakes (G2).

Bolo ran his first three career races on the turf. If his Triple Crown bid doesn't work out, he is a potential star on the green. But Bolo is efficient enough to handle multiple surfaces. He is adaptable, sure-footed and has good body control. Bolo might move more efficiently on turf -- it certainly appears to be a comfort zone -- but he is not the type of horse who will quit mentally just because he doesn't love a particular surface. He is a game, fierce competitor.

Watching those first three turf races, we see signs of elite herd dynamic strength and mental efficiency. We also see a competitive minded, but fairly controlled horse that drives into space with a ton of power.

Bolo can command space. He puts a lot of pressure on other horses and can influence their motion. In the wild, Bolo would certainly be the leader of his own herd.

In the San Felipe he identified Dortmund early on as his main challenger for herd leadership. The pouncing move he put on Dortmund turning for home was a shock and awe attack, meant to quickly overwhelm.

That was a stretch battle between two giant herd dynamics. Bolo tried everything he could to punch a hole in Dortmund. Just about any other horse in this crop would have succumbed to the pressure Bolo applied there. It was a huge, offensive effort that came up short. Running on a new surface, Bolo fired his best shot. He did not hold anything back or play it safe.

In the Santa Anita Derby (G1), Bolo again found a good rating gear. He shows good space awareness and Group Herd Dynamic, especially for a horse with a powerful Individual Herd Dynamic.

But overall he looked a little dull in the Santa Anita Derby. He wasn't his usual fire-breathing self. He sort of just ran around the track out there in a wide path. He did not attack, and his forward drive, usually so strong, seemed muted.

Bolo was brimming with emotional energy in every race until the Santa Anita Derby. It could have been Dortmund's presence, or perhaps that battle in the San Felipe knocked him out for a while. Or maybe he just had a dull day.

Because Bolo was so good in every other race, we lean toward his complete body of work for our overall grade.

Looking to the Derby, 10 furlongs should not pose a problem for Bolo from the mental perspective. He generally gets stronger in relation to the other horses the longer the time in motion.

In many of his races Bolo took early forward position because he is a naturally competitive horse and he has some physical speed. But he is not a need-the-lead type. He is great in one-on-one battles, but he can pick his fights. He also attacks open space very efficiently. Jockey Rafael Bejarano should have some tactical options here.

Bolo has a lot of strong traits, and he is a bounce-back candidate in the Kentucky Derby. On his best day, he has one of the most powerful herd dynamics in this field.

FROSTED

Tapit-Fast Cookie, by Deputy Minister

Frosted comes into the Derby off a significant mental growth race, and that has been a great indicator for Derby success.

It's been a long and winding road, but he put it all together when winning the Twinspires.com Wood Memorial Stakes (G1) under a hand ride.

There were two new variables at play for Frosted in the Wood:

- 1) He had a new jockey (Joel Rosario, who stays on board for the Derby)
- 2) Trainer Kieran McLaughlin trimmed his blinkers back.

We thought Rosario made some great decisions in this race. First, he encouraged Frosted to relax early even though he hopped at the start. He lost early position, but he chose proper energy distribution instead.

Rosario rode him with a lot of confidence, staying wide so he could slowly advance on the frontrunners. There was a moment in the stretch where Rosario almost hit him with the whip but decided against it. He hand rode him through the wire. That was a great decision. Frosted was already in competing mode. He's got that excitable brain we see in a fair number of Tapit progeny, and the whip might have knocked him out of a good groove. This was a patient ride that relied on feel, and Frosted really responded.

Frosted's underlying psychology is still a bit fast, but this was an excellent performance. We love what we saw on the head-on footage. He ran very straight and exhibited excellent body control in the stretch run. He finished this race very strongly, with more control and efficiency than we have ever seen from him.

Frosted did not give Tencendur much thought as he took over herd leadership. This was the first time we saw Frosted assume a leadership position. This was a confidence-building experience.

We thought Frosted's disappointing, fading 4th-place finish in the Besilu Stables Fountain of Youth Stakes (G2) largely was caused by first-time blinkers. He was competing hard from the start of that race, running with ears pinned, burning too hot too soon. He had control of the herd turning for home, but he tightened up as he felt but could not see those horses coming from behind. His body lifted up when that pressure hit him.

The Derby distance, which was a major question for much of his career, now appears within reach for Frosted.

In the Wood he was the aggressor, last early and gradually taking over forward space from lesser herd dynamic horses. There are horses in this field who are going to put up a much bigger fight for space. How will Frosted respond? In previous races, he sometimes over-intensified and lost efficiency in the heat of battle, sometimes burning energy before an act occurred.

Also, Frosted was not pressured from behind in the Wood. That is the one question we still have with the blinkers -- how will he react to a challenge in his rear sensory field?

There are a lot of things to like about Frosted if you are willing to base your read on his most recent race. But his entire body of work is that of a horse that can do a few things well, but nothing great. There are reasons to doubt Frosted's efficiency under fire in this stacked Derby.

We think Frosted has a huge range of possible outcomes. We could see him hitting the board on his best, but we won't be surprised if he has a tough time on Saturday either.

UPSTART

Flatter—Party Silks, by Touch Gold

Upstart is an extremely consistent, talented horse who belongs in this field. But we have some doubts about him coming out on top here going 1 ¼ miles.

We don't like the emotional energy he finished with in the 1 1/16-mile Sentient Jet Breeders' Cup Juvenile or the 1 1/8 mile-Besilu Stables Florida Derby (G1). The Kentucky Derby will be longer and more challenging than those races.

In the Breeders' Cup Upstart got his doors blown off by Texas Red. That in itself was no shame, but he got a little too comfortable in an adjunct role, and failed to hold off a hard-charging Carpe Diem for second. We would have liked to see a little more fight left in him there.

Most recently, Upstart came out on the losing end of a long duel with Materiality in the Florida Derby. He never took his less experienced opponent's space. Meanwhile Materiality was loving the fight, inviting Upstart to come on in and compete. Upstart accepted defeat before the wire. He looked tired, and he stopped trying to run Materiality down. That makes us question his willingness to overcome stress in the face of high-level opponents in Louisville.

Upstart can show good tenacity when he is able to save energy early. The Holy Bull Stakes (G2) was by far his best performance. He nicely dispatched pacesetter Bluegrass Singer and then fought his way through open space.

Upstart runs with grit, but there is an internal conflict to his emotional conformation. He runs with some tension, and for that reason energy conservation is very important for this horse.

His win in the Besilu Stables Fountain of Youth (G2) was not pretty, but he deserved the victory. Itsaknockout was not showing any signs of being able to take Upstart's space. Upstart was gritty to the finish. He got robbed there by the stewards.

Upstart has good space awareness. That will help in the Derby. But so far his environmental awareness has been higher than his environmental control, specifically when there are elite herd dynamics around. That makes him potentially reactionary and puts a cap on his efficiency over distance.

Upstart is a solid horse. He is IHD-tilted, but we don't like his chances in a one-on-one battle with any of the elite herd dynamics in this field. His group dynamic is just average, and so is his emotional efficiency. We place him near the top of our secondary contenders list, entirely likely to hit the board but he would surprise us if he proves best.

FIRING LINE

Line of David-Sister Girl Blues, by Hold Your Peace

Firing Line has the physical ability to win this Kentucky Derby, but there are reasons to doubt he has the right emotional conformation.

In the 'Positives' column, Firing Line is a competitive-minded, athletic horse that naturally seeks forward, open space. He is a good, efficient mover that holds a straight line when not under pressure. He is maneuverable and loves to attack, needing only subtle urging to do so from his rider.

He also received a much-needed confidence builder when he shipped out of Southern California – and away from his rival Dortmund – to win the Sunland Derby (G3) by 14 ¼ lengths.

But we think Firing Line beat a weak bunch at Sunland. And when we dissected his previous losses to Dortmund, we came away awed by the winner and pessimistic about Firing Line's chances in the Kentucky Derby.

The first time Firing Line and Dortmund met was in the Los Alamitos Futurity (G1) back on December 20. Firing Line hooked up on the front end with Mr. Z early in this race as Dortmund stalked the leading pair around the bullring.

The race developed into a three-horse battle down the lane, with Firing Line in between horses. The head-on replay shows that Mr. Z was bearing out into Firing Line while Dortmund was attacking from the outside. That was a very challenging situation from the standpoint of herd dynamics.

Firing Line remained gritty and competitive, but he lost some of his trademark forward efficiency. He got a little wobbly as his focus pinballed left to right between horses, his body drifting and swaying in late stretch. He still finished a respectable second, beaten just a head.

Had Firing Line built on that race, we would be more optimistic about his chances. But in Firing Line's second matchup with Dortmund – the Robert B. Lewis Stakes (G3) -- he suffered an indicting herd dynamic defeat.

Following a slow start, Firing Line fell into a good stalking trip and was well within himself when he cruised up alongside Dortmund at the 3/8 pole. Firing Line and rider Gary Stevens had all the momentum, surging to a one-length lead over Dortmund, who was down on the inside and briefly going the wrong way. They even drifted in and tried to take Dortmund's path away, but the giant colt took Firing Line's best punch and was undeterred. Dortmund re-emerged through a tight opening and asserted control with his steady, superior time-in-motion profile. (Note the rhythm of stride between Dortmund and Firing Line at the wire)

Firing Line's path altered in deference as he slowly became aware of Dortmund's re-emerging presence. There is no way Firing Line should have lost this race. Physically he lost by a head. On herd dynamics, he was soundly defeated.

Firing Line's dominant sensory avenue is forward vision. His mind is usually ahead of where his body is, and he cycles fast. He is so all-in for forward space that once he makes his move for herd leadership, there isn't much left for additional battles.

The longer a horse like Firing Line has to run and the more obstacles he is faced with, the bigger chance his energy burn will catch up with him.

Based on his psychology and his previous runs, there is a high probability that Firing Line will burn inefficiently if he is held up behind horses in the Derby.

Furthermore, close inspection of his film shows Firing Line has not been a very efficient gate horse. His psycho-sensory system is in full-speed-ahead mode even when he is standing still in the gate. That pent-up energy can be expressed in unpredictable directions when the gate opens. A poor start in the Derby would be very hard for a horse with this psychology to overcome.

Sale Notes: We inspected Firing Line twice, as a yearling and as a two-year-old in training. Both times he was an impressive physical specimen – a strong, two-turn body -- and very forward-minded. He also demonstrated a fast energy burn. His egg was ALL forward. He had difficulty interpreting oblique stimulus. Rear stimulus was mostly a mystery to him. He has too much energy to stand still for very long. This profile is fine for races up to 1 1/16 miles, but usually struggles at 9 furlongs and beyond.

FAR RIGHT

Notional—Zindi, by Vindication

Far Right has one of the most interesting development patterns we have seen.

Early in his career he ran as an Individual Herd Dynamic speed horse. He showed mental inefficiency and quirkiness – running off in the post parade before his career debut and inefficiency out of the gate – but also enough speed and physical talent to finish second behind stakes talents Conquest Tsunami and Cinco Charlie going 4 ½ furlongs.

Following a private sale and trainer change to Ron Moquett, a new pattern of motion gradually emerged. What once looked like a sprinter is now a horse that can go two turns -- comfortably dropping to dead last early and making one big run.

The change was gradual. His rhythms were off at first, and he didn't yet understand how to distribute his energy over distance. But Moquett and his riders gave Far Right a series of races to develop into a two-turn horse. The result is a new, defined pattern of motion that has maximized Far Right's distance aptitude.

Far Right made a small breakthrough in the Street Sense Stakes at Churchill. Then a bigger one in the Delta Jackpot (G3), though his finishing position in that race was hurt by a severe checking incident on the far turn. Had he not been stopped, we think he would have been right there with Mr. Z and Ocho Ocho Ocho at the wire. We liked that he re-gathered himself and followed through to get third.

That was a growth race, as Far Right made a strong transition from age two to three, putting it all together in the Smarty Jones Stakes. He did a nice job squeezing up the rail past a tiring horse, then re-broke into open space to get the win. He only hesitated for a second, and once he got through, he was driving into space strongly. He was still full of run and emotional energy at the finish.

While they have done a great job teaching Far Right to conserve his energy for the later portions of the race, they have been unable to iron out his gate inefficiency. It takes him a couple seconds to know where he is at, and his movement from a standing start is not very controlled most of the time.

That was again the case in the Southwest Stakes (G3). It took him a few strides in the mud to figure out what was going on. But he is pretty much smooth from that point. He made a nice long approach to catch up to the front herd, steered outside on the turn and back inside for the stretch. His forward efficiency was improving, and he was getting better at taking forward space. This was a good sustained run that included considerable lateral movement and sensory transitions.

Stretching out to 1 1/8 miles in the Arkansas Derby (G1), Far Right did not move forward, but he executed his pattern of motion again effectively. He simply wasn't in the same league as the winner American Pharoah.

Far Right's new running style allows him the time he needs to sort things out before he acts. Waiting until he is mentally and physically balanced before he makes his move has optimized his performance.

Still, the Derby is going to be a challenge for him. Once his mind and body are in unison, he moves athletically and without fear. But by that point he usually has spotted his opponents a head start.

Far Right has a developed pattern of motion that he has executed many times – that really helps in the Derby. Mike Smith probably will let him drop out of it, then try to pass as many as he can. And he has gotten pretty good at advancing through the herd.

We view Far Right as a candidate to earn an underneath placing, but he doesn't look efficient or talented enough to run all of these down on his own merits.

Sale inspection notes: We inspected Far Right when he was for sale privately after his second career start. At the time he had very sensitive shins and had just come off the track. He was physically strong, athletic, and very body language expressive. He had a big emotional energy but there were inefficiencies on display. We judged him to have a likely distance ceiling of 1 1/16 miles.

KEEN ICE

Curlin—Medomak, by Awesome Again

There is no question about Keen Ice's natural pattern of motion. He is an even-tempered, even moving horse, a pure Group Herd Dynamic animal.

Keen Ice prefers to get a feel for the environment and the herd around him before he even thinks about competing for space, much less herd leadership. The longer he has to build up momentum, the better off he is. He has little urgency in his movement. He cannot be rushed.

This mindset does best at 10 furlongs or longer, so the Derby distance is a plus for Keen Ice.

At distances up to 1 1/8 miles, Keen Ice has lacked a closing hammer. He is good at conserving energy and we haven't seen him pushed around, but we also have not seen him have any extremely powerful moments from the herd dynamic perspective.

Keen Ice has good herd and space awareness, but his ability to manage other horses is only a little above average. He is a long-striding, tank-like mover who depends on the other horses tiring out in front of him.

In terms of Derby chaos, Keen Ice will seek to avoid it for as long as possible. He is unlikely to get involved in anything early on. Although he interprets herd chaos fairly well, physically he is not the most agile horse. The rider will need to choose his path wisely. Keen Ice is not the type that moves too well laterally or hits an opening quickly. That hurt him in his prep races in Louisiana.

His third-place finish in the Risen Star Stakes (G2) was one of his most promising races. He still had a lot of energy to give when they hit the wire of that 1 1/16-mile contest.

In the Louisiana Derby (G2), he made a slightly early wide move and then stayed in grinding gear to the wire and finished 4th. We always like to see a horse winning its immediate space at the wire, so in that regard this was an ok final prep. But the distance increase to 1 1/8 miles only helped him marginally. Keen Ice needed more time to settle and let herd motion play out in front of him.

Keen Ice appears to be an honest horse with a good Group Herd Dynamic and long-distance time-in-motion profile. We view him as a horse who could pick up some pieces in the stretch run, but he is an unlikely contender for a top spot.

INTERNATIONAL STAR

Fusaichi Pegasus—Parlez, by French Deputy

International Star swept the trio of prep races down in Louisiana, and at the surface looked good rallying for wins in the Lecomte (G3), Risen Star (G2), and Louisiana Derby (G2).

But when we dove into his film, we saw some things that led us to question his ability to pull off that kind of winning run in the Kentucky Derby.

International Star is a Group Herd Dynamic closing type that is agile physically and forward-minded. He runs hard. The part we don't like about his profile is that he has some sensory deficiencies.

International Star has raced with blinkers his whole life, and with nine races, his pattern of motion is well developed. While International Star attacks forward targets with zest, he is not very good at interpreting lateral and rear stimulus.

There is definitely some eye dependency here and a deficiency in his sense of feel. We don't know if the blinkers have made it worse or better, because we have never seen him without blinkers.

Being against the rail is a very good thing for this mindset, because it provides a sensory guard rail that he doesn't have to think about. Running against the rail eliminates 50% of the opportunity for oblique stimulus. Notice how rider Miguel Mena kept International Star against the rail at every opportunity in the Louisiana races.

Watch what happened when International Star took the lead in the Lecomte. He floated all over the place. His lateral/oblique sensory issue was responsible for that inefficiency. He didn't know where he was in relation to the horses he just passed. As soon as he lost his forward targets, he lost his forward efficiency.

International Star worked out a very comfortable trip in the Risen Star. He got over to the rail and used forward targets to pull him through the inside. Mena did a great job keeping his mind on business. As soon as International Star cleared the frontrunner, Mena put him to a drive using his whip. You can see Mena learned from what happened in the Lecomte. He did not want to give him a chance to start drifting laterally.

International Star again rallied up the inside in the Louisiana Derby, tipped two-wide, and won a prolonged stretch battle with Stanford. It was a good performance, but we can't help but think he is going to have to run down some much tougher opponents, through much more traffic, in the Derby.

For a Group Herd Dynamic horse, International Star has faster, forward rhythms. He is very gritty and not afraid of other horses or tight spaces. He is a competitive minded horse who likes to be in a fight, and he will shoot through gaps.

We don't question his athletic ability, but there is a good chance his sensory issues will haunt him in a race as chaotic as the Kentucky Derby.

If Mena can find a way to stick to the rail and time his move perfectly, International Star might have a chance. But he did not face any of the top herd dynamic members of this crop down in Louisiana. A lot of things will have to break just right for him to be out front at the wire, and there are reasons we may not see his best form here.

WAR STORY

Northern Afleet—Belle Waiting, by Pulpit

Trainer Tom Amoss is taking the blinkers off of War Story in the Kentucky Derby, and we think there is a chance that could leave to improvement. We only wish War Story had a practice race before the Derby without the shades.

War Story has worn blinkers in all five of his career starts. From a sensory and herd dynamic standpoint, his debut was his strongest race.

Going 7 furlongs back in November at Churchill Downs, War Story broke slowly and was in 8th place, about 10 lengths back at the first call. From that point he produced a really impressive sustained run. With the field stretched out in front of him, he showed strong sensory perception and seamless transitions. He looked very strong running through open space and approaching other horses. This was a very promising debut.

War Story was sold privately and transferred to Amoss before his second start. Due to poor video quality and no real record of such things, we cannot tell if the blinkers he wore for the new connections were more restrictive than what he wore in the debut. But for some reason, War Story took a step backwards in terms of sensory perception and efficiency.

Running in an allowance race at Fair Grounds, War Story bumped at the start. We noticed more head movement, decreased sense of feel and increased eye dependency throughout this race compared with the debut. War Story won this race by 2 ¾ lengths, but it was not an efficient performance. War Story took a long time to put away A Day In Paradise because he floated out very wide while under a left-handed whip in the stretch. That was in contrast to his first race when he maintained a very straight line even after clearing the field and forging into open space. Here it was like a guard rail was missing.

In the Lecomte Stakes (G3) War Story drifted in and bumped at the start, showing poor space awareness. He worked out a good trip and made a nice move turning for home, but then he bumped off of Tiznow RJ a couple times in the stretch. War Story's Group Herd Dynamic did not look good there; he was unable to multi-task, and International Star went by him on the outside.

In the Risen Star Stakes (G2) War Story hesitated out of the gate, but then delivered a fairly strong run. He has a nice competing mode and drives hard into open space when he is comfortable.

He moved with International Star for much of the Risen Star. International Star found his way through inside, while War Story went outside. War Story drove through the wire strongly, although he didn't see International Star emerge up the rail until pretty late. The blinkers might have hurt him there.

The Risen Star was an improvement race, but he failed to build on it. War Story tried hard in the Louisiana Derby (G2), putting in a decent wide run, but he bore in during the stretch, wound up behind International Star and could not keep pace with the top pair.

We have not seen War Story acquiesce to other horses. We have seen a lot of inefficiency, sensory drag and an uneven growth pattern.

There is a chance the blinkers are negatively affecting him. They could be causing him to expend mental energy on things he doesn't need to and messing up his Group Herd Dynamic, space awareness, etc... There also is a chance the blinker are covering up a weakness.

We have never inspected War Story in person, but we viewed a workout video from the Fasig-Tipton Midlantic two-year-old sale in which he appeared to be wearing less restrictive blinkers, and we think it looked promising.

We lean toward the conclusion that there is more horse here. There is a good underlying Group Herd Dynamic here based on the debut run. And War Story has an above average Individual Herd Dynamic. He is a competitor and he's never lost because of lack of effort or willpower.

War Story's mental efficiency zone so far looks like it plateaus around 1 1/16 miles, but that could change with the blinkers off.

War Story is a mystery horse that has a chance to improve in the Derby, perhaps significantly, without the blinkers, but he will need to take a significant step forward even to be competitive.

DANZIG MOON

Malibu Moon-Leaveminthedust, by Danzig

Danzig Moon is an improving, athletic horse. But to have any impact on this Derby, he will need a big leap forward in the mental department.

His career started roughly. He was green in his debut, largely because his space awareness was all messed up. He was not processing the language of herd motion very well as he chased and finished 4th.

Stretched out to one mile in his second race, Danzig Moon broke outward and uncontrollably, bumping hard at the start. Again he showed poor space awareness here, constantly touching and bumping other horses. That actually helps him to know where he is at. He rallied for 2nd through an eventful trip. That was a mentally inefficient but impressive physical run.

Danzig Moon made some improvement from age two to three. In his maiden victory in February, he still took a bad step right at the start but he recovered and looked strong in the stretch after stalking the pace from wide position throughout. He looked more seasoned there, with clear growth in the Group Herd Dynamic.

At the start of the Tamp Derby (G2), Danzig Moon jumped outward into open space, then latched onto the herd. He tends to latch onto horses when he doesn't know where he is at or is under stress. That puts a little buddy-up syndrome in him. It's not that he isn't competitive or doesn't know how to release horses, his buddy-up is a temporary security blanket to get through tough spots. He didn't have an easy trip for a horse with interpretational issues. He did ok to finish 4th, but was just along for the ride late.

In the Toyota Blue Grass Stakes (G1), Danzig Moon veered in and bumped early. Overall he ran ok for second here behind Carpe Diem. Though he was not threatening the winner, this race represented another small step forward for Danzig Moon.

The Kentucky Derby will present much more difficult challenges, and we haven't seen any signs that Danzig Moon has improved THAT much from a mental efficiency standpoint.

Danzig Moon is a hard-trying, athletically minded horse. He likes to compete and he is improving. But there are holes in his sensory awareness and Group Herd Dynamic. He is likely to find trouble in the Derby.

We are neutral on him adding distance. It's not necessarily the distance that will get him beat, but the stuff that is likely to happen during that time in motion.

Sale Inspection Notes: We inspected Danzig Moon at the 2014 Keeneland September yearling sale. He looked like an athlete physically, but he was holding a lot of internal pressure and we tagged him with our "pressure up" label. His head sometimes goes up when he is under stress, particularly in close-space situations. This trait can hurt a horse's forward efficiency. This might be associated with Casse's reason for outfitting Danzig Moon in blinkers in all his races.

EL KABEIR

Scat Daddy-Great Venue, by Unbridled's Song

El Kabeir underwent a drastic change in his pattern of motion in his most recent two races. After pressing the pace in his first seven races, he has learned to drop back and run as a deep closer.

We don't know if this came about through training or by accident. But in the Gotham Stakes (G3) El Kabeir fell back early after an awkward start. This gave him a chance to settle and size things up while out of the fray, and he appeared to like it.

Running without any pressure near the back of the pack, El Kabeir gradually dialed in and targeted forward. When he got the lead in the stretch he drifted over to the rail and drew away.

In his next start in the Twinspires.com Wood Memorial Stakes (G1), rider CC Lopez chose to keep El Kabeir out of the fray. He checked him back early when Daredevil and Tencendur were trying to push to the front and get over from the outside. El Kabeir dropped back to 7th and last.

Lopez gave him a very patient ride on the far turn, allowing everyone else to push forward first, then making a late move that resulted in El Kabeir finishing third behind Frosted and Tencendur, whom he had beaten easily in his previous two runs. El Kabeir finished with good energy, but this was a very safe, non-aggressive trip. He only passed beaten horses and he never really tried to win this race.

This new pattern of motion stretches out El Kabeir's distance aptitude compared with the way he ran in his earlier races. But there is a connection – whether at the back or in the front, El Kabeir prefers open space.

El Kabeir broke his maiden by 10+ lengths in his second career start going 7 furlongs at Saratoga. He broke sharply and showed good body control while setting sharp fractions on the lead. He was driving into open space and running with emotional freedom. He does not rely on other horses for rhythm or line.

In the Champagne Stakes (G1) he broke a little slowly from the rail over a sloppy sealed track. El Kabeir bounced off of Upstart, ran away from him, then rushed into the front herd. His motion got a little squirrely battling for space in that front pack. He fell back and ran evenly for 4th. His close space interpretations looked less strong there at the Grade 1 level.

In the Nashua Stakes (G2) he looked very comfortable out on the lead in open space. They added blinkers here. It helped him open up early, made him more forward, but it compromised him late. When Blofeld entered his space from behind in the stretch, the limited vision field hurt El Kabeir. He didn't really react to Blofeld until that one got a half length ahead, and by then it was too late. They took the blinkers off after that race.

In the Kentucky Jockey Club Stakes (G2) again El Kabeir looked great running free out on the lead. He just lasted here going 1 1/16 miles. At this point in his career he was very shifted toward the Individual Herd Dynamic. He was mostly a pure speed horse, with just a little underlying Group Herd Dynamic.

In the Withers (G3) El Kabeir felt Far From Over coming and it negatively impacted his forward efficiency. It is hard to say if he has a glitch in his space awareness or if he is a mid-level herd dynamic and is overly reactive to close space battles with high-level horses. We would love to inspect him and find out.

We think a stretch-running style is El Kabeir's best shot at a respectable finish in the Derby, and it was good that they re-enforced this pattern of motion in two consecutive races. But we don't view him as a win contender. It is hard to stay out of traffic for very long in the Derby, and 'safe' rides generally don't win. El Kabeir is a good physical athlete with an above average but not elite herd dynamic.

STANFORD

Malibu Moon-Rosy Humor, by Distorted Humor

Despite running from off the pace in his first three career starts, all sprints, Stanford is a pure Individual Herd Dynamic speed horse.

He broke 5th in his debut but he was burning IHD power throughout. He ran past those horses like he was a speedboat. His tail end was the pivot point as he looked left and right for targets to engage.

Stanford experienced another poor break, stumbling at the start of the Saratoga Special (G2). He tried to replicate the pattern of motion from his debut and swoop the field, but he burned out. He tried very hard but he was running with a slightly frantic energy.

Stanford dropped into a NW1X allowance race in his three-year-old debut. His start would have been better, but he got bumped and cut off. He showed better body control overall in this race, and he really exploded late. He won going away, but he lost some body control due to the excitement of competing and passing horses. He wants nothing more than to run as fast as he can.

In the Islamorada Stakes he burst sideways at the start with a reckless energy. Going to the lead here we finally got to see his true pattern of motion. Unfortunately for Stanford, he was up against a very strong horse on the front end – stablemate Materiality. Stanford felt a lot of pressure in that situation and he had the expression of a horse being chased down from behind on the backstretch and turn. Again his rudder came out of the water at one point and he impeded several rivals. Stanford finished second but was DQ'd back to 6th.

In the Louisiana Derby (G2), Stanford broke out of the gate much better and delivered an overall improved performance. Setting all the fractions, he couldn't quite hold of International Star, but it was a game run. This was his most efficient performance, and he ran very hard. Stanford will run as far as he can for as long as he can. He looked good here and this was him at his absolute best.

The stretch battle with International Star was Stanford's only space battle of the Louisiana Derby. He might have been helped by the rail, as it gave him one less thing to think about. He really didn't have to deal with any herd chaos, and that is a major concern in the Derby.

Stanford is not the most versatile horse and he has a history of inefficient starts. This is a sprinter/miler mentality that puts the pedal to the metal. He will give you every ounce of his ability.

Because of his rapid-fire psychological rhythms, 10 furlongs in Derby company and herd chaos is likely to burn Stanford up mentally.

He needs to break well and get out front, but even then he is likely to have some serious IHD competition, including Materiality, who beat him in the Islamorada easily. Stanford is an admirable competitor, but he looks overmatched.

MR. Z

Malibu Moon- Stormy Bear, by Storm Cat

Mr. Z is a game, talented athlete with sensory issues that negatively affect his physical efficiency.

His biggest and most noticeable problem is his habit of drifting out. It happens when another horse applies pressure to him from the outside, when he is asked to go up the rail, or when he is hit left-handed. Or sometimes it just happens out of the blue.

The other riders in this Derby are advised to take notice. Mr. Z is a potential menace if he is on your inside.

Mr. Z must be a tough horse, physically and mentally, considering the way he has been campaigned. He ran eight times as a two-year-old, including an unheard of late-season trifecta consisting of the Sentient Jet Breeders' Cup Juvenile (G1), Delta Jackpot (G3), and Los Alamitos Futurity (G1) over a seven-week span. He tried his eyeballs out in all three races.

There is no denying his physical talent. Mr. Z was right there with two of the faster colts of his generation – Dortmund and Firing Line – in the Los Al Futurity. He was getting out badly on the backstretch and then again during an intense stretch drive. He still finished third, beaten just a head.

His talent and sensory issues have been evident from the start. Mr. Z posted a really nice debut win at Churchill Downs back on June 28. He battled on a hot pace, got yanked back when things might have gotten a little tight on the rail and then re-rallied wide for the win. We wonder if jockey Corey Lanerie sensed Mr. Z's discomfort with the inside there?

Next in the Sanford Stakes (G3) at Saratoga Mr. Z Broke broke awkwardly and bumped at the start. Then he ran up into a hot pace and was checked on the turn. Again Lanerie decided against going up the inside with him. In order to get out, Mr. Z bumped hard with Big Trouble, got the lead and then was run down by that same foe.

Mr. Z is not afraid of other horses. He has grit and plenty of fight, but when you have to move other horses physically like a bumper car that takes a lot of energy.

Mr. Z's performance in the Claiborne Breeders' Futurity (G1) apparently was the race that led trainer D. Wayne Lukas to add blinkers. Mr. Z lost ground on the backstretch of that race when inside of horses. He finished fairly well when he got in the clear, but by then it was too late to catch up with Carpe Diem.

Blinkers were added for the Breeders' Cup Juvenile. Bumped at the start, Mr. Z was ridden very aggressively, dueling for the lead through a hot pace. He again was involved in some bumping in the stretch, though it wasn't his fault this time. He fought all the way but understandably tired and finished 5th. All things considered that was a good effort.

He ran well again just three weeks later when losing a head-bobbing photo to Ocho Ocho Ocho in the Delta Jackpot. Then came the eventful third at Los Al.

Mr. Z has finished third three times and ninth once in 2015, running well but also showcasing his quirkiness. Turning for home in the Smarty Jones Stakes he looked like he had the race won. He just needed to move efficiently forward into space, but he bore out so badly that he was closer to the grandstand than the rail at the finish.

Lukas tried taking the blinkers off in the Louisiana Derby (G2), but that wasn't the answer either. Mr. Z got a good trip but backed up badly when put under pressure on the turn between horses.

The blinkers went back on for the Arkansas Derby (G1), and Mr. Z Broke fast but immediately started drifting out. He did not look comfortable approaching the rail into the first turn. His forward efficiency improved when he was guided to the outside on the backstretch.

We can't fault his effort. He made an aggressive approach to American Pharoah turning for home, but that one had several gears in reserve. Mr. Z temporarily put some space between himself and the rest of the field while American Pharoah burst away effortlessly.

Mr. Z hit his distance wall there at 9f. Far Right ran by him near the wire for the third time this year.

Given his history of sensory issues, we don't think Mr. Z wants any part of Derby herd chaos or 10 furlongs. The best case scenario, for him and for the sake of the rest of this field, is a far outside draw.

ITSAKNOCKOUT

Lemondrop Kid—Stormy B, by Cherokee Run

Does Itsaknockout have a herd dynamic knockout punch? So far we haven't seen it.

Itsaknockout looked like a long-distance grinder being asked to run short when he won his debut going seven furlongs at Gulfstream Park in December. We gave him credit for winning at a distance not in his psychological wheelhouse, but we also noted some herd dynamic traits we did not like.

Itsaknockout showed a little stickiness in his transitions and delayed release points when he got alongside the tiring pacesetter. He was very slow to put that horse away, and it almost cost him. But it was only his debut, and his type of methodical energy and drawn out transitions usually play better at a route.

Stretched out to a one-turn mile in his next race, Itsaknockout took a very nice step forward, beating a NW1X field by 5 lengths. He displayed a steady, methodical rhythm that slowly built in intensity.

Watching the head-on footage, we see that he held a nice straight path in open space during the stretch run. He moves extremely free in open space. He is perfectly fine being by himself. So far his only compromises have come when in tight space with other horses.

In the Besilu Stables Fountain of Youth Stakes (G2), he approached Upstart a little greenly, and then when bumped lightly he deferred too quickly for our liking. Regardless if he passed him or not, we would have liked to see Itsaknockout try harder through the wire. As soon as rider Luis Saez pulled up on Itsaknockout, he quit. Upstart stayed on task through the wire despite the bumping. On herd dynamics, the Gulfstream stewards handed Itsaknockout an undeserving decision.

We always like to look at the reactions of other horses to tell us about the herd dynamic of our study horse. Upstart was not afraid of Itsaknockout approaching him from the oblique. He did not give Itsaknockout any space respect. Itsaknockout was not moving with enough authority to make Upstart worried.

Itsaknockout made that stewards' decision look even worse in his rematch with Upstart in the Besilu Stables Florida Derby (G1) when he finished 4th, beaten 21 lengths. Itsaknockout broke well but looked uncomfortable after battling for stalking position.

Saez put Itsaknockout in a drive rather early, before the field hit the far turn. He made a small move but couldn't stay with fellow closer Ami's Flatter and fizzled out. He was distanced by Materiality and Upstart.

Itsaknockout is a good gate horse. He appears to be sensory sound, and from what we can see, his natural rhythms are those of a distance horse. He shows good environmental stimulus interpretations when in open space, but he sometimes goes from free-moving to reactionary when challenged. We see glimpses here and there of reactive traits when he gets in tough spots. And the Derby is usually full of tough spots.

The problem does not appear to be the sensory system, it is the psychology. Itsaknockout will need very strong leadership from his jockey in the Derby.

Itsaknockout has potential, but he needs to improve mentally to be a threat here. He hasn't learned to own space and dominate. The distance itself should not be a problem, but his gumption, his Individual Herd Dynamic fight, is a big question mark.

Sale Inspection Notes: We inspected Itsaknockout at the 2013 Fasig-Tipton Saratoga Selected Yearling Sale. Our notes indicated a well-balanced, two-turn horse from the physical perspective. He demonstrated a big group herd dynamic and was a very fast reader of intent. He was acutely aware of his environment, borderline too aware, and he had some reactionary moments. He moved a tad apprehensive into new space. Realizing when a horse may be TOO environmentally aware has been a recent breakthrough in our research. Sometimes the "smart" horse is not the best racehorse.

TENCENDUR

Warrior's Reward—Still Secret, by Hennessy

Tencendur earned his way into the Kentucky Derby field with a second-place finish behind Frosted in the Wood Memorial Stakes (G1).

This was Tencendur's second race wearing blinkers and by far the best performance of his career. But after analyzing all five of Tencendur's starts, we are not sold on his chances to keep moving forward or even repeat that run in the Derby.

Tencendur started his career on December 12 over the inner track at Aqueduct going 1 mile and 70 yards. He was very green in his debut and finished third, beaten six lengths by Far From Over, a horse we like very much who was injured and will not make the Derby.

In his second start, Tencendur dropped in class and broke his maiden vs. New York-bred company. He did a good job getting out in the stretch run, winning a protracted space battle with one horse, then releasing that foe and running down a couple horses on the lead.

Watching the head-on, we see that his body control was a little shaky but he came through for the win. It was smart to drop Tencendur in vs. New York-breds, as he needed easier competition at that point in his career. This was a herd dynamic growth race.

Tencendur went back up the class ladder in his next start in the Withers Stakes (G3). He again encountered Far From Over and got pushed by that one turning for home. Racing against winners for the first time, Tencendur's forward efficiency did not look good. He finished fourth here, never threatening for herd leadership.

The connections decided to add blinkers in his next start the Gotham Stakes (G3), and Tencendur's space awareness was all screwed up. The blinkers negatively affected his efficiency, as he was unable to negotiate traffic very well. His transitions were severely compromised, and he finished a non-threatening 5th to El Kabeir.

Tencendur took a nice step forward in the efficiency department in his second blinkered race. Breaking from the 7-post, jockey Jose Ortiz sent Tencendur at the start. The blinkers worked this time, and Tencendur was forwardly placed, in the clear throughout.

This was a much more efficient, forward run than we have seen from him in the past, but he did not have to handle any traffic. Frosted, who was further back of the modest fractions, still ran Tencendur down fairly easily.

Tencendur is learning to run with blinkers, but he still has a long way to go before he can match up with the top horses of his generation. His Group Herd Dynamic, already fairly average to begin with, is compromised by wearing blinkers. His Individual Herd Dynamic is not very strong either.

This is a case where the connections are hoping the blinkers will simplify things for Tencendur, block his weaknesses and make him more forwardly focused. That can help horses win everyday races, but it does not work very well in a race like the Kentucky Derby.

Top horses impose their will on the environment. Mid-level and lower horses are reactive to the environment. We put Tencendur in the latter category.

OCHO OCHO OCHO

Street Sense—Winner, by Horse Chestnut (SAF)

Ocho Ocho Ocho is a forward-minded horse with a depth of competitive energy, but we don't think he's a Kentucky Derby horse.

Ocho Ocho Ocho runs with purpose, like a missile, and he burns hot.

His win on the Breeders' Cup World Championships undercard in the Juvenile Sprint Stakes was very illustrative. Ocho broke fast and efficient and battled for the lead, showing the ability to emotionally rate even when fighting for space through hot fractions (:21-2, :43-4).

The impressive part came when he re-kicked strongly in the lane. His mind was just flying at this point. He drifted out considerably in the lane while finishing full of run. There is a depth of emotional energy here, but he expends a lot too.

Ocho stretched out to two turns successfully, albeit going 1 1/16 miles on the tight speed track Delta Downs, in the Delta Jackpot (G3). Breaking from the 10 post, he got over and found a good spot in 4th on the inside and showed a rating gear. It's high-zone Group Herd Dynamic – still cycling fast – but he did a good job here. Ocho is a very tactical horse, and Mike Smith used him early to advance and take the lead up the rail.

He surrendered that lead to Mr. Z but re-kicked and competed very nicely to win a head-bobbing victory. This was a sharp 1 1/16 miles and he was used early and still re-rallied gamely. He probably doesn't want to run much further than this.

Ocho Ocho Ocho's three-year-old debut in the San Felipe Stakes (G2) did not go well. He was off to a poor start and then was checked hard in traffic. His psychology is so far forward, if he can't get the position he wants early, he is in trouble. He still burns mental and emotional energy when his body is not being allowed to run fast.

This was also Ocho's first race in four months, so he may not have been at his peak to begin with, but he faded back to 8th beaten 15 ½ lengths behind the winner Dortmund. Going 1 1/16 miles Ocho Ocho Ocho can't afford to waste any energy.

Trying 1 1/8 miles in the Toyota Blue Grass Stakes (G1), Ocho broke alertly from the rail and was in IHD mode early to get the lead. Carpe Diem was parked right outside of him, putting a lot of pressure on him, and Ocho was running with a lot of intensity.

The pace of the Blue Grass was relatively slow compared with what Ocho has done previously – :24, :48, but that didn't seem to help him. Ocho's psychology burns in a pretty high zone regardless if he is going :46-2 or :48. Asking him to go slower actually can take away his strength.

Ocho ran his heart out here but couldn't stay with Carpe Diem and Danzig Moon in the stretch. The rhythm of Ocho's motion compared with the top two made him look like a miler that had reached his limit. He looked maxed out while fading to 3rd-place.

If nine furlongs is too far, 10 furlongs vs. a bigger, stronger field is going to be a huge challenge.

Sale Notes: We inspected Ocho Ocho Ocho in April 2014 at the two-year-old in training sale in Ocala. At the under-tack show he worked 1 furlong in :10-1. He and his rider weren't on the same page early in the work, but once Ocho changed leads he was moving nicely, showing very strong forward focus and good body control. At the barn we observed an athletic, medium or smaller-sized individual with a big Individual Herd Dynamic presence. His profile was that of an Individual Herd Dynamic-shifted horse, with the rhythms of a sprinter-miler. He had a very strong forward energy and competitive spirit. His overall demeanor was a tad hot blooded and he sometimes experienced body language eruptions to blow off excess pressure.

FRAMMENTO (AE)

Midshipman—Ginger Bay, by Golden Missile

Frammento debuted going 7 furlongs at Saratoga and ran a fine 4th. He finished with good emotional energy, fighting for space up the rail. He looked like a horse that needs more distance.

Stretched out to 1 1/16 miles at Keeneland in his second race, Frammento broke his maiden. He looked at home going two turns, even on this sharp track configuration. There were some minor inefficiencies here and there, but this was an overall improved run.

Next Frammento took on winners at Churchill Downs and ran a pretty good 4th. He was making his move on the turn when Flashaway rolled past him on the outside. Watch how Frammento reacted to losing his space – he moved laterally and was turning his head to see (interpret) what was unfolding. That delay hurts his forward efficiency. The good news is that Frammento regathered himself and fought back all the way to the wire. Frammento was defeated, but he did not quit. Also, he can handle more ground than 1 1/16 miles.

In his next race Frammento shortened up to a one-turn mile at Gulfstream and ran a good second behind Bluegrass Singer. He made two separate moves, one to get up into contention, then another in the lane. He is not 100% efficient, but he again showed us he has a lot of try and he can handle more ground.

Frammento was a non-factor in the Lambholm South Holy Bull Stakes (G2). He got jostled a little early and tried to launch his rally, but he could not make up any ground. He finished 6th, beaten 18 ¾ lengths by Upstart. He wasn't ready for the sustained pace of graded stakes company.

Trainer Nick Zito added blinkers to Frammento for the Besilu Stables Fountain of Youth Stakes (G2). He ran the same general pattern of motion with the blinkers, but he showed better forward focus and efficiency in the lane. His late move was aided by the horses on the front end tiring out and physically battling each other. Still, this represented improvement. Frammento was finishing hard again.

In the Toyota Blue Grass Stakes (G1) they removed the shadow roll but kept the blinkers. It did not appear to make much difference. The blinkers have not helped his eye dependency or his forward efficiency out of the gate. Frammento was 11 lengths back at the second call, but he came with a steady, gritty rally to get fourth place.

From the sensory standpoint, Frammento is not the sharpest knife in the drawer, but he does not mentally quit.

Mental efficiency is his biggest obstacle, especially in the Derby. His eye dependency is likely to hurt his ability to interpret herd chaos out of the gate. That is likely to cost him early positioning and leave him with a lot to do in the middle and latter stages. And the more Frammento has to do, the more chances his inefficiency will cost him a length here and there. He is a good physical talent, but not good enough to spot Grade 1 horses any lengths.

Frammento doesn't use his sense of feel when he is under pressure, especially now with the blinkers on. He goes eye dependent when under pressure, and he also is a little bit sticky in his transitions.

We sincerely admire his grit and effort, but we doubt he has the mental efficiency to make an impact in the Derby.

Sale Inspection Notes: We inspected Frammento at the 2013 Fasig-Tipton July Kentucky yearling sale. We did not have a lot of notes on him other than that he exhibited eye pull that negatively affected his efficiency.

TALE OF VERVE (AE)

Tale of Ekati—Verve, by Unbridled

Tale of Verve debuted wearing a shadow roll and blinkers – a sign that the connections thought they had some mental/behavioral issues to address.

Sure enough, he broke poorly and was 18 lengths back after four furlongs! Tale of Verve rallied in the lane to finish 4th, beaten 2 $\frac{3}{4}$ lengths. That rally might have been eye-catching, but when we watched the head-on replay, it looked like a sensory train wreck. He had no space awareness and was all over the track.

Tale of Verve ran three more times with blinkers. If you want to see a horse struggling to interpret herd motion, one whose physical pace is being disrupted by psychological pressure, then watch his videos.

His blinkered races were extremely eventful. Blinkers are supposed to channel a horse's focus forward, but Tale of Verve was a terrible gate horse wearing blinkers and his entire pattern of motion was plagued by inefficiency.

They finally took the blinkers off of Tale of Verve in his March 5 race at Fair Grounds. The result was a drastic improvement in rhythm and space awareness, but there were still plenty of issues on display. He still popped out of the gate like a pressure-up horse. He moves up and out, not forward. And he stuck to horses when the rider asked him to go. That was an extremely drawn out, sticky transition. When he finally released, he finished with energy.

In his second non-blinkered race, Tale of Verve broke his maiden going 1 $\frac{3}{16}$ miles at Keeneland.

There is room for improvement in Tale of Verve. He has some physical talent and a depth of emotional energy, along with all kinds of mental inefficiency. He is one of the quirkiest horses we have ever profiled. We would wager that trainer Dallas Stewart has some interesting stories about this colt.

With a win at 1 $\frac{3}{16}$ miles, distance is not the question here. Tale of Verve might be able to run all day, but the Kentucky Derby is perhaps the most mentally challenging race in the world, and we seriously doubt Tale of Verve is ready for this.

Sale Inspection Notes: We saw Tale of Verve at the 2014 Keeneland April two-year-olds in training sale and gave him a below average mental grade, noting external pressure issues.

GLOSSARY

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

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

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

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

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

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

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

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

Herd dynamic: a general term we use to describe a horse's overall herd level (its group and individual herd dynamics combined).

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

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

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

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

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

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

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

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

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

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

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

THE EQUINE SENSORY SYSTEM

Position Paper by Kerry M Thomas

There are four main senses the horse uses to interpret and manage itself in its environment: sight, sound, feel and smell. The equine sensory system is designed to work *independently together* as a form of checks and balances; this being the fundamental base strategy for self-preservation and sustainability of the species and herd in variable and changing environments. In detail, this then is the foundation upon which the principles of adaptability are founded and allows Mother Nature to conceal her leadership in plain sight; vital for a species designed to live in the open country amidst predators.

The efficiency which each independent sensory system communicates, or as I often like to say *transitions* or *hands-off* stimuli like a baton, has a great impact on many things, including physical output, comfort zones/running styles, patterns of motion and herd dynamics. These things are pieces of the puzzle that are both the fabric of herd life and of the individual Emotional Conformation Profile (ECP). This overall efficiency or lack of impacts the individual's ability to interpret and react to the environment, thus defining them as individuals within the herd itself; different levels of communication allow for a chain of command in the social structure.

To offer an example of how you may envision a stimuli *transitioning* through the sequence of the senses, which is of great importance to a Thoroughbred Race Horse that needs to move and manage situational chaos while the body is moving with great energy, I ask you to think of a slinky and a staircase.

The slinky represents the stimulus (which needs to be both identified and interpreted quickly, so as not to impede an efficient physical motion); the steps representing the senses. As the slinky comes into contact with the step it is hitting, that sense requiring identification, which is the recognition of its presence on contact, and then its interpretation, which allows for it to be efficiently *handed-off* to the next sense as needed, if needed.

A smooth transition through the sequence allows for a smooth physical pattern of motion. However, if the horse is sticky in any one of the sensory areas, we will see an impact on the physical motion of the horse. The slinky, once triggering a sensory avenue, is *identified* and there it will stay until *interpreted*. If however, the horse is experiencing any deficiency in that particular sense, be it from a physical issue or impediment or psychological *learned experience*, one end of the slinky will stick to that sense even while it is stretching to transition, to land upon the next step, until it hits the step the horse depends on for its primary form of interpretation. As the slinky then becomes identified it is finally released and snaps back into shape, if you will, causing a ripple effect in the body, that sudden knee-jerk reaction to stimuli we often see in horses for *no apparent reason*.

The sensory system's influence on the efficiency of physical distance for the race horse is also of great importance. There are two different horses that have to be considered; one is the physical horse and the other the emotional horse. The physical horse shows you muscle structure, correctness and the way a horse moves through itself, hits the ground and so on; body-type and functionality being vital players to overall performance, speed, stamina and distance of ground.

The emotional horse responsive to the information highway of the senses is the pilot of your physical airplane and responsible for efficiency of pace and mental stamina (grit) based upon both real and learned interpretations. From a psychological, *sensory* standpoint, 'distance' mentally is measured in the amount of time the horse is efficiently interpreting its world without it affecting physical motion; thus we have Time In Motion, as the true factor in distance aptitude. There is a big difference between running a great distance and running a great distance efficiently.

An easy example is to think about something as simple as walking a horse with halter and lead when suddenly your horse *spooks* in an eruption of body language or slows to ID something or altogether stops without your urging and/or despite it. If not from physical pain, then this alteration of movement comes from the emotional horse, the senses. Now imagine the impact this can have on the athlete in herd chaos in elevated stress and physical speed situations where a split second of hesitation can cost you a race.

It pays to know your entire horse which is why we profile them and monitor them. If the emotional horse had zero impact on the physical horse, *spooking* would never be in horse-lingo.

These idiosyncrasies of character, of Emotional Conformation, come in many layers and many forms, some an impediment to physical performance for the race horse, or any horse for that matter, and some not much of an impediment at all. A detailed understanding of the whole horse tells us a great deal about the comfort zones for the horse, offering up clues to their natural Pattern Of Motion and Mental Efficiency Zone. Using that knowledge, we can design coaching programs to help the equine athlete become the best he or she can become at their physical talent level. After all, we must nurture the horse before we develop the athlete.

With the sensory system controlling movement with such alacrity, a study of this system should rightly be considered if not prior to a physical inspection, at least in collaboration with it. You're not investing in an automobile; you're investing in a complex system of mental and physical traits. For any equine athlete to fulfill their physical ability and talent, they must first have the Emotional Conformation to allow them to.

Kerry M Thomas/Founder of THT