



THOMAS HERDING TECHNIQUE: PATTERNS OF MOTION ANALYSIS

WITH KERRY THOMAS AND PETE DENK

Belmont Stakes *(in Herd Dynamic ranking for 12f distance)*



1. American Pharoah
2. Keen Ice
3. Madefromlucky
4. Materiality
5. Frosted
6. Tale of Verve
7. Mubtaahij (Ire)
8. Frammento

KERRY'S CORNER

A few Personal Thoughts... Belmont 2015

The prospect for a Triple Crown is an exciting one, this year we have a very realistic opportunity to see it, thus when Brisnet approached Pete and I about doing a first ever Belmont Analysis like we have been doing for the Kentucky Derby, the timing was a 'just-fit' between THT Bloodstock projects and sales, so here we are.

As always, I'm personally ever thankful for the efforts of Pete Denk for helping shoulder a great deal of the work load in the development of the profiles. We appreciate once again the chance to share our work through Brisnet.com and most certainly, and most importantly, much appreciation to you, for your continued support and interest in the "science" I call Herd Dynamics.

The unique thing about doing a Belmont report for the first time is that we have the added Herd Dynamic information and patterns of motion in Derby chaos from which to draw from and add to the body of work. We learn a lot from how the horses react to unique stimuli in the Derby, and who among those that competed in Preakness showed growth patterns, or who hit emotional walls, key information as Belmont approaches. You will see the reflection of this in the profiles that follow.

There is nothing more telling for us than the compartmentalized study of an individual performance over their time in motion; psychologically the entirety of the physical race is sectionalized in a series of sensory interpretations and reactions, the sensory system leading the way and managing both emotional and environmental stresses and stimuli with each footfall. In going back through years of Belmont winners, studying their pattern of motion and the chaos they managed over the time in motion, we began to get a feel for the typical psychological strengths needed to consistently content with the Belmont distance. We juxtaposed this study with the additional body of work for the Belmont shooters, Derby/Preakness, offering a deeper view of herd dynamic and patterns of motion, this made for an interesting and unique study.

Added distance certainly requires sustainable physical stamina, but it also requires sustainable mental stamina. Mental stamina is managed by sensory efficiency and psychological interpretations of that information, these two pieces combine to manage physical efficiency; physical efficiency over distance of ground is of course vital. The body has to manage the actual, *physical/tangible distance* that is 1.5 miles, the psychology has to manage the *time in motion* it takes to get the 1.5 miles. This makes for me a Triple Crown winner not just a physical beast per se, but an extremely tough and obviously elite psychological horse as well.

The clues we looked for in this analysis are not just the athletes that have shown ability for extended mental 'rating' and emotional energy conservation, but also those with the unique sensory ability to anticipate the motion of other horses and react accordingly before being in a situation where the reaction was required or "reactionary" ... *after the fact*, and instead was a controlled and more preventative reaction *before* the event, avoiding chaos. (See Anticipatory Response on our website Glossary of Terms)

Horses whose sensory system reaches far out in front of them allowing their bodies to follow through and into the cleared space while at the same time being fully aware of themselves in relation to their close space environment are consistently the horses that can handle added time in motion and give themselves the best chance to physically handle the *actual* distance. In essence, it is the horses that do in motion, what we do in our method of study; compartmentalize their emotional energy and use their physical strength in like manner, that the physical and emotional reserves are at the ready when needed and not overused along the way which oft times results in reckless body control.

This group, or *herd* of horses competing in the Belmont could very well find themselves or many of them at least, bundled up in the home stretch, and this is where mental strength and sensory efficiency makes itself known. When the physical body begins to tire, the dominating factor in perseverance rests on mental fortitude, *grit*.

I don't expect American Pharoah to give away anything, yet I also don't see it necessarily as a "gimmy" either. If we have a Triple Crown Winner in 2015, it will be well deserved and fairly earned both physically and mentally.

If you would like to learn more about our work in Herd Dynamics and Patterns Of Motion and the unique services we offer, please visit us at www.thtbloodstock.com and follow us on Twitter; Pete Denk [@petedenk](https://twitter.com/petedenk) & myself, [@thomasherding](https://twitter.com/thomasherding)

Thank You,
Kerry M Thomas

"One of the biggest obstacles to what is possible for any of us is that which we accept as being impossible." KMT

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

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AMERICAN PHAROAH

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

Going into the Kentucky Derby (G1), American Pharoah already had demonstrated an extremely high-functioning sensory system and an elite herd dynamic profile.

But he was winning his races so easily we still had one question – how would he react in a true battle of wills? We found out in Louisville.

Parked five-wide all the way around the Churchill Downs oval, Pharoah ran multiple lengths farther than most of his opponents under the most psychologically demanding conditions he ever faced. He did not flinch, drawing away from 17 rivals late to win by a length. None of the other horses were challenging him for herd leadership at the wire.

Derby runner-up Firing Line might be nearly as physically fast as Pharoah, but his mental/emotional conformation is not on the same level. Through the length of the Churchill stretch, Firing Line was locked on his left lead, stuck in adjunct position to the herd leader, head cocked, unable to mentally release and operate at full physical efficiency.

It was another example of one of our favorite sayings -- the mental capacity of the equine controls the physical output of the athlete. At the very top level of sport, mental traits can be the difference between good and great. American Pharoah is an elite physical athlete with an exceptional athletic mind.

We observed American Pharoah at the barn and during the walkover before the Kentucky Derby. A small portion of the field melts down every year before they arrive at the paddock. Pharoah approached the gap and walked out onto the track like a prize fighter.

He felt the pressure from the crowd, but he never stopped methodically taking forward ground, his sensory system clearing the path for his physical body. His space awareness remained perfectly efficient. He had a very keen but relaxed eye. American Pharoah was mostly impervious to the Derby day stimuli, and none of that changed when the gates opened.

Jockey Victor Espinoza, who whipped Pharoah 32 times in the stretch run, appeared to feel the pressure to win more than his horse did. Dealing with Espinoza's panicked whipping, the record crowd of 170,000 screaming fans, and a stubborn pair of pacesetters in Firing Line and Dortmund, Pharoah never lost his forward efficiency.

The Derby was the toughest race of Pharoah's career, and he came out of it even stronger.

In the Preakness Stakes (G1), he broke a little flat footed from the rail and was asked aggressively to take forward space early. He definitely used some emotional energy to get to the front, but he quickly and efficiently put Mr. Z in his place.

That has been a pattern throughout Pharoah's career – the other horses acquiesce to him. He doesn't assert control by physical force. You will rarely if ever see him bumping into other horses to take their space. Most truly elite herd-dynamic horses don't get physical with other horses unless they think they have to.

Pharoah set a fast early pace in the Preakness, but his gait was extremely efficient. His body and mind were in perfect synchronicity. And once he got to the front, he dialed down beautifully. This is a horse with multiple gears, and he is capable of taking it up a notch, then downshifting, conserving energy for the next battle.

Watching the Preakness head-on replay, Pharoah was moving straight as an arrow again. He was still running with a lot of forward efficiency at the wire, and his ear articulation showed no anxiety or stress. This was a horse clicking on all cylinders. This is what a perfect, tactical, sensory system looks like in motion.

As we have previously noted, American Pharoah shows fantastic ear feel in all directions around his body. Many front-running horses only show true sensory soundness out in front and slightly to the side of them. Pharoah has 360-degree radar when moving at full speed.

The biggest question of course in the Belmont Stakes is the 1 ½-mile distance. There is nothing about American Pharoah's sensory system that is going to hurt him distance-wise. He is an extremely efficient horse.

The only aspect of American Pharoah's profile that is less than perfect for a race like the Belmont is that he has been encouraged to control the herd from start to finish in all of his races. He doesn't expect or even allow the other horses to do any of his dirty work. That can make things more difficult when a horse is trying a new distance for the first time, especially an extreme distance like the Belmont.

And while Pharoah has shown he can sit off horses, he does run with a hint of urgency in that scenario. His best emotional freedom and efficiency has occurred when he is on the lead. Some of his competition, particularly the Group Herd Dynamic types, could gain an advantage by drafting behind the battle and emerging as fresh challengers in the final stages. That has been a winning pattern of motion in many previous Belmonts.

In our opinion, the rider is one of the biggest question marks in this race. This is the second consecutive year jockey Victor Espinoza has a shot at riding a Triple Crown winner. Last year Espinoza and California Chrome finished 4th.

American Pharoah showed in the Arkansas and Kentucky Derbies that he can sit off horses and conserve energy. He also has shown that he can finish very strongly for a forwardly placed horse. In his wins in the Frontrunner Stakes (G1) and the Rebel Stakes (G2) he was on the lead throughout, but he ran his final 5/16 in :30 and :30-2 respectively, finishing with tremendous emotional energy in reserve. Those would be fast closing times for any running style, but they are particularly impressive for a frontrunner going two turns on the dirt.

American Pharoah is going to be forwardly placed in the Belmont because of his physical speed and naturally forward pattern of motion. But he has an extremely versatile sensory system. Espinoza needs to believe in that. American Pharoah has the ability to manage his affairs however the race unfolds. This is a more versatile horse than Espinoza was on last year.

There is no reason to go into this race with a rigid plan of action. Espinoza has a horse that can address challenges as they arise – on the lead or stalking, sloppy track/fast track, inside/outside, fast or slow pace, attacking other horses, or surging into open space – Pharoah can do it all. Espinoza just needs to help Pharoah distribute his energy responsibly for the 1 ½-mile distance.

As the only horse to run in all three legs of the Triple Crown this year, Pharoah does not have the benefit of rest. He has expended considerable energy – physical and emotional – in the first two legs, but he is an elite Herd Dynamic horse and one of the most efficient movers we have ever seen. We think he has a huge shot at making history on Saturday.

KEEN ICE

Curlin—Medomak, by Awesome Again

Keen Ice had a rough trip in the Kentucky Derby (G1), but he never stopped trying to advance.

In 16th place after six furlongs, Keen Ice was doing what he always does early on – biding his time in Group Herd Dynamic mode, slowly doling out his emotional and physical energy. This is a horse with a long, slowly burning fuse.

We noted in our Derby report that Keen Ice is not the most agile horse when it comes to lateral movement or trying to hit a hole quickly. That cost him in the chaotic, 18-horse Derby. His tape is worth reviewing.

Keen Ice looked good when getting off the inside and launching his rally between horses just before the 3f pole of the Derby, but he rode up into a pocket and was shut off by Itsaknockout on his outside around the 2.5-furlong mark. Unable to get out, Keen Ice and rider Kent Desormeaux were forced to wait behind horses.

Still hemmed in at the 1-furlong mark, Keen Ice forcefully bumped Frammento out of his way in order to secure running room. Frammento had been dogging him from the outside for most of the race, and Keen Ice and Desormeaux had enough at that point!

Finally in the clear, Keen Ice passed seven horses inside the final furlong of the Derby. He crossed the line with very good emotional energy. He only finished seventh, but it was a gutsy, sustained run, and there was still some gas in the tank at the wire.

Keen Ice does something in all his races that bodes well for added distance – he is always improving his position within the herd, always passing horses. This is a battle tank of a horse that keeps methodically moving forward.

The Derby was our favorite of Keen Ice's performances. Not coincidentally it also was his longest race. We think additional distance is going to be of further benefit to Keen Ice. He looks like a good fit at 1 ½ miles.

Keen Ice does not have an elite herd dynamic. For example, we have not seen him move other horses with presence. He has had to play bumper cars at times. But he is a solidly built horse and he has no fear. We also haven't seen him demoralized despite six consecutive non-winning efforts.

With a smaller field and longer time-in-motion, the Belmont could be a good spot for Keen Ice to run his very best. As long as Desormeaux allows him to execute his natural pattern of motion, we expect Keen Ice will be running strongly at the finish.

Keen Ice is built for a long time-in-motion experience. He is semi-dependent on the horses in front of him tiring. But if this race falls apart up front, we think Keen Ice has the tools to take advantage of that situation. We view him as having a solid shot to hit the board and a chance to spring an upset.

MADEFROMLUCKY

Lookin At Lucky-Home from Oz, by Pulpit

Although he was pulled from consideration for the Kentucky Derby, we did some profiling work on Madefromlucky in late April. When we went back to review and update his file, we noted our closing remarks – “An underdog horse that never quits, Madefromlucky might be a good fit for the Belmont Stakes.”

It took Madefromlucky four tries to break his maiden, but the signs of a quality distance horse were there all along.

He debuted at Monmouth Park last June going 4 ½ furlongs, far too short for his mental/physical profile. He finished 5th, but he was reaching out emotionally in the stretch. He was trying to catch up, though he was green and he did not respond favorably to the whip.

Blinkers went on in start #2, too early for our taste. Madefromlucky broke slowly with the new head gear but he split horses to rally for third in a key maiden race going 5 furlongs. The winner was Stanford, a quick colt who later finished second in the Louisiana Derby (G2).

Madefromlucky got to try a mile in his third start. He didn't get position early, was hung wide, and was outpaced by the top two turning for home, but he really dug in late. He was blasting into forward space emotionally in deep stretch and was able to rally for second. He was best on herd dynamics there; he just didn't have enough time-in-motion.

Madefromlucky got his maiden win in December at Gulfstream Park when stretched out to 1 1/16 miles. He ran well in some tight spots there early. We like horses that react forwardly to herd chaos. Madefromlucky won off by 4 ¾ lengths, showing that he can attack open space as effectively as he attacks other horses. This is a very honest horse with a good two-year-old foundation.

Madefromlucky was sold privately and transferred to the barn of trainer Todd Pletcher after his maiden win. He cleared his NW1X condition in his first start for Pletcher, showing grit and improved breaking ability. Teaching horses to break and use their early speed is one of Pletcher's strengths as a conditioner. It took some fortitude for Madefromlucky to step up and beat winners, but he still looked mentally fresh after the race.

Next came a ship to Oaklawn Park, a class rise to the Grade 2 Rebel Stakes, and Madefromlucky's first race on a sloppy track. He finished second – six lengths behind American Pharoah. He was not in American Pharoah's league but he also wasn't afraid of him. It might have taken two miles, but Madefromlucky probably would have kept trying to catch up. We like to see that grit.

Madefromlucky didn't run as well when finishing 4th behind Pharoah in the Arkansas Derby (G1), but he was not allowed to run his best pattern of motion when being asked too early to advance into a hot pace.

Still, we took some positives from the race. He showed continued improvement at breaking from the gate, and he held his space despite almost being sandwiched at the start. And although he looked absolutely beaten in the stretch, he did not quit, winning his immediate space from Bold Conquest at the wire.

After bypassing the Kentucky Derby, Pletcher decided to remove the blinkers and run Madefromlucky in the Peter Pan Stakes (G2). It was hard to say precisely how the blinkers affected Madefromlucky, since we only got to see him run one race before they were added. They did not appear to have a great effect, positively or negatively. Madefromlucky's space awareness was fairly good for a blinkered horse. And the head gear did not change his natural pattern of motion. Madefromlucky has been true to himself in a lot of different circumstances, and that makes us trust him.

Going 1 1/8 miles around one turn at Belmont Park, the Peter Pan featured a sharper pace than Madefromlucky probably prefers, but he did a solid job staying in touch with the leaders, running them down, then surging into open space. It wasn't a seamless transition – his body language got a little wavy -- but it was efficient enough and he came through for the win. This was a possible growth race and a good prep for the Belmont.

Madefromlucky is a methodical grinder and his physical pace sometimes leads him to sitting next to horses as he slowly puts them away. He exhibits long, stretchy sensory transitions, but mentally he's not sticky. He can release horses cleanly and he knows how to win space.

We have never seen Madefromlucky intimidated by other horses. He is a Group Herd Dynamic horse, but he has a solid Individual Herd Dynamic to call upon when fighting for space. This is a balanced mindset. As long as the rider does not rush him, we think he has an above average probability of handling the Belmont distance.

Madefromlucky may not be flashy or extremely fast, but he is a gritty, competitive, sensory-sound horse who gives his best effort in every situation. An underdog who never stops trying, Madefromlucky has a good emotional conformation and herd dynamic profile for the Belmont Stakes.

MATERIALITY

Afleet Alex—Wildwood Flower, by Langfuhr

History told us that with only three career races and no two-year-old foundation to fall back on, Materiality was very unlikely to win the Kentucky Derby. History was right.

Youthful inexperience doomed Materiality in Louisville. He made a lot of mistakes, but there was a glimmer of hope at the end.

After breaking poorly from the #3 post, Materiality got shuffled back early. As an Individual Herd Dynamic horse (best in one-on-one fights), he wanted to be more forwardly placed. He was burning energy, climbing in the kickback, bouncing around early in the Derby traffic.

Materiality's mind was moving faster than his body – an inefficient mode to be in. In 13th place the first time under the wire, Materiality's chances of winning were probably already gone.

Materiality did not deal with the chaotic traffic of the Derby very well. He appeared distracted and he did not run with forward focus for long portions of the race.

Around the 3-furlong pole Materiality was in 12th place and had found his way to the outside. Rider John Velazquez asked him to quicken, but he got no response. Materiality went backwards from the 3-furlong pole to the quarter pole while under a ride. He looked done.

It is hard to say for sure because of the camera angle, but there was a point at the top of the stretch where Materiality might have been in last place. Then came the only positive aspect to this time-in-motion experience.

Materiality started running when he found himself in relative open space, with some daylight in front of him to the inside. From the top of the lane to the wire, he passed 12 horses. Materiality's time for the final quarter mile of about :25-3 was actually the fastest in the field. He showed he still had some fight, running through the wire to finish 6th, beaten 7 ¾ lengths.

The Derby should be a massive learning experience for Materiality. There is historical precedent for inexperienced horses who run poorly in the Derby and rebound in their next start. The immediate comparison that came to our minds was Curlin, who also did not race at age two and was undefeated in three starts entering the 2007 Derby.

Like Materiality, Curlin broke from an inside post, was shuffled early, but finished with some interest. (Curlin placed 3rd, 8 lengths behind Street Sense) Two weeks later Curlin won the Preakness and went on to be a two-time champion/Horse of the Year.

THT did not exist in 2007, but we went back and studied Curlin's Derby run and applied our current research. Our conclusion was that despite some superficial similarities, there was not much comparison. From a herd dynamic perspective, Curlin did a lot more positive things than Materiality.

Curlin had a much better Group Herd Dynamic. His positioning suffered because of the Derby traffic, but he wasn't overwhelmed by it. When he was forced to sit behind horses, Curlin adapted and conserved energy. He did not go backwards. And when he was asked to run, Curlin was driving through traffic into forward space.

Materiality ran a stretch-running pattern of motion in his Derby, but he was not efficiently mentally rating. He was bouncing around with a scattered focus. He was overwhelmed until late when open space presented itself.

We think Materiality is an IHD-dominant horse who is at his best near the front of the pack. He is very good at competing with lateral opponents or running forward into open space. Assuming his connections share our opinion, they are going to want to send Materiality toward the front in the Belmont.

Materiality's first three races were very strong. Going into the Derby, we had him as our #4 rated colt in the crop despite his inexperience. He reminded us of a big strong kid who was still developing his mind. When he is in a comfort zone, Materiality can mentally rate at a high cruising speed, and he savors one-on-one pace battles.

Materiality is youthful, a tad busy-minded, not fully seasoned, and physically gifted. This 8-horse field is going to be a much better place for him to showcase his skillset than the 18-horse Derby.

Materiality could return to his best form in the Belmont, and we don't see any major distance limitations here. We view Materiality as a legitimate contender and likely to be American Pharoah's primary challenger on the front end.

FROSTED

Tapit-Fast Cookie, by Deputy Minister

Frosted was one of the only horses in this year's Kentucky Derby to mount a serious rally from off the pace.

In traffic and back in 14th place early, Frosted ran a series of 24-and-change quarters through the central portions of the race and launched a very wide rally on the far turn, covering more ground than any other horse.

He finished 4th, just missing the trifecta by a neck, but it was an eye-catching run in a Kentucky Derby that lacked a lot of serious positional changes during the running.

When we went back and analyzed the tape, we were surprised at how much inefficiency we saw.

Frosted went Pressure Up (high head carriage, poor forward efficiency) out of the gate. Through the first quarter mile he lost a lot of position to the leaders, who were not going overly fast.

Frosted's blinkers – which contributed to an abrupt, disappointing fade in the Besilu Stables Fountain of Youth Stakes (G2) – were trimmed back in the Twinspires.com Wood Memorial (G1) with good results. But they still hurt his space awareness in the Derby. Frosted was searching for his spot in the herd early. He bumped with War Story and then was impeded by Materiality heading into the first turn.

Jockey Joel Rosario, who has shown a very good feel for Frosted both times he rode him, got his mount to relax and run fairly efficiently through the middle portions of the race. They launched their rally with a little more than three furlongs remaining.

There were really only three horses that closed any serious ground in this year's Derby, and all three are back for the Belmont – Frosted, Materiality, and Keen Ice. But while the latter two made up most of their ground in the final (slowest) furlong of the Derby, Frosted started his advance earlier into a tougher part of the battle for herd supremacy.

And Frosted looked very good for a while. His forward efficiency looked as good as it ever has and his release points were clean as he moved outside of horses. But in that final furlong as he approached the trio of pacesetters, Frosted's forward efficiency wavered. His head went up a little and he wasn't extending himself, fully reaching out for forward ground. His sensory extension was poor. Frosted ran his final quarter mile in about 26 seconds, not a great split for a horse with a stretch-running style.

We really thought Frosted should have been able to grab third place from a tiring but game Dortmund. Was he physically tired? Do Frosted's issues with space awareness affect his approach, particularly when he is behind other horses? We noted on the head-on view that Frosted was actually in behind the leading trio late. He needed to go outside them or forge into their space. He did neither.

Or perhaps, as we have seen from him in the past, was he burning emotional energy before the act of passing occurred?

The Derby is the ultimate psychological pressure race, and it was illustrative of where Frosted is at. We liked Frosted's win in the Wood Memorial, and we predicted he might hit the board in Louisville. But looking at the big picture, his Derby run was a lateral move on his development line. There is real physical talent here but there also is mental inefficiency.

Frosted has some pressure-up tendencies in him, and blinkers are not helping that. We would like him more if the blinkers came off, but at this point he probably would need a race or two to adjust to a renewed sensory field.

We went back and re-watched all of Frosted's races after the Derby, paying close attention to how he approaches the lead horses at the wire. His issue with sensory extension has been consistent. For example, watch Frosted's head carriage and lack of forward extension in very late stretch of the Remsen (G2) or Holy Bull (G2) Stakes. That is a physical manifestation of a psycho-sensory issue.

There are two ways to look at inefficiency when predicting future performance. One is that the horse is not running as fast as it is physically able, and therefore has the potential to improve. The other view is that unless you have a reason to believe something will change, the inefficiency will continue to hinder performance.

One point in favor of Frosted in the Belmont is that with only eight horses, this field should not pose the sensory challenges the Kentucky Derby did. But we are slightly negative on the idea of Frosted performing well mentally beyond 10 furlongs. He is a physically talented horse and certainly a contender, but horses that exhibit negative efficiency traits have a habit of coming up short in big races.

TALE OF VERVE

Tale of Ekati—Verve, by Unbridled

Tale of Verve has improved each time he has run without blinkers and he enters the Belmont Stakes on a forward growth pattern.

His second-place finish behind American Pharoah in the Preakness represented massive improvement from his early days.

Wearing a shadow roll and blinkers in his debut at Keeneland last October, Tale of Verve broke poorly and was 18 lengths back after four furlongs. He rallied in the lane to finish 4th, beaten $2\frac{3}{4}$ lengths. Physically that was an impressive amount of ground to overtake, but when we watched the head-on replay, we saw that Tale of Verve had no space awareness wearing all that head gear, and his body control really suffered. He was all over the track.

Tale of Verve ran three more times with blinkers, showing modest physical talent while struggling to interpret herd motion. His physical pace was being disrupted by psychological pressure.

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

In his second non-blinkered race, Tale of Verve improved again, breaking his maiden going $1\frac{3}{16}$ miles at Keeneland. He took another incremental step forward in the efficiency department. And he certainly looked like a classic-distance, time-in-motion horse. Mentally, he could have kept running after the wire.

In our Derby report we noted that there was room for improvement in Tale of Verve. He had shown some physical talent, a depth of emotional energy, and all sorts of inefficiency. We don't think he would have fared very well in the Derby had he made the gate. He was not ready for that.

The Preakness, which featured just an 8-horse field, was a much better race for him, and he took another step forward.

He looked much more efficient at the start. He also did a good job taking over the back herd, releasing from them, then re-targeting the front herd. That was the best forward targeting ability we have seen from him.

Tale of Verve ran down a pretty solid horse for second place, and Divining Rod was wandering all over the track late. Tale of Verve, although still a little sloppy, did a good job interpreting what Divining Rod was doing. He had to dive inside late to follow through and get second place. And that was a long, sustained run he executed.

Tale of Verve is reading and interpreting stimulus better than we could have imagined considering how poor his interpretations were early on his career when he was wearing blinkers.

With a methodical, drawn-out pattern of motion and a pair of emotionally strong finishes going $1\frac{3}{16}$ miles, distance is not a major question here. Tale of Verve might be able to run all day, and we are a fan of some of the traits his young stallion Tale of Ekati possesses.

Tale of Verve surprised a lot of people, including us, when he stepped up in the Preakness. He improved a ton, but we think he got a very favorable setup in Baltimore -- in the clear by himself with limited herd chaos, while American Pharoah singlehandedly dispatched anyone who tried to match strides with him.

Tale of Verve is on an upward growth pattern since the blinkers were removed. Based on just one strong race, we are not sold enough on his herd dynamic power to classify him as a win contender in this Belmont, but we won't be surprised at all if he hits the board.

MUBTAAHIJ

Dubawi (Ire)—Pennegale, by Pennekamp

After watching and dissecting his five runs at the Dubai carnival, we thought Mubtaahij was a legitimate contender in this year's Kentucky Derby. After studying him in person at Churchill Downs and reviewing the Derby film, we think we were wrong.

Mubtaahij did everything asked of him in Dubai. He handled dirt beautifully for a seemingly turfy Irish-bred. He beat older horses when he was just two years old. He dispatched a 4-year-old, previously unbeaten, Uruguayan champion Sir Fever. He looked dynamic when winning the UAE Derby by 8 lengths, dominating a trio of Japanese dirt horses plus the always tough Godolphin home team.

But when it comes to dirt racing, there is still no comparison between the rest of the world and America. Mubtaahij received a wakeup call in Louisville. He was a man among boys in Dubai. In the Derby he was a boy among men.

In Dubai he worked out a similar trip almost every time he ran – break from the rail, track just behind the pacesetters, let time-in-motion chew them up, explode home. We predicted he would have to work harder to get that trip in Louisville because of the stronger herd dynamics and likely faster pace he would encounter at Churchill.

Mubtaahij was lightly shuffled early in the Derby and found himself in 10th place on the inside early. But other than being further back than he was accustomed, overall he got a pretty good trip. He got an inside, relatively traffic free journey.

Mubtaahij had the opportunity to conserve emotional energy for a large portion of the Derby. And the inside opened up for him turning for home. His finish should have been stronger than 8th place.

We noted his lack of lead changes previously and it happened again in the Derby. Mubtaahij has a habit of staying on his left lead during the stretch run. We thought it was plausible to chalk this up to differences in training style between the Americans and Mubtaahij's world-class South African conditioner Michael de Kock.

But now we think it was a sign that Mubtaahij was not quite as well-rounded as his Dubai competition made him look. And regardless of the reason he doesn't change leads, that is not an ideal trait for a demanding, classic-distance dirt race.

Mubtaahij is a very efficient horse, and he has excellent space awareness. He is maneuverable and forward-minded. But he was unable to cope with the grueling intensity of American style dirt racing in Kentucky. He did not run poorly. He tried to execute his pattern of motion. He just wasn't good enough on the day.

Mubtaahij was tiring in late stretch of the Derby, mentally and physically. Given his relatively good trip, that does not bode well for him stretching out to 12 furlongs.

Mubtaahij and his trainer now have a better idea of what it takes to contend in the American classics. Some improvement is expected at Belmont, where he has been training for weeks. But he will need a huge leap forward to contend.

Heading into the Derby, we didn't think Mubtaahij would have any distance limitations mentally. We think he could find the rhythm of a 12f race more to his liking, but based on what we saw in Louisville, we don't classify him as a win contender in the Belmont.

FRAMMENTO

Midshipman—Ginger Bay, by Golden Missile

Frammento is a gritty, hard-trying horse, but we didn't like his profile at all for the Kentucky Derby.

In our Derby report we wrote that mental efficiency would be Frammento's biggest obstacle in the Derby. His eye dependency hurts his ability to interpret herd chaos out of the gate. That costs him early positioning and leaves him with far too much to do in the middle and latter stages of a race.

And the more Frammento has to do, the more chances his inefficiency will cost him a length here and there. He is a good physical talent, but not good enough to spot Grade 1 horses any lengths.

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

Trainer Nick Zito added the blinkers for the Besilu Stables Fountain of Youth Stakes (G2). Frammento runs the same general stretch-running pattern of motion with the blinkers. But there is a tradeoff. He shows better forward focus and efficiency in the lane with blinkers, but they have hurt his gate efficiency and amplified his eye dependency.

Frammento was climbing early in the Kentucky Derby and struggling with his sensory reads throughout the race. He never had a chance. Keen Ice absolutely shoved him out of the way during the stretch run.

Although he does not have an elite sensory system, we do like the grit Frammento shows. He rallied from 16th to 11th in the Derby. He was still trying hard at the wire in the Derby, even though he wasn't running with good forward efficiency.

Regardless of running style, grit and even physical ability, there is a point where more distance will not help a horse with efficiency issues.

From the sensory standpoint, Frammento is an average horse. In that regard, the smaller field in the Belmont is in his favor.

Frammento is a fighter, but he is a cut below these on mental efficiency and herd dynamic.

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.