THT BLOODSTOCK: PATTERNS OF MOTION ANALYSIS

WITH KERRY THOMAS AND PETE DENK

KENTUCKY DERBY ✪ 143

C H U R C H I L L D O W N S

— MAY 6, 2017 —

Ranked in Herd Dynamic order for 1 ¼ miles on May 6, 2017

1. Always Dreaming
2. Irish War Cry
3. Hence
4. Classic Empire
5. Gunnevera
6. McCraken
7. Practical Joke
8. Battle of Midway
9. Gormley
10. J Boys Echo
11. Lookin At Lee
12. Tapwrit
13. State of Honor
14. Girvin
15. Sonneteer
16. Patch
17. Irap
18. Master Plan (AE)
19. Thunder Snow
20. Royal Mo (AE)
21. Untrapped
22. Fast and Accurate

2017 KENTUCKY DERBY ANALYSIS INTRODUCTION
The Nature of the Next Level Athlete

I can hardly believe that this is our 7th Kentucky Derby Analysis, seems like yesterday that Pete and I teamed up for the then Kentucky Confidential and zeroed in on Animal Kingdom. Thinking back we were ourselves a fledgling endeavor in many ways, just at the beginning of so many things and many exciting discoveries and breakthroughs. We embarked on a journey we're still traversing, to unveil the true nature of the Herd Dynamic and its powerful roll in both herd motion and the individual behavior patterns that influence it. But to be honest, aside from all that, the most profound and lasting thing for me personally has been and is the business partnership and personal friendship, with Pete. I can tell you, THT Bloodstock would not be shaped quite the same way, nor our *think forward* vision and approach nearly as *forward*, without Pete Denk, or the other extended team members who work closely with us while panning for gold in the thoroughbred sales markets.

Most of the year we at THT Bloodstock are providing services for clients in a number of areas like the aforementioned *panning for gold* in the auction environment, evaluating performances of horses for claim consideration or trying to pinpoint the reasons for an underachieving athlete. We also provide services focused on breeding programs, and then there is this, the monumental task of assembling, researching and defining the horses and their probability of success in the Kentucky Derby. I want to say thank you right now before I go any further, thank you for buying our report and thank you for both your support and your interest.

This years' report presented us with some serious challenges; one of them was time crunch as we had worked all of the Florida Two Year Old in Training sales and upon our return from OBS April we had enough time to drop our luggage, kiss mom howdy, and get back to work. Another challenge was that this years' herd dynamic hierarchy has more than a few horses who are paper-thin separations one to the other. There are a lot of horses you, we, anyone, could make a case for *hitting the board*. I shared early on with my FB folks that this year the smallest of details were likely to make the biggest differences. Where do we look for these little herd dynamic separations? They can be found in what I have come to call The Big 3; natural tendencies, sensory soundness, physical ability. Handicapping with the Herd Dynamics is all about getting a picture of inclination and stress management. As most of you know I myself do not bet, but I see my purpose here much the same as I see it for any of our clientele; provide as much detailed information about your investment options so you can apply that to your decision making process.

Not that long ago as I was tossing around in my head, mostly on flights to here and there, (the end of last year saw us overseas and much of this year so far we've been anywhere but home) the topic of identifiable markers and scouting next level athletes, when a most unique conversation put a spin on things I'd not before considered.

I have a very small, purposely small inside-circle of friends and among those are some very interesting folks, folks I like to be around because they have a lot to offer in experiences one can imbibe and learn from. Among the most interesting and enjoyable of these is Howie.

Howie Lewis is a retired Air Force Test Wing Vice Commander (30 years of being one of the lead test pilots) and also recent retiree Lead NASA Langley Research. Talk about interesting conversation about testing fighter jets, air combat maneuvers and some of the amazing things at NASA Research. It seems a far stretch at a glance, linking herd dynamics and herd motion to tactical air combat and NASA Research, but not as far as I thought.

Howie was telling me about formations and pouncing attack positions, positions of offense, defense, anticipating motion before it happens, managing stress, situational awareness, staying covered up and then breaking free to bounce forward… all this started to sound quite familiar to me. He saw that I was looking at him funny and paused… "Howie, what you're describing to me is not all that dissimilar to some of the things we look for when evaluating a herd of horses competing at a high rate of speed, like in the Kentucky Derby." He thought for a moment and then agreed. "If that's the case, which certainly makes sense," he said, "I wonder if what we look for in the individual elite pilot has any parallels with what you look for in elite horses…?"

I always say, you can have a great airplane, but you still need a great pilot to optimize its ability. That analogy for seeking 'elite abilities' was no longer casual rhetoric to me, thanks to Howie.

Scouting the elite potential athlete means a study of inherent and naturally occurring proclivities that lend themselves to athleticism. By nature, the next level athlete has a certain kind of free flowing rhythm in everything they do.

One of the greatest antagonists to optimizing talent is stress, emotional stress. As emotional athletes horses are very often a reflection of their environment, hence my core belief that you nurture the horse, while you develop the athlete. When I look for signs of stress management or lack thereof in an individual, I work my way back through the equation via various identifiers and tests looking for strengths and weaknesses in that Big 3 equation. The big three, when efficient in cooperation, allow the individual horse to function at a high level in the chaos of herd motion over the physical distance trained for.

Natural tendencies supported by sensory soundness allow for the optimization of physical ability. In essence, the mental capacity of the equine controls the physical output of the athlete.

Scouting the right pilot for the airplane begins with the core essentials as a whole then dissected and studied in detail, an approach I recommend when handicapping a race like the Kentucky Derby. We scout for horses that have the base requirements at a glance; physical/pedigree, athletic rhythms and tendencies and seemingly functional sensory systems. Handicapping can be like short-listing a horse sale, a process of elimination. We look for holes in the equation to help guide us on purchase prospects, and I think that approach is transferable to handicapping the Kentucky Derby.

Natural tendencies are vital, they cannot be taught and their essential role in processing emotional stress is something that I only truly came to understand over the last several months of ongoing study and research. A race horse is a jigsaw puzzle of many pieces; athletic tendencies play the lead role in the athletic psychology and they are represented in several ways. To be sure however, there are a small handful of key tendencies that separate those who have the "it" factor from those who do not. Tendencies can anchor the horse under stress or free them forward through the herd, through the jumbled mess. Tendencies play a role in the horse's ability to learn, train and anticipate the environment. Tendencies cannot be erased, they can only be managed when they are not athletically inclined, and they need to be evaluated for impact before you invest.

Athletic tendencies without sensory soundness to support them are good tendencies with no room to move. The sensory system is the horse's surveillance system, the info-superhighway from the environment to the psyche, from the psyche to the body; an action or reaction, offense or defense, kind of thing. The sensory system feeds the psychology information, the psychology determines and processes, the body reacts (or not), the natural tendencies give direction to the inception of motion. In short, the sensory system, like a blocker in football, clears the path for the body to flow through; the tendencies determine the manner and direction of the physical energy of the body. It's about emotional energy distribution; it's cooperative teamwork. The herd dynamically sound, *elite horse*, has no or few potholes in this sequence, thus manages and processes emotional stress without the aid of the environment, including other horses.

Short listing a horse sale, short listing those with fighter pilot ability, handicapping a Kentucky Derby; it's a process of elimination. But let me be clear, I never put a horse on my list; I let the horses put themselves on it.

When you're trying to separate horses in a field who are all, at least in relative terms, at the top of the game as physical athletes, the paper thin differences that separate the herd hierarchy and probability of success are found in the other ingredients. I always like to imagine the fundamentals of the perfect horse and work my way back; what pieces does it take to be the best and who among those have the greatest number of these pieces. When you're trying to zero in on the best, you have to start by looking for holes; which horses are more or less dependent upon environmental influences for their overall success.

Be mindful of the simple fact, Mother Nature very cleverly conceals leadership; a true leader doesn't tell you they are, they show you.

Sensory impediments are certainly chief among the considerations, but help or hinder in a given race is highly individualized and can be capricious; helping one time then not so much the next. Sometimes you're robbing Peter to pay Paul. I'm more in favor, personally, of letting the horse have the chance to assimilate and grow, get seasoned if you will with no sensory impediments, before considering them. Handicapping a horse who has had any relationship with blinkers, on off, on, off on… you'd be wise to closely examine the previous races available for things like space awareness, rhythm changes, over expression during sensory lead changes and the distribution of emotional energy as related to competitive distance.

Equipment aside, clues in the herd dynamics of handicapping can be found in other areas such as environmental dependencies in stressful situations. When we are evaluating horses for a sale, one of my focuses is on identifying patterns of behavior because patterns of behavior quite often impact patterns in motion; *tendencies*. When you are not privy to knowing and studying these patterns intimately because you only see the horse in race replays, then you have to work backward. The reason I feel this is vital is because we need some clues on how well our prospects are going to handle and process the environmental stress, especially pre-race stress that is unique in many ways to the Kentucky Derby experience.

Before you make your final plays, have your homework done. We make an effort in this report to provide you with as much additional information as we can on each horse to assist you in this effort. What we are trying to zero in on here are the patterns in motion, so you have a tool to draw from while watching the patterns of behavior pre-race. You can go deeper too; I recommend as a general rule watching as much pre-race and gallop out footage of your horses as you can while you mine for clues. Keeping in mind all the while as heretofore mentioned that because Mother Nature conceals her leadership, the differences are found in the subtleties.

I'm always looking for how a horse impresses him/herself upon the environment, or is impressed and positioned by it. When a horse, being a herd animal, has any potholes in the equation, they will naturally look to other horses to bridge that gap. When this happens in motion they become "just" another horse in the race. The same reliance happens when under duress even

when standing still or at a walk because the psychology and the interpretative processes are always cycling regardless of the speed of the body; when not moving or moving slowly, the loudness of the expression can be less noticeable, but no less demoralizing. This is when tendency under stress shows whether it's athletic and loose or internalized and sticky. The energy has to go somewhere, where it goes and how it's distributed should never be overlooked. When we're panning for gold for clients we have to couple that with how well we feel the physical body will grow and develop. A hole in any of the three is a red flag for me and a sign of trouble for the development of the psychological athlete. For the most part in the Kentucky Derby one of the essentials is spoken for, as we can all agree that these horses are at least physically athletic.

As with every year, I hope that this report is helpful to you and an interesting read. It is a window into the horses, a snapshot as we see it in this moment in time as well as a window into our vision forward and how we approach things here at THT Bloodstock. I'm proud of the things we've learned and discovered over the years that have helped our clients, but mostly I'm ever passionate about continuing to advance it; if you aim to be at the top of your game, you can never stop learning or challenging yourself. I may never be an "expert", but I will always be a student seeking to discover the true nature of the next level athlete.

Very special thanks to Brisnet for providing an outlet for our work and to Pete Denk, himself a darn good handicapper, who works tirelessly and selflessly on our team's behalf. The amount of work and the time it takes to put all this together, especially on the heels of two year old in training sales, is something I alone would not be able to accomplish.

As always, we welcome new client inquiries and you're invited to visit our website and have a dig around; www.thtbloodstock.com where you can check out the previous year's analysis by going to Big Race Analysis on the toolbar. Feel free to connect with me on FB and on Twitter where my handle is @thomasherding and for questions on services, scheduling, or handicapping with the herd dynamics, you can connect with Pete on Twitter @PeteDenk and via email, peterdenk@yahoo.com

Thank you for your support.

~Kerry

"If you're not thinking forward, you're already behind"

KMT

ALWAYS DREAMING
Bodemeister—Above Perfection, by In Excess (Ire)

After watching Always Dreaming's two juvenile races from 2016, it is hard to imagine we were looking at one of the favorites for the Kentucky Derby.

Always Dreaming debuted on July 1 at Belmont Park and finished a non-descript 3rd. He hopped at the start, took the turn 4-wide, had good position but flattened out late. He was trying to close rapid fire transitional gaps, but it didn't look natural for him. He was not prepared to win first out and definitely not at this 5 ½-furlong distance.

In his second race, a 6-furlong maiden event at Saratoga, Always Dreaming broke sideways at the start and was 6th early. He threaded his way through the pack and came running four-wide on the turn. Always Dreaming looked like he was going right by the pacesetters, and the announcer even said, "Here comes Always Dreaming, bearing down and going on by." But Always Dreaming got re-rallied on by a horse named Blame Will.

It was a bad loss from the Herd Dynamic perspective. Considering what Always Dreaming has become, we would have expected a little more urgency to win and own space. He was running with Blame Will, but not trying to take him down.

In his first two races, Always Dreaming appeared strangely non-reactive to Herd Dynamic challenges. But we could see that he was not a fast-cycled horse. He was just getting started in a sprint, and he was not reacting to urgency from other horses or even his rider in these first two races. He was just in cruise control, running through the wire rather methodically. He wasn't in full battle mode, yet.

We wonder if Always Dreaming was having some physical problems as a two-year-old or if this was all mental immaturity.

At some point in the fall or winter, Always Dreaming was transferred to the barn of Todd Pletcher, and the transformation was dramatic.

Even though Always Dreaming's first two races of 2017 did not come back fast on speed figures, they were very impressive on Herd Dynamics.

In the January 25 maiden win at Tampa, Always Dreaming was more efficient and authoritative as soon as the gate opened. He almost got squeezed back, but he was space competitive and instead pushed the other horses back.

Pressing the pace between horses, he was managing a lot, showing good Group Herd Dynamic (group and environmental stimulus awareness), in addition to a more competitive Individual Herd Dynamic (competing mode).

He won by 11 ½ lengths, completely without peer. He held a beautiful straight line through the lane, showing no herd attachments to the defeated. This was an awakening.

Always Dreaming ran in an allowance race at Gulfstream Park next, facing winners at the distance of nine furlongs. His gate skills and mental efficiency have been dramatically fine-tuned since he joined the Pletcher barn.

He looked relaxed on the lead on the back side, driving forward into space while surveying the field behind him. He was out in front of those horses, but he knew everything that was going on behind him. This is an IHD speed pattern of motion with a high-functioning GHD awareness.

Holding just a ¾ length lead over his closest pursuer, Always Dreaming looked relaxed. He can cruise along up front in close proximity to other horses without dipping into his emotional energy reserves.

There was still communication and herd attachment between Always Dreaming and the other horses at the sixteenth pole; then he released and drew away easily. Always Dreaming ran his final three furlongs in :36.62, a good closing time, especially for a speed horse, and he could have run faster. He was in total control of his environment from start to finish.

Next came the Florida Derby (G1), and Always Dreaming took another big step forward while winning his second consecutive 9-furlong race.

Always Dreaming checked briefly on the first turn, then settled just off the pacesetter. Begging to be unleashed, he was showing much more determination to control space than before.

When rider John Velazquez let him go turning for home, Always Dreaming poured every ounce of emotional energy into his forward drive. He lengthened his stride and pulled away from the field to win by five lengths. This was a more determined, stronger version of Always Dreaming. This is a colt on a serious growth pattern.

His internal fractions of :47.34, :23.59,. 24.02, :12.53 show an excellent mix of speed and stamina. His sensory system was still way out in front of his body at the wire (as a horse tires physically, that emotional extension shrinks). We think Always Dreaming is well equipped to get 10 furlongs.

Always Dreaming is a talented horse just coming into his own, getting stronger every race. He is the top rated horse on Herd Dynamics coming into the 2017 Kentucky Derby.

IRISH WAR CRY
by Curlin—Irish Sovereign, by Polish Numbers

Irish War Cry looked like he could be a very special horse when he debuted last November at Laurel Park, and with the exception of one off race, his Herd Dynamic development has been extremely impressive.

He enters the Kentucky Derby off a big growth race – a 3 ½-lengtn victory in the Wood Memorial Stakes (G2) – that saw a talented colt turn into an elite professional racehorse.

Let's retrace the steps of how he got here. Irish War Cry broke from the far outside post in a field of 12 in his debut. He showed good early space awareness and anticipation as he avoided a horse swerving into his path at the start.

That put him in 9th place early, eight lengths behind the leaders. Irish War Cry then kicked into gear, showing off a huge stride and turn of foot with a 5-wide move around the far turn. In an intense, physically expressive Individual Herd Dynamic drive, Irish War Cry was just blowing through space.

This was a sustained half-mile burst (:46.32) that resulted in him winning going away by 4 ½ lengths. He ran his final two furlongs in a smoking :22.91, very fast for a dirt race. Only naturally forward, athletically gifted horses run like that in their debut.

Irish War Cry won the 7-furlong Marylander Stakes in his second start, but he had to work hard for it. As opposed to his debut when he broke slowly and then attacked forward targets, this time he went to the lead at the start and was forced to defend his position.

After putting away one opponent, Irish War Cry was pounced on from the outside by a more experienced, stakes winning foe (O Dionysus). Irish War Cry had to run his final three furlongs in :35.45 to win by a nose. Irish War Cry was still expressive in his body language, and learning his transitions on the fly. It took talent, grit and resolve to get that win.

Irish War Cry made his three-year-old debut in the Holy Bull Stakes (G2). Again we see he has great space awareness coming out of the gate. He is environmentally aware and he does not overreact to space infractions from other horses. He holds his space strongly.

Irish War Cry took charge of this herd very quickly, going right to the front. That is his natural pattern of motion, on the lead relatively early in herd motion. Irish War Cry set sensible fractions and just kept on going, finishing the race with a ton of emotional energy. He won by 3 ¾ lengths, leaving Gunnevera and Classic Empire well behind.

This was an IHD beast winning on raw power and youth, still working out his transitions. His internal cycles spin a little fast, but he can mentally rate and conserve energy even when going fairly fast in IHD mode. He ran his final 5/16 in a very nice :30.65.

Irish War Cry suffered his only career loss to date in the Fountain of Youth (G2). He looked emotionally off here. As an excitable horse, we think he may have expended a lot of energy pre-race. As soon as the gate opened, it looked like his body and mind were in two different places. He briefly pressed for the lead and faded badly to 7th place, beaten 21 ¾ lengths.

We don't know why he ran so poorly, but we do think Irish War Cry is a horse who bears close scrutiny on Derby day to see how he reacts to the emotionally charged atmosphere. Energy distribution will be paramount for Irish War Cry to finish strongly going 10 furlongs.

Watch how he filters the environment before the event. It will be a huge clue to his energy reserves at the ¼ pole in the Derby.

In his final prep for the Kentucky Derby, Irish War Cry bounced back very strongly in the Wood Memorial. Breaking well from the outside post, he showed a newfound maturity and patience to stalk the pace from close range early. This was a more efficient, professional version of Irish War Cry.

Inching up three-wide on the backside, then engaging pacesetter Battalion Runner as the field entered the far turn, Irish War Cry looked poised and powerful. He steadily drew off from Battalion Runner in the lane with the smoothest transitions we have seen from him yet.

Irish War Cry is still a fast-cycling horse, but his emotional extension as he ran through the wire was beautiful. That bodes well for him to get extra distance.

Irish War Cry is an extremely talented horse with a powerful herd dynamic, and he enters the Kentucky on a growth pattern in terms of his efficiency. He looked less emotionally expressive and more professional in the Wood, and there is a good chance that will correlate to him filtering stress more efficiently pre-race. If that is the case, then we are likely to see the best version of Irish War Cry on Derby day.

HENCE
by Street Boss—Floating Island, by A.P. Indy

When Hence blew open the Sunland Derby (G3) at the eighth pole and drew off to win by 3 ¾ lengths, he stamped his name on what has turned out to be arguably the key race on the 2017 Triple Crown trail.

Distant second-place finisher Conquest Mo Money exited Sunland and ran a huge race in the Arkansas Derby (G1), pressing a fast pace before just getting caught by two-year-old champion Classic Empire, losing by a half length.

Hedge Fund, who finished third by 8 ¼ lengths at Sunland, came back to finish second, beaten a head, in the Illinois Derby (G3).

Sunland fourth-place finisher Irap, beaten 8 ½ lengths by Hence, next won the Blue Grass Stakes (G2), turning back multiple Grade 1 winner Practical Joke, multiple graded winner and undefeated McCraken, Tampa Derby (G2) winner Tapwrit, and Gotham Stakes (G2) winner J Boys Echo.

The way Hence won at Sunland was reminiscent of Kentucky Derby winners past in that he made a huge, sustained move. Hence literally launched less than a half mile into the Sunland Derby – meaning he was in a drive for more than five furlongs. And he took the far turn 5-wide!

After making that power move, Hence put away Conquest Mo Money and released him at the eighth pole. At that point Hence's head came up, his ears were flopping then went up searching. Back into Group Herd Dynamic surveillance mode, Hence was looking for more horses near the wire.

It was a very powerful, yet casual win. It could be a significant growth race for Hence, who previously had looked like a slow learner.

Is Hence as good as he looked at Sunland? That is one of the most important pieces of this year's Derby puzzle. To try to answer it we went back and retraced his development.

Hence ran three times as a two-year-old and was unable to break his maiden. But he improved each time he ran, finishing 7th, 3rd, then 2nd.

In his second start he made a nice rally behind subsequent Lecomte Stakes (G3) winner Guest Suite in a maiden race at Keeneland. Hence is rooted in the Group Herd Dynamic, and that is where he launches his attack from. At that point in time he took a while to wind up and progress through his gears, and the short stretch on Keeneland's 1 1/16-mile configuration didn't give him enough time to shine.

In his third start he broke on top and "dueled throughout" missing the win by a neck. Looking at his floppy, surveying ears, he was actually in GHD for much of that race despite his forward herd position. When he did make the transition into Individual Herd Dynamic competing mode in the lane, his neck and head lifted up. He was still learning how to compete there. His forward efficiency was less than perfect, but he was excited to be fighting it out.

Rider Ricardo Santana Jr. was whipping hard, but Hence was not going through his gears as fast or efficiently as the rider would have liked. As a GHD-based horse, it will be a smoother, more natural progression if Hence is not on the lead from the very start.

Hence broke his maiden in his first start at age three at Oaklawn Park in what is one of the stranger races we have seen this year. He almost fell at the start, then settled in 5th place early. This is the type of mid-pack positioning we like him best at.

Hence launched a 4-wide move on the turn, and everything was looking good in the stretch – he was handling the sloppy track just fine -- when he abruptly drifted about five paths inside, nearly hitting the rail. That move caused him to lose the lead, but he got it back together and re-rallied for the win. The re-rally was impressive. Only good horses can do that. The abrupt drifting in was a little troubling from the sensory perspective.

On film review, we see a little bit of wandering focus and a horse whose efficiency was teetering on the edge. It is hard to say exactly why he did it. The whip might have confused him. The rider was whipping left-handed, and he bore in to his left. This was a promising but strange win.

Hence stepped up to graded company next in the Southwest Stakes (G3), where he found the adjustment from maidens to Grade 3 company too much to handle. He finished 7th, beaten 13 lengths, after failing to sustain his IHD drive.

One positive thing to note is that while Hence was having some Herd Dynamic growing pains, he has never taken a step backwards on the speed figures we use, improving every race on Beyer Speed and Thorograph.

At the time, it would have been hard to predict Hence would put it all together so impressively the way he did in the Sunland Derby, but the fact is he did it. And looking back at his races, the puzzle pieces were there but jumbled.

We don't like Hence's entire body of work as much as the two colts we ranked above him, but if he can replicate or improve on his race at Sunland in the Kentucky Derby, Hence is a serious contender.

CLASSIC EMPIRE
by Pioneerof the Nile—Sambuca Classica, by Cat Thief

Heading into the Kentucky Derby, we have never felt such a wide range of possible outcomes as we do with 2016 two-year-old champion Classic Empire.

We would not be surprised if Classic Empire wins this Kentucky Derby.

We also would not be shocked if he does not finish the race.

Most likely, something in between is going to happen, but there is simply no way of telling for sure what you are going to get.

Classic Empire is a special talent, an elite physical specimen who projects a powerful forward presence and draws from a deep emotional energy reserve.

He also has one of two things: an extremely quirky sensory system or an associated stimulus tied to a traumatic event. And the trigger is at least in some way related to herd motion and/or the starting gate.

Classic Empire has seven career races. In five of those races, he has had some sort of negative efficiency event at the start. In three of those five races, he was good enough to overcome his ghosts.

In the 2016 Hopeful Stakes (G1) at Saratoga Race Course, he took a hard right turn out of the gate, his body looking stiff, his sensory system almost frozen. With mind and body disconnected, his body went sideways and he lost his rider.

In the 2017 Holy Bull Stakes (G1), Classic Empire expended a ton of emotional energy pre-race, bumped at the start and ran a lackluster third, beaten 8 ¾ lengths by Irish War Cry. He did not look like the horse who had so impressively posted consecutive victories in the Breeders' Futurity Stakes (G1) and Breeders' Cup Juvenile (G1).

Classic Empire got an early start for a classic colt. Last May 4 at Churchill Downs he won his debut easily going 4 ½ furlongs in rain and slop. He stumbled a couple times and broke inward at the start, but he showed a great recovery. This is a naturally forward-minded colt. Even after a slow start in his first race, he knew where he belonged – at the front of the herd. The slop and the mud and the spray meant nothing to him. He ran through it all to win going away by 1 ½ lengths.

Classic Empire made his second start in the Bashford Manor Stakes (G3), and he had a bad start again. Seven lengths back at the first call, he put in a really impressive sustained run, showing wonderful determination to catch and pass the leader Recruiting Ready (who wasn't exactly stopping, running a final quarter in :24 and change).

The second and third-place finishers both felt Classic Empire coming and had their motion disrupted by his oncoming presence. This was a sign of a very powerful Herd Dynamic.

Classic Empire had trouble out of the gate in his first two starts, but in his third start we saw just how powerful his anxiety is regarding the start of a race. A few strides out of the gate, he started veering sharply to the outside and lost his rider. Something about the start of the race was so powerful that it completely overwhelmed his sensory system.

Trainer Mark Casse added blinkers for Classic Empire's next start in the Breeders' Futurity Stakes (G1) at Keeneland. The fact they added blinkers (and later a shadow roll) tells us that Casse believes there is a visual component to Classic Empire's problems.

It worked beautifully in the Breeders' Futurity. Classic Empire broke perfectly straight from a tough #11 post and produced a tour de force win. He showed absolutely no sticking points and a ton of forward energy.

It was the same result in the Breeders' Cup Juvenile (G1), where Classic Empire pressed a fast pace and dug deep to hold on for the win over Not This Time. It was the race that fittingly earned him champion two-year-old honors.

Classic Empire did not look like himself when well defeated in his three-year-old debut (where a shadow roll was added). He hesitated at the start, broke slightly inward and bumped, and never showed his powerful forward energy. He was feeling his way into motion. After that race, published reports emerged that he was refusing to train.

One of the interesting things about Classic Empire is that if he can get past the start of the race, his sensory system usually operates at a very high level once in motion.

Casse removed the shadow roll for the Arkansas Derby (G1). Classic Empire again showed gate anxiety and stumbled at the start, but he settled into a stalking trip, and although forced to wait behind horses for a good portion of the race, his signature forward projection returned. That is a great sign.

Once unleashed, he came running with a powerful IHD drive reminiscent of his two-year-old form, running his final three furlongs in :37.47. Seeing him efficiently wait in traffic, conserving energy without losing his forward projection, and then finishing strongly to win at 1 1/8 miles makes us think Classic Empire can probably get the Kentucky Derby distance of 1 1/4 miles – as long nothing happens at the gate to make his task more difficult than it needs to be.

Team Casse has a rocket ship on their hands, and they're trying to hold him together psychologically (and perhaps physically). There is no way to predict how Classic Empire will handle the environmental stress of the Kentucky Derby. Assume they will do everything they can do to keep this extremely talented horse in his comfort zone.

We recommend watching Classic Empire very closely before the race. Look for any signs of stress, such as abrupt, herky-jerky physical movements, profuse sweating, or bouncing around visually.

Classic Empire's post position – and how long he has to wait in the gate – could be a huge deal. The longer he has to wait in the gate standing still, the higher the potential for stress buildup.

In his best form, Classic Empire is a special talent and serious contender to win this Derby. But more than any other horse in this field, we worry about Classic Empire's mental state before the race even starts.

GUNNEVERA
by Dialed In—Unbridled Rage, by Unbridled

Trainer Antonio Sano probably wasn't thinking about the Kentucky Derby when he debuted Gunnevera last June in a 5-furlong maiden dash in the slop at Gulfstream Park.

Wearing blinkers from day one, Gunnevera was last of seven early then came running for second behind Three Rules, a speedster who would win his first five races, sweeping the Florida Stallion Stakes series.

It was a nice debut at a distance that should be a little too short for a Group Herd Dynamic closer like Gunnevera. Nevertheless, Gunnevera managed to break his maiden going 5 ½ furlongs in his third start.

Gunnevera is an adaptable horse, and his Group Herd Dynamic is a competitive revved up version. One of his unique traits is that he can launch and hold a drive for a long time – a half mile or more. That is an important trait for a Derby horse.

Sano shipped Gunnevera for the Saratoga Special (G2) next, and he showed he belongs in the big leagues when rallying from nine lengths back early to run down Recruiting Ready. Note that Gunnevera is not a plodder – his fractions of 23.25, 22.81 and then a final 5/16 in :30.94 indicate a nice turn of foot.

Gunnevera tried to stretch out to 1 1/16 miles in the Breeders' Futurity Stakes (G1) at Keeneland. Asked to make a tactical move early then launch wide on the turn, Gunnevera could not sustain his energy through the wire. Understandably after wearing blinkers and running short in his first four starts, he was still distributing his energy like a sprinter.

But he got it right in his second two-turn try, winning the Delta Jackpot Stakes (G3) by a widening 5 ¾ lengths. He took to the Delta bullring beautifully with an aggressive 5-wide move around the far turn.

Javier Castellano, who rode Gunnevera in his Saratoga Special win, got back on board for his three-year-old debut in the Holy Bull Stakes (G2). After checking slightly on the turn, Gunnevera closed for second behind the runaway winner Irish War Cry.

The way Irish War Cry dominated this race on the front end, he was going to be almost impossible to catch, but we liked this run from Gunnevera, and we really like Castellano on him.

Those two stayed together for the Fountain of Youth Stakes (G2), and Gunnevera ran the best race of his life to date. Dead last after checking out of a tight spot on the first turn, he was in a true GHD settle early. He launched into IHD while the field was still on the back side, about a half mile from the wire.

Moving three-wide around the turn, he caught Practical Joke and Three Rules as the field turned for home, and then found another gear, drawing away by 5 ¾ lengths.

Gunnevera drew a tough post (#10 of 10) for the Florida Derby (G1), and he and Castellano surrendered a lot of ground to get over to the rail heading into the first turn. Gunnevera launched from 15 lengths down early and ran his heart out as he always does, but he finished third, beaten 6 ½ lengths by Always Dreaming.

Looking at his internal fractions, Gunnevera ran a solid race in the Florida Derby. The first quarter in :25.40 cost him, but from there he ran quarters in :23.80, :23.07, :24.04, and a final eighth in :12.26. That is a big sustained move, but it just wasn't good enough coming from so far back.

Positioning and a clear path are going to be vital for Gunnevera in the Kentucky Derby. He does not stay in Group Herd Dynamic mode as long as most closers. When Castellano pulls the trigger, Gunnevera responds like he is shot out of a cannon. The flame is burning very bright to make moves like that, using a ton of energy. A clear path will be vital.

Gunnevera has competed admirably at a variety of distances from 5 furlongs to 9 furlongs. Despite his closing pattern of motion, we are not sure he has been developed for optimal performance at 10 furlongs.

But if anyone can get the job done on a horse like this, it is Castellano. One of his best skills as a rider is the ability to get maximum tactical position from a GHD horse without forfeiting late power. He is a great match for this horse. We expect Gunnevera to put in another gutsy effort in the Kentucky Derby.

McCRAKEN

3yo colt by Ghostzapper—Ivory Empress, by Seeking the Gold

Through our work at public auctions and profiling racehorses on the track, we know that we grade approximately 1% of all horses to have true elite Herd Dynamics.

McCraken is definitely an elite minded horse. A beautiful mover, his body flows with perfect synchronicity through the environment at top speed. It takes an elite sensory system to move the way he does.

But we are not 100% sold on him as a 1 ¼-mile Derby horse. His profile suggests to us an elite miler whose energy and pattern of motion is more powerful when slightly condensed.

His one try beyond 1 1/16 miles – the 1 1/8-mile Blue Grass Stakes (G2) – bolstered our opinion. In the Blue Grass, McCraken was a little more space competitive early than usual. Between horses early, he settled in 4th place then launched on the turn. But he never advanced higher than third place, turned back by Practical Joke and never able to pierce into the space of the wire-to-wire winner Irap (who was a maiden coming into the race).

McCraken might have an excuse for the Blue Grass, as he reportedly missed some training with a minor injury and was making his first start in about two months. And his early energy in the Blue Grass did suggest a fresh horse who didn't quite settle as well as he usually does. But even if we excuse the effort for lack of fitness, and assume he could have run the 1 1/8 miles more efficiently, the Derby distance represents an additional threshold at 1 ¼ miles. Elite minded milers can occasionally get 1 ¼ miles, but more often than not they will be at less than their best.

In terms of whom he defeated, McCraken's best win in our opinion was the Sam F. Davis (G3). He executed his pattern of motion perfectly in that race. Settling just behind the lead pack, about five lengths off a fairly sharp pace, McCraken tipped 4-wide on the turn and ran by everyone with a final 5/16 in a good :30.92. McCraken finished strongly and straight as an arrow, winning fairly easily, though we note he got a great setup, while second-place finisher Tapwrit did have a little traffic trouble.

McCraken's two-year-old campaign saw him go a perfect three-for-three, all eye-catching victories at Churchill Downs. Indeed there are plenty of things to like about this horse, including a possible home-court edge.

In his debut at the distance of 6 ½ furlongs, McCraken showed he has the mental agility and space awareness to handle traffic chaos. Though he rates early, he is a very forward-minded horse. He waits patiently, and his transitions into an IHD drive are smooth and fast.

McCraken stepped up in class and won the Street Sense Stakes at the one-turn mile configuration in his second start. He handled the class rise with aplomb. McCraken is a versatile horse that loves to attack forward targets. His favorite part of the race is when the rider unleashes his IHD energy. His mind and body are perfectly in sync when he drops the clutch.

His internal fractions in the Street Sense (:23.67, :23.18, :24.29, :24.41) were very solid though slightly front-end loaded for a Group Herd Dynamic pattern of motion (a pattern for McCraken). But chalk that up to versatility more than anything else. McCraken is no deep plodding closer. He has good tactical speed.

McCraken completed his juvenile campaign with a stylish victory in the Kentucky Jockey Club Stakes (G2). After an alert break he settled in 9th place early in his customary position, just behind the lead pack. He launched 4-wide on the turn, split horses and proved clearly best over runner-up Wild Shot. McCraken ran his final 5/16 in a respectable :31.54. His fastest sectional of the race was the second quarter (:23.33).

McCraken is a special talent, and we would not be shocked to see him win. But handicapping the Kentucky Derby requires you to take some tough stands. We think his profile suggests he could come up a little short going 10 furlongs in this company.

PRACTICAL JOKE
by Into Mischief—Halo Humor, by Distorted Humor

Very few stallions' progeny profile as well for us as Practical Joke's sire Into Mischief.

Into Mischief gets forward-minded, efficient racehorses with strong Individual Herd Dynamic power at a very high percentage rate. And they are usually sprinter-milers.

Practical Joke has a fabulous herd dynamic – one of the strongest in this field – but his body of work suggests to us that 10 furlongs is going to be too far for him to show his best form.

We really liked his one-turn races at age two. His sprint debut at Saratoga was powerful. He demonstrated smooth transitions and a strong IHD energy when he dropped the clutch mid-stretch and drew off by five lengths.

Watching his victory in the Hopeful Stakes (G1), we see that Practical Joke thrives on IHD battle. He loves that part of the competition. This is a fearless horse. He proved it again in the Champagne Stakes (G1) when nosing out Syndergaard after a prolonged IHD battle between two very good two-year-olds.

But as soon as Practical Joke tried two turns, holes started to appear in the profile. Despite getting a great pace setup in the Breeders' Cup Juvenile (G1), Practical Joke lost ground from the stretch call to the finish. He ran his final 5/16 in :32.98 while finishing third beaten 7 ¾ lengths by Classic Empire. That is not the energy distribution of a classic colt.

Trainer Chad Brown put Practical Joke in the Fountain of Youth for his three-year-old debut and again he did not stay the distance well enough. He looked strong early and made a big move on the turn, but in the end he ran his final 5/16 in just :32.50 and got his doors blown off late by Gunnevera.

Perhaps thinking the layoff was to blame, they tried Practical Joke next in the 1 1/8-mile Blue Grass Stakes (G2). Practical Joke made an admirable effort to run second to Irap, and we thought he had the strongest herd dynamic in the field.

The best space battle in that race was actually between him and McCraken, whom Practical Joke beat back mid-race and then again in the lane. But by the time that battle was over, Practical Joke didn't have enough left to reel in the maiden Irap on the lead. It was a good run, but it didn't change our mind about his distance aptitude.

Practical Joke is a powerful, imposing horse. He is forward-minded, efficient and strong in combat. He does not yield space to other horses who approach him. He makes them earn it. We expect him to give a top effort in the Kentucky Derby, but we also expect him to find the distance a little too long.

BATTLE OF MIDWAY
by Smart Strike-Rigoletta, by Concerto

With just four career races and none at age two, Battle of Midway's resume is light in terms of winning the Kentucky Derby.

There is one important area he will need to improve to contend for the win in Louisville – energy distribution.

But in every other metric we use to judge quality in a horse, Battle of Midway scores very highly. This is a special colt.

Battle of Midway debuted on January 21 at Santa Anita. That 6-furlong sprint was run on a sloppy track, and right away we saw a bunch of things we liked about Battle of Midway.

He is a good gate horse, capable of going from 0 to 60 as soon as the gate pops, and he does it efficiently, with excellent body control. His Group Herd Dynamic awareness can operate at a fast cycle. That makes him efficient in herd chaos, even at the start of the race, often the fastest and most chaotic portion of herd motion.

He also controls his space at the start and during his races. We rarely if ever see him crowded by another horse. When you see other horses respecting a horse's space, that can be a clue of elite herd dynamic strength.

He pressed a sizzling pace in his debut but he did it with a good (not frantic) rhythm. He looked strong and efficient, dueling between horses, then drawing off in the lane to win by 3 ¼ lengths. The slop did not affect him.

He earned a very good debut Beyer Speed figure of 88, and his internal fractions of :21.69, :22.73, :24.67 show a good combination of speed and stamina.

They rolled Battle of Midway back just three weeks later in the 7-furlong San Vicente Stakes (G2). He broke just a hair slow and chased through fast fractions. He ran his final three furlongs in :38.53 (slow) and finished third, beaten 8 lengths by the speedy Iliad. This was the classic wake-up call many horses experience when facing winners for the first time.

Dropping back into an allowance race in his third start, Battle of Midway got back on track with a super effort going 1 1/16 miles. Caught very wide all the way around (about 4-wide both turns), Battle of Midway ran with purpose, authority and follow-through.

He stalked the leaders from close range, then seized the lead turning for home and gamely held off the Bob Baffert-trained Tapit colt Reach the World. The runner-up got the better trip, drafting in behind the speed then popping out late, but Battle of Midway never let Reach the World by him. Battle of Midway is a very game and gritty horse whose mentality stays strong even when his physical body is tiring.

Battle of Midway's final prep for the Kentucky Derby was a gallant 2nd in the Santa Anita Derby. Again we see him engaging right at the start, with a strong IHD energy and great space control. This colt is less likely than most to have trouble at the start of the Kentucky Derby, and that can be a key to getting a decent trip.

After he broke so well, the rider decided to let him go to the front, and he wound up as the inside horse in a 3-horse pace duel through fractions of :22.66, :46.55, and 1:10.92. That is not a winning trip going nine furlongs and beyond, but Battle of Midway ran like a winner. Gormley got by him grudgingly, but Battle of Midway was fighting tooth and nail even though he was tired (final three furlongs in a slow :40.24).

Battle of Midway has an elite Herd Dynamic, and we have no question about his willingness to compete at the highest level. He will run his body to exhaustion.

Trainer Jerry Hollendorfer has been trying to get him to rate off a horse in his recent works, and his 4/28 work looked good. To us this appeared to be the type of work designed to teach a horse to use a dial of intensification, and to use his top gears only when the rider asks for them. That is exactly what Battle of Midway needs.

But it is one thing to practice it and another thing to do it in the high energy atmosphere of the Kentucky Derby. Horses tend to revert to their natural tendencies in battle, so we will soon see how well his lessons have stuck.

Elite qualities are present in Battle of Midway. The ability to develop and use those qualities efficiently over 1 1/4 miles at this point in his career, is a question.

GORMLEY
by Malibu Moon—Race to Urga, by Bernstein

As a dual Grade 1 winner with a resume that includes victory in the traditional top West Coast prep, Gormley enters this Kentucky Derby with good credentials.

But after watching his races, we came away with some doubts about his chances in Louisville.

His career started off very well with a strong, debut sprint win at Del Mar and then an easy three-length win in the Frontrunner Stakes (G1) at Santa Anita.

Both of those wins were accomplished on the lead in the style of an Individual Herd Dynamic speed horse that likes to compete with close space targets. He is slightly body language expressive, and he has a tendency to be a bit inefficient right at the start of motion.

It was not until the Breeders' Cup Juvenile (G1) that Gormley ran into other elite Herd Dynamic opponents, and that is where we saw the chinks in his armor exploited. Gormley bobbled at the start of the Juvenile and got caught wide into the first turn, in 5th place.

He never looked relaxed, and his tank was empty turning for home. He finished 7th, beaten 16 ¾ lengths by Classic Empire. Gormley never went on the offensive in the Juvenile. He was in reaction mode.

Gormley got back on track in his three-year-old debut, winning a great battle with American Anthem (a horse we liked early in the year who has gone on to disappoint) in the Sham Stakes (G3). One of Gormley's best assets is his ability to settle into a high-revving Group Herd Dynamic mode. Whether on the lead or tracking it, it is very important that Gormley feels comfortable in order to conserve energy for the finish.

The Sham was run on a sloppy, sealed track, and Gormley appeared to relish that footing. Horses with his Herd Dynamic and sensory profile often run better on tracks that provide little resistance. They skip over sloppy sealed tracks, carefree.

Gormley was well-beaten in his next start when he faced Mastery (a truly elite horse, but injured and off Derby trail) in the San Felipe Stakes (G2). Gormley tried to press the pace outside of Mastery, who was paying no attention to him, the sign of two different herd dynamic levels. Then Gormley found himself between horses when Iliad advanced. That was too much pressure for Gormley, who backed out of it and finished 4th, beaten 9 ¾ lengths.

In the Santa Anita Derby (G1), they tried a new pattern of motion for Gormley, rating him off the pace, and it produced a win. After settling in 5th place on the rail behind a speed duel, Gormley worked out a great trip.

While this was a slightly different pattern of motion for Gormley, we still can see his natural tendencies. His penchant for close-space stimulus was apparent in the stretch when his rider asked him to change leads. Gormley's release point was not clean.

He eventually did switch leads and he got the win, passing Battle of Midway late. Gormley got the perfect pace setup, but he still only ran his final three furlongs in :39.78. That is not the kind of late speed that will get it done normally in Grade 1 races.

Gormley engages with close-space targets, and he has a tendency to use other horses for rhythm and direction, whether he is on the pace or off it. That is why the lead change/release point was a little delayed in the Santa Anita Derby. He was thinking about the horses in his immediate space, not the ones he needed to catch up to.

We think his best chance in the Kentucky Derby is to try to implement this pattern of motion again, hoping for improvement the second time he tries it. But that is going to be a tough task for him in a bigger field, full of tougher Herd Dynamics. And we are neutral at best on Gormley trying additional distance.

There are other reasons we doubt his chances. Gormley is an emotionally expressive colt. Those types can bleed energy long before they get in the gate in Louisville, in addition to during the action.

He also can be a little inefficient at the start. We could see him having trouble early and getting pushed back, setting up an even more difficult pattern of motion for him to execute. And Gormley has never come home fast in any of his races, regardless of distance.

Gormley is a talented colt, but the overall profile is not one we prefer for the Kentucky Derby.

J BOYS ECHO
by Mineshaft—Letgomyecho, by Menifee

J Boys Echo has a couple traits that we like to see in Kentucky Derby horse. We don't classify him as one of the likely winners, but we could possibly see him sneaking into an underneath spot.

First the good news, J Boys Echo has shown growth in his Group Herd Dynamic and once he settles, he is has gotten pretty good at efficiently filtering herd chaos.

J Boys Echo also is usually finishing his races fairly well at shorter distances. We think he probably is going to be ok going 10 furlongs.

The reason we don't think he is a likely winner of this race is that he does not rate very highly on Individual Herd Dynamic power, and he has been somewhat environmentally dependent to find success. When things set up well for him, J Boys Echo is good enough to take advantage.

But we are yet to see him impose his will on a field that includes any elite Herd Dynamic competition.

J Boys Echo debuted at Churchill Downs last October in a 6 ½-furlong maiden race. He ducked in badly at the start and then had to deal with quite a bit of traffic. He ignited late with a good rally for second place.

J Boys Echo broke poorly again in his second race, a 1 1/16-mile maiden event at Keeneland. He was having a little trouble filtering herd chaos at the start of the races early in his career. But once he settles, we like how he moves within the herd. His extension while travelling in Group Herd Dynamic mode looks good.

Stalking behind the leaders, J Boys Echo was blocked on the turn. His first attempt to squeeze through was stopped, but then he redirected to a fortuitous rail opening. He drew off to win by 5 1/2 lengths. This is definitely a two-turn, distance horse.

They tried the Delta Jackpot (G3) next, and although J Boy broke much better, the up-close stalking trip did not suit him. This was probably too aggressive a pattern of motion for him, and we also don't think he is the bull ring type.

J Boys Echo made his three-year-old debut in the Withers Stakes (G3). He broke well fresh, but again we see his need to filter at the beginning of herd motion. He came with a pretty good rally for third, running his final 5/16 in :30.79. He was in a good drive at the finish. He was no threat to the winner El Areeb, but if the race was just a little longer he would have been second. We continue to like him at longer distance, but we still don't see him imposing his will on other horses.

J Boys Echo finally got his opportunity to shine in the Gotham Stakes (G3), and he took advantage of it. This was his most efficient start in terms of getting into a semi-tactical GHD cruise control gear early, and he was able to use the rail post to his advantage heading into the first turn.

He showed good emotional extension while stalking a three-horse battle up front. He made a really nice 4-wide move on the turn and his momentum carried him to a 3 ½-length win. This race came back fast on speed figures, but was slow on raw time, meaning the surface must have been really dull that day. J Boy ran his final 5/16 in :32.39, which is not fast, but it looked good to the naked eye. We do think he got a perfect trip that day, and note he did not beat any Derby horses.

J Boy's final prep for the Kentucky Derby came in the Blue Grass Stakes (G1). He was bumped and jostled around at the start, and pushed back to last in the field of seven. Asked to move a little early while still in traffic, J Boys Echo did not get the best trip in the Blue Grass. And he isn't good enough to beat top horses when that happens. But he produced his run and finished 4th, beaten 6 ¼ lengths.

J Boys Echo is a good efficient mover, and we think his Group Herd Dynamic could help him going 10 furlongs. He does not rate too highly on IHD firepower, but in a race where simply getting the distance efficiently can sometimes land you a spot in the money, we give him an outside shot for a minor share, if he gets the right setup. J Boy should be one of the more quiet ones in the paddock, as this behavioral model usually is good at blending into the environment and not wasting energy.

LOOKIN AT LEE
by Lookin At Lucky—Langara Lass, by Langfuhr

Following his second-place finish behind Classic Empire in the Breeders' Futurity (G1) at Keeneland last fall, blinkers were added to Lookin At Lee.

We would have loved to see how this stretch-running colt would have developed without the addition of head gear, as he appears to be the type of horse that could move up going 10 furlongs.

Despite his late-running pattern of motion, Lookin At Lee is not a one-paced plodder. Look at his fractional times on his career past performances, and you will see a horse capable of :23 and change internal fractions and a sustained rally.

Ironically, one of his best career races was his final race without blinkers. In the Breeder's Futurity, Lookin At Lee had the #12 post, a terrible starting position for the 1 1/16-mile Keeneland configuration, which features a short run into the first turn and a short stretch.

Lookin At Lee ducked out at the start -- as horses often to do from the outside post – but then he went all the way down to the 2 path heading into the first turn, sacrificing tactical position in order to save ground. After running his first quarter in a slow :25.78, Lookin At Lee put in a mid-race rally, running consecutive quarter miles in :23.08 and :23.44. In 9th place and still 6 ½ lengths back after six furlongs, he split horses on the turn, then split horses again in the stretch to rally for second place, beaten three lengths by the winner Classic Empire.

After those two sub-:24-second middle fractions, Lookin At Lee ran his final 5/16 in a very respectable :31.63. Though he never threatened Classic Empire, he finished with good emotional energy, and his space awareness looked good splitting horses twice.

Lookin At Lee was again saddled with the far outside post in the Breeders' Cup while also adding blinkers. His sensory system was bouncing around early. He broke a little faster but ultimately his natural Group Herd Dynamic tendency took over and he settled back in last place.

After running his first quarter in :25.18, he launched a similar mid-race rally, with consecutive quarters in :22.99 and :23.46. But from there his late energy wasn't as good as it should have been. He ran his final 5/16 in :33.02 while finishing 4th, beaten 12 lengths by Classic Empire.

In his three races in 2017, Lookin At Lee has continued to implement his late-running pattern of motion. The blinkers have not given him any additional early speed or tactical position. He still has a solid sustained rally, but we have seen his release points and space awareness suffer.

In his final prep the Arkansas Derby (G1), Lookin At Lee broke better but again took himself back to last place early. He put in his usual mid-race acceleration and then came with a late rally for third while weaving through traffic in the stretch. Some of his trouble was self-imposed.

He and rider Luis Contreras dove to the inside in the stretch and had plenty of room to advance, but then when Contreras urged him left-handed, Lookin At Lee drifted back to the outside sharply. With little time to adjust laterally anymore, Contreras just kept him going forward, and Lookin At Lee passed two more horses while also holding off the late charge of Soneteer to his outside. He ran his final three furlongs in :37.13, not bad at all considering all the lateral movement he made in the lane.

If they take the blinkers off of Lookin At Lee for the Derby, he becomes an interesting longshot to us. If they leave them on, we still give him a small chance to come running for a piece, but we think it is less likely.

Unless he lucks into a really clean trip, Lookin At Lee is likely to need all of his natural Group Herd Dynamic and space awareness to maneuver through the 20-horse Derby field. You also don't want him burning up any extra energy trying to interpret things he cannot see, and there is a lot to see and hear and feel in the Derby.

Lookin At Lee is an honest, hard-trying colt. At this time we are not sold on him as one of the top members of this crop, and with the blinkers on, there is a chance he struggles in Derby chaos. But roadblocks or not, we expect him to deliver another gritty effort.

TAPWRIT

by Tapit—Appealing Zophie, by Successful Appeal

After paying $1.25-million for Tapwrit as a yearling, there had to be more than a little concern when he finished last of 10, beaten 18 ¼ lengths in his debut last September at Saratoga

But given a couple months of additional training, the addition of blinkers and a scenery change to the Gulfstream Park West meet, trainer Todd Pletcher worked his magic on Tapwrit. A gritty, talented racehorse emerged to break his maiden and put together a string of very nice efforts in Florida this winter.

After the maiden win, Tapwrit won the Pulpit Stakes in the slop at Gulfstream. Pressing the pace while wide all the way around the turn, Tapwrit held off Master Plan by 1 length in what now looks like a somewhat underrated race.

Tapwrit went to Tampa next, stepping up in class to meet one of the top-rated members of this crop, the then undefeated McCraken. Tapwrit (carrying six less pounds than McCraken) finished second, beaten 1 ½ lengths, but he galloped out in front, and his trip is worth reviewing.

In the Davis, Tapwrit was asked for speed early, then rated inside of horses while in traffic, 2 or 3 lengths off the pace.

Rider Jose Ortiz asked Tapwrit to move early, but he was behind horses and really had nowhere to go. Then in the lane just as he was trying to get out, McCraken blew by directly to his outside, and one of the pacesetters drifted out slightly, robbing Tapwrit of a path. Forced to wait as McCraken opened up, Tapwrit got out and made a nice run to finish second. He drove through the wire and galloped out in front. Tapwrit still had plenty of energy at the wire after an eventful trip at 1 1/16 miles.

We like that he was bottled up for quite a bit of time, but it did not stress him out or rob him of his late energy. This was a growth race and it could be argued Tapwrit was nearly as good as the winner.

It is tough not to like Tapwrit's next race in the Tampa Derby (G2). He broke straight but was pinched back by horses on each side of him. He and Ortiz did not overreact to the trouble. They let them go, tucked back and gradually found his spot in the herd. Tapwrit does not overreact to space infractions when in Group Herd Dynamic rating mode rate, and he has an Individual Herd Dynamic hammer that he can unleash when asked. He is responsive to his rider, and he can thread his way through situational chaos very well.

Tapwrit ran a pair of fast middle quarters in :23.08 and :23.65 in the Tampa Derby, then came home his final 5/16 in :31.19. That was very nice sustained run, the type that translates well to the Kentucky Derby.

In his final Kentucky Derby prep, Tapwrit finished 5th, beaten 11 ½ lengths in the Blue Grass Stakes (G2). He stumbled slightly at the start of the Blue Grass and was bumped and caught a little wide heading into the first turn. We saw him shake off minor trouble like that in Florida. Caught five-wide on the far turn, Tapwrit tried to rally with McCraken, but he could not keep pace. He finished as an also-ran.

The Blue Grass was a step backwards for Tapwrit, and we hate to see his development stalled in his final race before the Kentucky Derby.

The blinkers have done a world of good for Tapwrit's forward focus, though they make him slightly inefficient at the start and they sometimes compromise his space awareness a little bit. He seems to always recover well from little incidents, and his sensory system operates very well at speed. He got away with at Tampa, but the waters are much deeper in Kentucky. Overall we think he is at slight risk to encounter trouble in the Kentucky Derby. The ride will be very important.

We think Tapwrit should run a little better in Louisville than he did in Lexington, but we prefer horses who are moving forward in their final prep. Until he gets going in the right direction again, the Tampa races look like his apex.

STATE OF HONOR
by To Honor and Serve—State Cup, by Elusive Quality

As we went through the videos of State of Honor's six two-year-old races, we wondered how this big gangly colt from Canada with the high head carriage had qualified for the Kentucky Derby.

None of his Canadian races impressed us. He had above average speed, but he was reluctant to take the lead or fight for space.

Despite a decent looking stride, he would sometimes withdraw from herd chaos and shy from pressure. His sensory system was having difficulty clearing a path out in front of him. He ran head-high, like a llama.

But then we watched his three-year-old races from this winter in Florida, and we saw a gradually improving horse.

In his first U.S. race, the Mucho Macho Man Stakes at Gulfstream Park, State of Honor still had a high head carriage, but he definitely matured over the winter. He looked much better and faster on dirt than he did on the Polytrack at Woodbine. He finished 2nd by a head, but he ran with a lot more intensity and efficiency than ever before.

Trainer Mark Casse stepped State of Honor up in class and outfitted him with blinkers in his next start in the Sam F. Davis Stakes (G3). The blinkers helped him break better from the rail, and he set fairly swift fractions of 23.63, 47.15, and 1:10.90. Another great thing to see was that he finally lowered his head! State of Honor was outfinished by McCraken and Tapwrit, but he gamely held off Wild Shot for third.

Next came the Tampa Derby (G2), and again we saw that the blinkers plus maturity are really helping State of Honor optimize his physical talent. He set another fast pace, and although Tapwrit ran right by him in early stretch (with no herd dynamic resistance), State of Honor did stay on for second place.

In his final prep, State of Honor ran in the Florida Derby (G1), giving us some interesting cross form. Trainer Casse decided to take the blinkers off for this race, and it was a great idea, as it evened out State of Honor's energy distribution (slower early burn, more emotional energy late), and it gave us a chance to see if the blinkers' influence remained.

State of Honor broke sharply from the rail in the Florida Derby. He could have had the lead into the first turn, but rider Julien Leparoux strangled him back behind horses. That set up an inside stalk-and-pounce trip. Turning for home, Leparoux sent State of Honor into an opening on the inside, and the colt responded, slipping past a tiring Three Rules and holding off hard charging Gunnevera for second.

We love watching horses find themselves as athletes, and although we don't think State of Honor is a major threat to win this Kentucky Derby, he is on a pattern of improvement. His Herd Dynamic is growing with every race.

There is a chance State of Honor could find the Kentucky Derby an overwhelming task. After all, the base horse we saw at age two would be severely overmatched from the sensory and herd dynamic perspective. But he is stronger now, and the blinker experiment seemed to make him more brave and forward.

If State of Honor can take another step forward in Louisville, he has a longshot's chance at landing a share of the purse.

GIRVIN
by Tale of Ekati—Catch the Moon, by Malibu Moon

With three wins and a second from four lifetime starts, and a perfect 3-for-3 record on dirt, it is tough to knock Girvin's resume.

His only career loss was a second-place finish in a turf stake at Fair Grounds, and we actually liked that race from a performance and development standpoint.

But there are a lot of good colts with good records in the Kentucky Derby, and we had to make some tough calls. When we put Girvin's most important win – the Louisiana Derby (G2) – under the microscope, we graded him below the winners of some of the other major preps. Also, all of Girvin's starts have come in New Orleans at Fair Grounds. They have good racing and some great horsemen in Louisiana, but it is a state whose form does not always transfer as well as some others.

Girvin started his career in a maiden sprint race on December 16, and he did a bunch of good things in that debut. Girvin got out of the gate efficiently and showed good extension while pressing the early pace through a quarter in :21.87. Girvin has sprinter speed if he wants to use it, and he showed good body control and space awareness while dueling between horses.

The runner-up Excitations is a fast horse who has two good wins since, and he got the better trip than Girvin on the outside. But Girvin did a good job sustaining his forward efficiency down on the inside while under pressure. Girvin showed good mental agility and a nice mix of Individual Herd Dynamic fight and Group Herd Dynamic awareness.

Girvin's second start came in a minor overnight stake going a mile on the turf. He showed a good assimilation process adjusting to the new footing and distance. This is a very adaptable horse.

Blocked turning for home, Girvin split horses powerfully and rallied up the inside. The horses on the outside already were in full flight, and Girvin did well to finish second. He was driving into space through the wire, shading :23 for his final quarter. We liked to see that being behind a wall of horses did not hurt his extension or rob him of any late energy.

Girvin next proved his mettle in the Risen Star Stakes (G2). He fell to the inside when the gate opened, but from there he worked out a nice stalking trip. He is better in motion than he is standing still. He can interpret herd chaos all around his body while also clearing forward space.

Girvin showed good body control around the turn and then ran down pacesetter Local Hero and put him away. No doubt this is a naturally athletic horse.

In the Louisiana Debry (G2) Girvin stumbled slightly at the start but recovered quickly. He is an ok but not great gate horse in terms of efficiency. But from that point on he worked out a very good stalking trip (note the horse on the lead was Girvin's rabbit).

As Girvin hit the lead inside the eighth pole, he bore in twice, then switched back to his left lead. On the head-on view we see he was wandering laterally quite a bit late. He ran his final three furlongs in :37.73, with a final furlong in about 13 seconds. That is a little slow for a horse looking to move up to 10 furlongs vs. tougher company (none of the horses he beat in Louisiana rank as elite Herd Dynamics)

Girvin is lightly raced, and there are a lot of things to like, but we do see some signs that the Derby could be a little tougher for him. Based on bow he finished the Louisiana Derby, we are not convinced he is ready to go 10 furlongs with the power and efficiency it is going to take to win this race.

SONNETEER
by Midnight Lute—Ours, by Half Ours

Sonneteer enters the Kentucky Derby as a maiden, and it is likely he will still be a maiden afterward.

But there are some things we like about Sonneteer's herd dynamic profile, especially for two-turn dirt racing. There are also some things that are going to keep him from winning races he is capable of taking down. That is because Sonneteer is more physically talented than he is athletically driven to win.

Some horses know where the finish line is. We aren't sure how much Sonneteer cares.

There is little question about where Sonneteer is going to go early in the Derby. He will break and then he will take himself toward the back of the herd. As a true Group Herd Dynamic horse, that is what suits him -- to let herd chaos unfold in front of him before he acts.

Sonneteer sets his own rhythm, and he is almost impervious to environmental stimulus. That helps his chances of running his race on Derby day. This is a methodical grinder who steadily doles his energy out during a race, usually with no interruptions and only subtle gear intensifications. He is capable of the long, sustained run that is a trademark of successful Derby horses.

Sonneteer can run in the pack, but he is also perfectly accepting of separation. He can fall double-digit lengths back early but mentally still be attached to the herd in front of him, and he holds a line fine whether in traffic or open space.

There is not a lot of urgency in Sonneteer's pattern of motion. In his maiden race at Santa Anita on February 4, rider Kent Desormeaux tried to shake him up at the start to get better early positioning, but Sonneteer did his own thing. He stays in GHD cruise control for long portions of his races. This is a horse that may be difficult to get to do anything outside of his comfort zone.

Sonneteer has better physical speed than he shows in his races. The fractions in his 7-furlong maiden race at Santa Anita on February 25 prove that Sonneteer can run much faster splits than he does in his route races. He could probably be a little frustrating to ride or train in that regard. He will alter his physical pace in order to get his preferred pattern of motion.

Sonneteer is an athletic, nice moving horse. And it is not that he has trouble passing horses. But he does sometimes run with and not against the horses next to him if it is moving at roughly his speed. That can make his release points a little delayed, unnecessarily slowing his progress through the herd.

Still a maiden after eight tries on the West Coast, trainer Keith Desormeaux shipped Sonneteer to Oaklawn Park to try graded company on the Derby trail. The results were very interesting.

In the Rebel Stakes (G2), Sonneteer was crowded from both sides at the start, but it didn't really bother him. This appears to be a fairly stress-free athlete.

Sonneteer went down to the rail and settled, then rallied through traffic up the inside. He just nosed out Petrov for second, finishing with good energy and galloping out well. Sonneteer was coated with dirt from the kickback, but he didn't seem to care about that either.

In the Arkansas Derby (G1) Sonneteer again disconnected from the herd early and rallied late for 4th place, beaten two lengths by champion Classic Empire. Soneteer ran his final three furlongs in a solid :36.45.

One of the reasons Sonneteer is still a maiden is that his pattern of motion makes things harder than they have to be. He has the speed to be more tactical, which would make his job easier late, but that is not where he is comfortable.

Sonneteer has a good enough Group Herd Dynamic to negotiate traffic in the 20-horse Derby field. And we give him a fighting chance to get 1 1/4 miles just fine.

Soneteer hasn't changed any of his tendencies in 10 career races. He beats to his own drum and has as consistent a pattern of motion as you will find in this field. We think there is a good chance Soneteer runs his race in Louisville. Depending what happens up front, that could mean splitting the field or just maybe if he gets the perfect pace setup, he could be picking up the pieces on the outskirts of the money.

PATCH
by Union Rags—Windyindy, by A.P. Indy

The amazing thing about Patch – the horse who is missing his left eye -- is that we would have never suspected anything was amiss based on his race videos.

We watch pan and head-on views of every race of every Derby horse, and we pay close attention to how they react to stimulus, handle themselves in traffic and how efficiently they interpret their environment.

Patch shows good space awareness on each side of his body, both to inanimate objects and other horses. We see no tactical or positional bias whatsoever in his videos. In fact, Patch has better sensory guard rails than many horses with two eyes! He holds a good straight line in traffic or in open space.

His space awareness has probably gotten stronger because of losing the eye (reportedly due to an ulcer when he was two years old). When you take one sense away, others can become stronger. Patch is using those other senses to fill out his sensory field.

Patch did not make his racetrack debut until January 17 of this year. Starting in a six-furlong maiden race at Gulfstream Park, Patch broke out of the gate efficiently but then dropped way back. He was in 10th place, 11 lengths behind the leaders after a half mile.

Patch then came running on the outside and did a great job to finish second, beaten 4 ¾ lengths. He passed seven horses down the lane, including three horses just before the finish line. Patch showed good competitive instincts and determination to get up for second place, wining his immediate space at the wire. He galloped out in front of the winner.

Looking at his internal fractions, Patch ran almost exactly the same pace the entire race! (:23.94, :23.94, :11.95, :11.98). Those are the fractions of a distance horse who was not slowing down at all. This shows good continuity between Patch's mental rhythms and his physical pace.

Patch changed his pattern of motion and his energy distribution in his second race. He broke from the gate much faster and did not lose position after the start. Sitting in third place early, Patch showed he has a little speed, running a half mile in :46.66. A 50-to-1 longshot named Meantime got first run and tried to open up in early stretch, but Patch targeted him and slowly wore him down with a relentless, methodical rally.

Meantime drifted out and bumped Patch during the stretch drive. Not only did Patch have better space awareness and body control than his opponent, he also did not overreact to being bumped on his "blind" side.

That gives us a clue about how well rounded his other senses are. It would have been well within accepted norms of Herd Dynamics if he was negatively affected by that bump.

In order to execute a stalking pattern of motion and get the win in his second start at the one-turn mile distance, Patch had to run quite a bit faster earlier than in his debut. That changed his physical pace energy distribution (front-loading it considerably), but his emotional energy distribution remained steady. Even though he was slowing down physically in the second half of the race, he was not mentally or emotionally taxed. We think that even-handed, distance-oriented emotional energy distribution is who Patch really is.

Patch earned his way into the Kentucky Derby with a game 2nd-place finish in the Louisiana Derby (G2).

After breaking efficiently from the rail, Patch stalked the pace from about 5 lengths back along the inside. He split horses on the far turn, was briefly pocketed in early stretch, then dove to the inside to get past Local Hero (who was drifting in). Patch came up 1 ¼ lengths short of Girvin (who also briefly weaved into his path), but he galloped out on even terms with the winner, perhaps even a little better.

With just three lifetime starts and no two-year-old foundation, we don't have a big body of work to assess, but Patch's growth pattern is good so far. He has adapted to the loss of his left eye extremely well. We think he is probably a confident horse, with a naturally strong Herd Dynamic.

The Derby is the ultimate test of a horse's sensory system, so it will be interesting to see how Patch handles the chaos.

Patch is a very steady, rhythmic mover with a methodical pattern of motion that could be effective going 10 furlongs. While we do not classify him as a win contender, we think there is a good chance he will acquit himself well again, and we wouldn't rule out a minor prize.

IRAP
by Tiznow—Silken Cat, by Storm Cat

The maiden Irap's victory in the Blue Grass Stakes (G2) was the biggest upset so far on this year's Triple Crown trail.

We sure didn't see it coming, nor do we predict another surprise from him in Louisville, but it is interesting to look back at how trainer Doug O'Neill and crew got this unlikely colt into the Kentucky Derby.

Irap made his first two career starts on the turf in Southern California, finishing third in a downhill sprint at Santa Anita and fourth going a flat mile at Del Mar. Neither race was impressive from the sensory or her dynamic standpoint. It took Irap a little time to figure out how to be a racehorse.

In his third start, O'Neill optimistically tried Irap in the Los Alamitos Futurity (G1), and the Tiznow colt definitely moved forward on dirt. He finished second, beaten 7 ¼ lengths by Mastery, the undefeated colt whom many people believe is the best horse in this crop. (Mastery later was injured winning the San Felipe Stakes [G2])

Irap was no threat to Mastery, but at least he had the will to try him. Irap stuck on his left lead – something we will see more of later -- when he engaged Mastery.

Irap dropped back to maiden company next and ran a pretty weak 4th-place finish in the slop at Santa Anita. He had his space taken from him and was very reactive considering his previous experience at a higher class level.

O'Neill outfitted Irap with blinkers and jumped him back up in class next in the Robert B. Lewis Stakes (G3). Irap showed better forward extension wearing blinkers. He dueled with the winner Royal Mo all the way around the track, finishing second by 3 ½ lengths. This was an improved effort, but Irap still was not finishing with any speed or authority (final 5/16 in :32.56).

The experimentation continued with a pair of trips to Sunland Park. Irap went blinkers off in the Mine That Bird Derby when finishing second by two lengths to Conquest Mo Money. Irap hung pretty badly, looking intimidated by the winner.

The blinkers went back on for the Sunland Derby (G3), and Irap was running an ok race, but he got stopped in traffic on the turn and lost his way. His space awareness looked poor as he finished 4th, beaten 8 ¾ lengths by Hence, while also being outfinished by the tiring pacesetter Hedge Fund.

If this ride wasn't crazy enough already, O'Neill then shipped the maiden Irap to Keeneland for the Blue Grass, which was supposed to be one of the stronger preps of the year, and removed the blinkers yet again.

Irap definitely took a step forward in the Blue Grass, but this was still one of the most puzzling results we have seen in a while. Irap pressed a moderate pace and held on over Practical Joke by ¾ of a length. He was having trouble with his sensory transitions. Stuck on his left lead, he did dig in late to hold on for the win while running his final three furlongs in an uninspiring :38.03.

There definitely was some herd dynamic growth there, and it is possible Irap moves forward off the Blue Grass. But considering his inconsistency, and that we really didn't like any of his previous races, it is tough to hang our hat on him against a much deeper field in Louisville.

MASTER PLAN (AE)
by Twirling Candy—Sage Mist, by Henny Hughes

A Todd Pletcher-trained son of Twirling Candy, Master Plan has raced 5 times and has two wins, having won a maiden race at Gulfstream and the OBS Championship Stakes (Colts & Geldings Division) in Ocala, Florida. He finished 3rd in the UAE Derby (G2) in his latest effort.

From a herd dynamic aspect Master Plan is a well-defined upper-level athlete. Not quite, this far in his development, at the elite status but certainly a game and able competitor with very good synchronicity between his psychology and his physical athleticism.

From a tendency standpoint Master Plan has a very controlled, evenly distributed forward energy and rhythm. His normal go-to maneuver out of the gate from any post is to quickly survey and gauge the environment and find a nice pocket of comfort to settle into. He uses his Group Herd Dynamic to emotionally rate and build a platform from which to launch when the time comes for the Individual Herd Dynamic combat.

Master Plan has a very nice balance between all areas of his sensory system, transferring stimuli and making sensory lead changes efficiently, allowing him to optimize his physical talents. It's also worth noting that neither the blinker experiment nor the dirt transition or even a sloppy track had effect on his overall pattern of motion. He ran twice with blinkers (his most recent two races) but he shows no indications of a horse that would need them.

The Kentucky Derby distance should not be much of an issue for Master Plan in the bigger picture, but at this time, though he is a fine athlete, he may find the task a bit too steep for where he is on his growth pattern. I wouldn't foresee him being overwhelmed; he certainly could make a nice effort especially if it's muddy and because he rates so well in GHD. However there are enough horses one stage ahead on experience and growth at this time that he will find it difficult to win though not impossible to hit the board.

THUNDER SNOW
by Helmet—Eastern Joy, by Dubai Destination

Godolphin is represented this year by Thunder Snow. He has eight races under his belt with four wins including his first start maiden win and his last three races, which included the UAE Two Thousand Guineas (G3) and the UAE Derby (G2). On October 30, Thunder Snow won the Criterium International (Fr-G1), a race that appeared to have a handy rabbit in the mix. This was on the turf and one thing that can be said for Thunder Snow is that he seems to have little trouble with surface changes overall.

Thunder Snow's best pattern of motion is somewhere between Group Herd Dynamic high-rev surveillance and true Individual Herd Dynamic hammer-down drive. He is best near but not pressing hard on the pace.

On the turf he seems to notch it down a gear through his transitions which isn't all that unusual, but is worth noting because this tendency to linger or "hover" between transitions, especially when under combat-type stresses, has shown its face. In the Dubai Dewhurst Stakes, a Grade 1 turf at Newmarket, Thunder Snow displayed this hovering uncertainty just enough to hold 4th position but not enough to hit the switch and thread the needle. There were three other horses fighting for space heading for home and it seemed to cause pause for him, but these things are often growth races too.

From the standpoint of tendencies, Thunder Snow is inclined to extend forward emotional energy early even when his physical placement isn't as forward. There are times when he is a little out of synchronicity, mind to body, and he can at such times struggle to get connection and drive into space. The times when he is clicking and in sync he runs through GHD gears quickly and hits an IHD cruise. When this happens and his physical speed has him in good herd standing out of trouble or relatively stress free, he looks good and has no reason to change gears. However when push comes to shove, the gear changing struggles emerge just enough to be noted.

First noticed in the Criterium when Thunder Snow slides out of a turn all the way across the lane to the opposite rail, it seems that his forward focus shifts lateral when making the sensory lead change necessary to corner tightly. It isn't a recurring issue in quite the same expression, but the root behind the scenes does emerge in other circumstances.

Fast forward to the UAE Derby, where he does a great job while in the mix of horses all tightly knitted in space. His physical talent and keen GHD allow him to manage this quite well. The worry is when the transition is being made from GHD cruise to IHD hammer to finish the race. There seems to be a small but mobile sticking point here again. It doesn't move Thunder Snow all the way to the rail here but it does cause him to float. Floating through the transitions compromises optimal physical efficiency regardless of how physically talented a horse is. And the longer the physical distance, the longer the horse has to mentally hold it together.

These little potholes in the Herd Dynamic sequence make Thunder Snow vulnerable to high level Herd Dynamic horses, especially those with strong, sustainable IHD drives. He is a fine upper Herd Dynamic horse with solid physical talent, there is no denying that, but things will be different than the usual in the Kentucky Derby, and I am fearful in this case that the physical ability will trump the mental agility; he can run a nice physical effort, but up against some of the aggressive U.S. competitors he may come up a bit short.

ROYAL MO (AE)
by Uncle Mo—Royal Irish Lass, by Saint Ballado

A John Shirreffs-trained son of Uncle Mo, Royal Mo has run six times and has two wins, the biggest win coming in the Robert B Lewis Stakes (G3). In his most recent race, Royal Mo finished 3rd in the Santa Anita Derby (G1) behind Gormley and Battle Of Midway respectively.

From a herd dynamic perspective, Royal Mo appears to be in the middle to upper middle levels with a nice physical motion supporting his efforts. It's interesting to note that he has never run without blinkers so we never really get to ascertain his sensory and psychological growth patterns and how they are truly developing.

From a tendency standpoint, Royal Mo does appear to draw forward naturally and this is supportive of his physical talent, but the areas of issue for this horse are apparent holes in the sensory system and during sensory lead changes, most especially on the oblique and rear peripherals.

A side note, his two wins, back to back in fact, were from the 2 hole and 1 hole respectively. From a time in motion and sensory transition point of reference, these inside posts seem to assist him by way of limiting the time in motion it takes to find a comfort zone, allowing him to conserve some emotional energy for the end of the races. In the Santa Anita Derby Shirreffs also applied for the first time, a shadow roll, to little positive effect in the end.

Royal Mo, although showing an ability out of the gate to rev up in to an Individual Herd Dynamic space grab mentality and focus, is not entirely comfortable in this zone and quickly slips back in gears to what we sometimes refer to as a high-revving Group Herd Dynamic mental rating. His biggest antagonist to competing consistently is his apparent hesitation when push comes to shove when he needs to gear up and put the hammer down to combat for space.

Overall Royal Mo is a nice mid-herd dynamic strength athlete. His physical ability serves him well but his lack of overall strength within the herd and during environmental chaos will be tough to overcome in the stress and chaos of the Kentucky Derby if he draws in. We would not see Royal Mo as a herd threat coming for home, despite the fact that he is a fine physical athlete.

UNTRAPPED

Bay colt by Trappe Shot—Exit Three, by Giants Causeway

Untrapped is a nice looking hose who does a lot of things well, but to this point of his development, we see one big hole in his profile – he lacks elite Individual Herd Dynamic fight.

Although he did enough to qualify for the Kentucky Derby, hitting the board in the Lecomte (G3), Risen Star (G3) and Rebel Stakes (G3), Untrapped never looked like a threat to win any of those races in deep stretch.

Untrapped is a nice moving horse when in Group Herd Dynamic mode, and he has plenty of speed. Watch any of his four races this year and you will see a horse who can work out a nice stalking trip, always putting himself in good position to attack on the far turn and in the stretch.

But when the rider pulls the trigger to go for the win, Untrapped becomes less efficient. We gave him the benefit of the doubt after his three-year-old debut in the LeComte (G3), as that race was off a two-month layoff, his first try going two turns and was run in the mud.

Untrapped was unable to run down the winner Guest Suite. It looked like he was weakening late but then he re-kicked to save second place. We think that late energy push was a more a reaction to rear pressure (Arklow and others trying to run him down) than an attempt to catch Guest Suite.

Untrapped took a step forward in the Risen Star (G2). His internal fractions for that race look solid, and he finished a clear second behind Girvin. But watching the head-on replay, Untrapped was out in the middle of the track by himself, with Girvin as his lone forward target to attack, but Untrapped was floating laterally. We like to see more forward extension, targeting ability and body control in that situation.

A very similar scenario unfolded in the Rebel Stakes. Untrapped worked out a great trip, then he became floaty when asked to go into an IHD drive. The pattern of losing efficiency when asked for his top gears is clear to us. Untrapped appears to be running on sensory ice when he should be at his strongest. Horses run like that when they are fatigued, but Untrapped's physical fractions do not suggest a fatigued horse. He came home his final 5/16 in an excellent :30.68 in the Risen Star and then a solid :31.47 in the Rebel.

No doubt sensing something wasn't right, trainer Steve Asmussen added blinkers for the Arkansas Derby (G1). It was a good idea to try, but it didn't work. Untrapped worked out another great trip and he was in a wonderful attacking position on the far turn, but he just fizzled out.

Whereas he got floaty in IHD without blinkers, he internalized with blinkers on, looking even more uncertain of how to respond to a competitive environment. He shut down late and faded to 6th place.

We expect Asmussen to take the blinkers off for the Kentucky Derby, and we think that is the right decision in terms of Untrapped's growth potential, especially at longer distance. Our hope is that he retains some of the forward channeling from the blinkers and he learns to assert himself more late in the game.

But the fact is this -- as of his most recent race – Untrapped's IHD power is yet to be unlocked. Either the confidence to fight just isn't there, or it has not fully developed. The Kentucky Derby is going to be a tough race to find it in.

Based on past performance, Untrapped will look good for a while but he is likely to give way to the stress of herd chaos when IHD battle kicks in.

FAST AND ACCURATE

by Hansen—It's Heidi's Dance, by Green Dancer

Fast and Accurate qualified for the Kentucky Derby by winning the Spiral Stakes (G3) at Turfway Park, a 9-furlong race run on a synthetic track.

Although Animal Kingdom famously used the Spiral as his final prep before winning the 2011 Kentucky Derby, success in the Spiral is not closely linked to success in the Kentucky Derby.

Fast and Accurate is not in the same league as Animal Kingdom, but he is a good story and an over-achiever.

It took Fast and Accurate four races and a drop to the maiden claiming $30,000 class level to get his first win. Prior to that he was second in a Pennsylvania-bred maiden special weight, 4th in a Pennsylvania-bred stake, and 5th, beaten 11 ¾ lengths, in an open maiden special weight race at Parx. That 5th at Parx was the only dirt race of his career and also his worst performance to date.

Fast and Accurate got Lasix for the first time in his maiden claiming win. Going a mile on Turfway's synthetic track, Fast and Accurate broke well from the #2 post and went straight to the lead. His stride looked much smoother on polytrack than it did on dirt. He absolutely crushed those maiden claimers, setting all the fractions then accelerating late (final quarter in a respectable :24.48) to win by 4 ½ lengths.

This was a confidence-building win and also a key race for his development, as it gave him a successful pattern of motion to try to replicate in the future. Like his sire Hansen, Fast and Accurate is an Individual Herd Dynamic speed horse.

Fast and Accurate's next race came in a $60,000 stake going 7 ½ furlongs on the turf at Gulfstream Park. He came out of the gate with excellent resolve. The confidence building maiden win was so big for this horse. He now seeks to be in charge right from the gate.

Fast and Accurate settled while on a clear lead, then had plenty of kick when asked to accelerate in the lane. He looked very good on the turf, coming home his final 1 ½ furlongs in ~:17.40. This was a confident, authoritative victory over what probably amounted to an allowance NW1x field. But with that victory they had unlocked the athlete and earned a starting slot in the Spiral Stakes.

Fast and Accurate broke well in the Spiral, and although he was competing for space early, he fell into a nice stalking trip along the rail, just behind the leader. Guided three-wide on the far turn, Fast and Accurate took over from his more heralded stablemate En Hanse at the quarter pole.

Under strong urging from rider Tyler Gaffalione, he opened up a 1 ½-length lead at the stretch call and held on to win by ¾ of a length.

We thought that was a great ride by Gaffalione. He had great timing and he willed his tiring mount to victory. And we give Fast and Accurate credit for executing and hanging on late when his tank was running on empty (he ran his final furlong in a slow :14.11).

This was quite an accomplishment to win this race. We give props to trainer Mike Maker for getting him there and to the owner for dreaming. (Owner Kendall Hansen has been on a mission to promote and revive the stud career of his homebred champion two-year-old Hansen, who was sold and shipped to South Korea after just one year in Kentucky)

Fast and Accurate earned his spot in the Kentucky Derby under the points system designed by Churchill Downs Inc. We don't give him any chance in the Kentucky Derby, but we won't be surprised if he finds additional success down the road on the turf or on the synthetic track.

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 (859) 699-7890, peterdenk@yahoo.com and @petedenk on Twitter.

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.