

Temperament

Horse Character in Breeding

A SPEECH PRESENTED AT THE 2011 WAHO CONFERENCE
BY EMMA MAXWELL

INTRODUCTION

My aim is to provide an overview on current thinking about horse temperament, to see how it applies to the Arabian, and whether we can use a more structured way of thinking about horse character as a useful tool in breeding.

I grew up on a breeding farm that had around 100 Arabians. I am familiar with up to six generations' worth of homebred horses. As well as showing at halter, I also backed and rode every horse we bred that reached three years old. I have raced as an amateur on Arabians trained from home, and have competed in show ridden classes and low level jumping and dressage. I do behavioral troubleshooting; working with horses and their owners at their home, finding solutions for handling problems. I have also had some experience of non-Western Arabian horses in Turkey, arranging the parade for the 2002 WAHO Conference. My degree, from Cambridge University, was in Experimental Psychology. I am currently an Arabian photographer.

HISTORY

Part of the legend that has grown around the Arabian is due to his character, and historically his admirers have enthused about his outstanding nature, making as much of it as of his qualities of beauty and endurance. This abridged quote is from Wilfrid Blunt:

“The single object for which the Kehailan is bred by the Bedouins is service in their wars. The sole practical test is in the raid. What is of at least equal importance with speed, is facility in turning, a light mouth, intelligence and courage. All these qualities are conspicuous in the true Kehailan, and seem inherent in his blood ...” But Blunt added that, “The Bedouin camp is a perpetual turmoil of noise; he is bold and cool-headed. From his foal-hood, the children have crawled among his feet in the tents; he has the temper of a lamb.”

So it would appear that the Arabian has two different sides to his nature, the courage and the quietness. The illustration here is of a mare (**figure 1**) who personified both aspects of the ideal Arabian nature to me.

I think most of us are somewhat lazy in reciting this positive view of the Arabian, without making much effort to ensure that we are preserving it. The Arabian of the past was a horse bred in the desert and at all times in



Figure 1: War horse ... tent mare. Aliha (Indian Silver x AK Atallah).



close contact with his breeders. Both sides were reliant on the goodwill of each other. Today most Arabians are many generations away from the horses Wilfrid Blunt saw, and the mutually dependent lifestyle he witnessed possibly exists now only in Syria (**figure 2**). Many breeding choices now are made either by large breeders who have little personal contact with every animal in the herd, or by small breeders who use a stallion they found on the Internet. Merely assuming we have retained all the qualities

Figure 2: Rider and horse of the Anazeh tribe, Syria, 2006.



Many breeding choices now are made either by large breeders who have little personal contact with every animal in the herd, or by small breeders who use a stallion they found on the Internet. Merely assuming that we have retained all the qualities that allowed man and horse to rely on each other so deeply is precisely that, an assumption.

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NEGATIVE POSSIBILITIES

Outside the breed the Arabian does not always generate such praise and has a lesser reputation as a rather hot and crazy beast. This is important, because in all fields of competitive endeavor, only the top percentile of horses are successful and become mainstays of breeding. The also-rans must find another role. Because of their smaller size, Arabians are best suited as a general riding horse for the less ambitious owner capable of lower level jumping and dressage and a lot of pleasure riding. Here is a group of stallions (**figure 3**) going on a 100km pleasure ride over two days in Iran, which I had the honor of joining. Arabians have an undeniable appeal to less experienced riders because their size is less threatening and they are lovely to look at. But Arabians are often passed over by just this category of rider because they have a reputation as “crazy Arabs.” This is a shame because the Arabian is a uniquely impressive riding horse as this French Arabian horse shows (**figure 4**).



Figure 3: Two-day pleasure ride on stallions over 100km in Iran.

We need to consider the negativity and discern whether it is a real problem or a perceptual problem and work out whether there is a solution.

I think there is a small problem of perception because a lot of our visual shorthand for “type” involves animation and

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Figure 4: Arabian stallion Hadban el Arab (Mashour x Kelle d’Oa) in France.



Figure 5: Displaying “type” involving animation and snort. Nooredinne Ezzain (Ansata el Murtajiz x NK Nada)



Figure 6: Getting “expression.”

the Arabian is nearly always presented in pictures as all snort and flouncing tail (**figure 5**). This has been the case starting with the lovely 19th century illustrations and is clearly obvious in most of the pictures of Arabs used for advertising.

In my second job as Arab horse photographer it is telling that my most useful prop is a person in a hairy blanket (**figure 6**) creeping around the field getting the horse to produce the bug-eyed arch that says “type.” Perhaps halter shows also do not help promote the Arabian breed either, and they generate a disproportionate amount of publicity for the numbers of horses that actually take part in them.

More importantly, we may be sliding toward a real problem because few people are considering temperament in a structured way that affects breeding decisions. With little discussion, let alone consensus

at to what is good and what is bad, decisions are being made randomly, with the inevitable varied results.

CAVEATS

There are three main caveats to producing a final and immutable score for one horse’s temperament. First the complexity of the topic, second the subjectivity, and third the grey area between learned and innate behavior.

First a simple scale of 1–10, from Dr. Jekyll to Mr. Hyde, does not suffice. As the first quote I used explains, the Arabian must be both bold in action and steady back at

A sweet-natured horse who falls to bits when asked to do something new in a different environment is not really much of an Arabian and would never have been rated highly by a Bedouin, a 19th century cavalryman, or many competitors today.

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camp. Some horses are indisputably sweet at home, but as most adult horses need to do rather more than eat, sleep, and get out of the way of the wheelbarrow, bedside manner is not the end of the story. A sweet-natured horse who falls to bits when asked to do something new in a different environment is not really much of an Arabian and would never have been rated highly by a Bedouin, a 19th century cavalryman, or many competitors today. So equally we must assess how a horse responds to a challenging situation.

Comparing behaviors in the different situations that a horse is expected to deal with in his domesticated life allows us to build up a picture of character traits and how they vary. There do exist a number of studies on this matter that have started to create an outline of equine character traits, which will be the main body of this talk.

Precisely defining these traits brings us to the second major difficulty of the task.

How subjective is it? I know I sometimes silently disagree with an owner's eulogy of their one darling horse, but I also know from chatting to other horse trainers that most training yards have a roughly similar view of the same horse in their care — even when they are training the horse for different roles. A couple of studies have addressed this topic and they found that people working with horses *do* broadly attribute the same traits to the same horse consistently.

Third there is the confusion added by the nature/nurture debate, which is undeniably a stumbling block. There is no question that horses who have been well handled and well socialized give a far better account of themselves than horses who have been either spoiled, isolated, or terrorized. I have found that the owner of a horse who clearly displays undesirable aggressive or panicky temperament issues will always have a handy explanation in the form of his past mistreatment.

These explanations are usually partly true. But nature and nurture constantly interact and the environment can only act on the genes already present, not on a blank slate. So while a horse might not have displayed that behavior if he had not been exposed to provocation, another horse in an identical situation would not have responded the same way. When a horse takes the law into his own hands completely and attacks someone, I would be dubious about that horse and confident that there was a genetic input as well.

HISTORICAL ASSESSMENTS

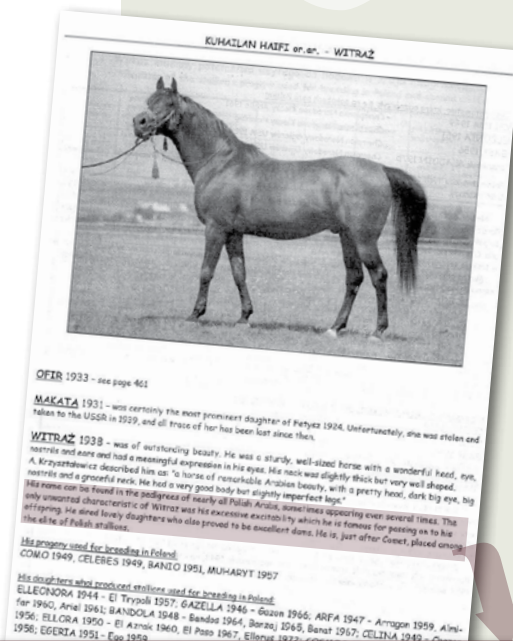
In the past, there have been efforts to record temperament, and many of the most important horses of the last century were bred by large breeding establishments that kept good records. The annals of Tersk or of Poland included written assessments of temperament features and studying these, one can almost trace present characteristics to past ancestors.

It is for example, almost impossible to research the 1938 stallion Witraz without finding some reference to his hot nature and the fact that he sometimes passed it on (**figure 7**).

Written reports are helpful when written dispassionately, but this kind of overview has only ever been available from the big state-run studs. The market potential for a popular stallion in an age of transported semen has meant that contemporary assessments of temperament written by private breeders tend to be airbrushed public relations exercises. It is hard for a breeder today to get quality information about the actual temperament of a horse he does not own.

For privately bred horses my train of enquiry led me to stallion licensing. In Germany there is an optional 70-day performance test for stallions in which their riding and general abilities are assessed and scored for a final result (**figure 8**). Temperament is assessed with a general 1 to 10 score and it is good to hear that Arabians regularly finish with a high score between 8 and 10, although we cannot apply this to all Arabians, as only the most able enter the 70-day test. However, many countries do have a voluntary scheme that assess Arabians more thoroughly as performance horses.

Figure 7: Excerpt from the book, *Register of Polish Purbred Arabian Stallions used between 1944 and 1993 Vol I 1944-1983* by Roman Pankiewicz.



THE ONLY UNWANTED CHARACTERISTIC OF WITRAZ WAS HIS EXCESSIVE EXCITABILITY WHICH HE IS FAMOUS FOR PASSING ON TO HIS OFFSPRING. HE Sired LOVELY DAUGHTERS WHO ALSO PROVED TO BE EXCELLENT DAMS. HE IS, JUST AFTER COMET, PLACED AMONG THE ELITE OF POLISH STALLIONS.



Figure 8: Arabian stallion Jennissej at the German licensing 70-day performance test.

WHAT CAN WE MEASURE

Moving assessments of temperament away from the anecdotal and into the measurable is not an easy task, but attempts are being made. There is far from a tidy final verdict, but researchers have converged on several useful directions.

The table below (**Table 1**) is from a study that attempted to compare

variation in temperament between breeds. Researchers asked 50 vets and trainers to complete a questionnaire about horses under their care that asked them to describe each individual using the only the words available in the lower list. The researchers then filed them under these six main headings. For simplicity I will talk about character under these six headings, although of course they both overlap and interreact.

The six headings are **DOMINANCE, ANXIETY, EXCITABILITY, PROTECTION, SOCIABILITY, and INQUISITIVENESS.**

I will tackle each of these areas one at a time, fitting other studies into this basic framework, and including other personal observations as I go along.

First, **DOMINANCE** is clearly a vitally important part of the man/horse interaction. Individual variance in dominance has not been studied in horses except to

TEMPERAMENT ASSESSMENT (Table 1)

DOMINANCE	ANXIETY	EXCITABILITY	PROTECTION	SOCIABILITY	INQUISITIVENESS
AGGRESSIVE	APPREHENSIVE	ACTIVE	MOTHERLY	PLAYFUL	CURIOUS
EFFECTIVE	FEARFUL	SLOW	PROTECTIVE	POPULAR	OPPORTUNISTIC
EQUABLE	INSECURE	RELIABLE		SOCIABLE	INTELLIGENT
IRRITABLE	TENSE				
SUBORDINATE	SUSPICIOUS				
STUBBORN					

PERSONALITY ADJECTIVE BEHAVIORAL DEFINITION (TRAIT)

ACTIVE	Moves around a lot, does not like being still for long.	POPULAR	Sought out as a companion by others.
AGGRESSIVE	Causes harm or potential harm to other individuals, both horse and human.	PROTECTIVE	Prevents harm or possible harm to others.
APPREHENSIVE	Seems to be anxious about everything, fears or avoids any kind of risk	SLOW	Moves and rests in a relaxed manner, moves slowly and deliberately, not hurried.
CURIOUS	Readily explores new situations.	SOCIABLE	Seeks companionship of others.
ECCENTRIC	Shows stereotypes, unusual mannerisms, and exaggerated behavior.	SUBORDINATE	Gives in readily to others, submits easily and does not put up a fight to defend self.
EFFECTIVE	Gets own way, can control others, fairly dominant individual.	TENSE	Shows restraint in posture and movement; carries the body stiffly, which suggests a shrinking tendency, as if to pull back and be less conspicuous.
EQUABLE	Reacts to others in an even, calm way; not easily disturbed .	UNDERSTANDING	Responds in a discriminating and appropriate manner to the behavior of others.
EXCITABLE	Overreacts to any change, easily excited, highly strung.	SUSPICIOUS	Does not trust others readily (human and horse), trusts few individuals.
FEARFUL	Retreats readily from others or from outside disturbances.	RELIABLE	Can be trusted to do things or behaves well, might also be considered a safe horse to be with.
INSECURE	Hesitates to act alone; seeks reassurance from others.	STUBBORN	Does not give in easily, not very cooperative.
IRRITABLE	Reacts negatively with little provocation	INTELLIGENT	Learns new things easily/fast, benefits from mental stimulation
MOTHERLY	Provides warm receptive secure base for others, is tender and caring.		
OPPORTUNISTIC	Seizes a chance as soon as it arises.		
PLAYFUL	Initiates play and joins in when play is solicited.		

note that in domesticated species, dominance is much lower than in wild animals. The domestication process itself has selected out the most dominant animals.

Clearly individual Arabians do vary in this trait and dominance is an important trait to consider because it will affect every moment of your interaction. Some horses like to be in charge, others would rather follow. A dominant mare will move a filly out of the herd. She is in charge of the herd's response to a person acting in a threatening manner. She assesses the threat and when she considers it is over, she walks away with her herd following.

It is rewarding to the horse trainer to coax results from an anxious horse but I found the satisfied glow wore off rapidly when we bred such horses to each other. The row of anxious little offspring who all needed the same enormous amount of input to get results from seemed a foolish way to proceed.

Neither type of horse is better than the other, except on both of the extreme edges of the trait. Horses who are constantly obsessed by trying to get the better of you and any other horse are extremely tiresome and frequently end up involved in a physical confrontation. Horses who cringe subserviently to any other horse, get beaten up by the other horses, which reinforces their subservience. Horses who have been trained by the rest of their herd or by harsh human training to be subservient are in such a state of insecurity they find it hard to learn new skills.

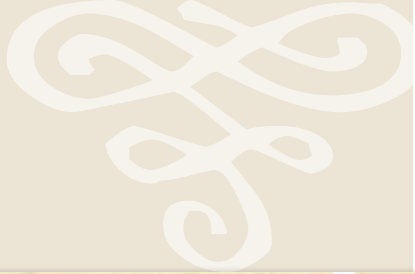
It is worth noting that anecdotal reports indicate that many of the best performance horses, especially in racing, are in fact dominant within the herd, and certainly whenever we put what we regarded as our best mares in a paddock together, they were all chiefs and no Indians.

While dominance is linked to performance it is not necessarily the case that every dominant horse is talented — I am suspicious of linebreeding to famously strongly dominant horses because I think you end up with horses that are not just egotistical but so antagonistic they are impossible to get any type of performance from.

The second trait, **ANXIETY**, is also fundamental.

Like dominance, much of it is inherent. Anxious horses are tense and hard to teach as they worry and turn inwards and don't respond well to stimuli. Their only goal is to return to their comfort zone. Anxious horses are easy to spot. A video on www.arabianhorseworld.com shows a filly who is a bit anxious and the tension makes her step a bit short, she flicks her head, her tail is not fully up, and she turns back to home very often.

Raising a horse's anxiety is not a safe thing to do — it is the opposite of all other forms of horse training because it brings the fight or flight response nearer to the surface.



The opposite of anxiety is security, and secure horses behave evenly in a wide range of situations, they settle in a strange stable, always eat what is put in front of them, don't sweat up in agitating situations, and are constantly relaxed. Security is a highly desirable trait because it means your horse continues to use its brain whatever the situation thrown at it.



Figure 9: Treatise on horse care from 12th Century Iraq, copied from a lost 9th century work.

Of course, anxiety and security can be influenced enormously by the horse/handler interaction, although if you want a police horse you would be better to start with the right raw material. I like this 12th century illustration (**figure 9**) from a veterinary treatise originally written in the 9th century as the handler clearly knew how to settle his horse while cooling his legs in the water. Studies have found that horses gentled on the forehead show reduced

cortisol levels compared with those scratched on the wither or patted on the neck.

Every horse has a comfort zone in which he is most at ease, and this zone can be expanded by training in small steps, so that over time the rather nervous horse can achieve an awful lot in a relationship with someone he trusts. It is rewarding to the horse trainer to coax results from an anxious horse, but I found the satisfied glow wore off rapidly when we bred such horses to each other. The row of anxious little offspring who all needed the same enormous amount of input to get results from seemed a foolish way to proceed. I would always aim to breed an anxious horse to a secure one.

Conversely, you can make a horse more insecure by asking him to learn more than he is ready for, or by an inconsistent response to his behavior, which raises his stress levels. I have major reservations about some systems of halter posing because of the extreme tension required in a horse that is only standing still. This tension can be most easily achieved by raising his level of anxiety. Raising a horse's anxiety is not a safe thing to do — it is the opposite of all other forms of horse training because it brings the fight or flight response nearer to the surface. Some recent experiences have also made me wonder if the extreme level of tension required while posing up is causing

more inherently anxious horses to actually be selected for, which I find concerning.

Extremely anxious horses appear to be most prone to repetitive behaviors — weaving, fence-walking, and self-mutilation, although stereotypic behavior probably deserves a category of its own. These behaviors interfere with a horse's trainability and should be considered worth breeding away from. Stress is also a causal factor in

If you want to breed a showy horse, you cannot just carry on breeding an excitable horse to an excitable horse. If both are not totally secure, you will quite likely end up with a weanling that would rather commit suicide galloping into a wall than wear a different colored head collar. I have met this last variety!

both laminitis and colic, making anxiety probably my least desirable trait in horses.

The third trait is **EXCITABILITY**. It is superficially easy to confuse anxiety and excitability, but it is possible to separate the two. I might also describe this attribute as energy, or expression, or spirit and it is undeniably a fundamental of Arabian type. Another video on www.arabianhorseworld.com shows a mare in the same place as the last filly, who is excitable but not anxious, she has her tail up and is snorting but steps with even strides and uses much more of the area.



Excitability is a good thing for an Arabian to have — but only really in combination with a healthy dose of security. Excitable horses are alert and attentive and expressive, and because they notice and respond to stimuli fast they are easy to teach. Excitable and secure horses are a delight to work with because they are both relaxed and charismatic; they switch on, *and* they switch off. Here is this type of mare with her biggest fan, my son (**figure 10**).



Figure 10. Relaxed and charismatic mare Angelikah (Masca x Akbura).

If you have an excitable horse that is also anxious it will exaggerate every tiny distraction into a horse-eating ogre with a quick adrenaline blast that overrides all other considerations. Anxious and excitable horses are far quicker to reach the fight/flight response. While panic is a normal horse response in evolutionary terms, in the domesticated horse it is a pretty undesirable feature and horses that tense up, glaze over, and thunder off, literally at the drop of a hat, come low on my wanted list.

Breeders need to think carefully about the difference between the two traits of excitability and anxiety. Breeding for presence can lead breeders to always favoring excitable horses



Figure 11, left: How to get the “Arabian” look ... tension versus charisma, **figure 12, right.**

whether they are of the secure or insecure variety and this, I think, is a mistake. A tense horse may look at first glance like a horse with real presence, but it is not a particularly safe or useful horse and would not have had any place as a nomad’s horse. Here is a picture of a tense horse (**figure 11**) in a fashionable position with what made her tense still in the picture. Tension is not charisma and the sooner we learn the difference the better. Here is the filly a bit later with a natural charisma (**figure 12**).

If you want to breed a showy horse, you cannot just carry on breeding an excitable horse to an excitable horse. If they both are not totally secure, you will quite likely end up with a weanling that would rather commit suicide galloping into a wall than wear a different colored head collar. I have met this last variety!

PROTECTION. In the original questionnaire all the horses scored highly on this trait. My illustration shows a mare attacking the person lassoing her son (**figure 13**).

Other studies have noted that the Arabian has a higher incidence of foal rejection than any other breed. On one voluntary questionnaire filed in the U.S., Arabians had a 5 percent incidence of rejection, compared to other breeds, which stood at 2 percent. It was also noted that particular male horses appeared often in the rejectors’ pedigrees leading to the suggestion that rejection had a high heritability component. The wisdom of breeding from rejectors is a subject worthy of discussion.

SOCIABILITY determines how well a horse interacts with other horses. At first glance it would seem that a high score on this would be a positive trait, as most horses

Figure 13: Mare trying to protect her colt from capture.





Figure 14: Quiet veteran gelding.



Figure 15: The same gelding without his friend.

My personal observation is that over the last 20 years it has become harder to find a docile, pleasure riding horse among Arabians that are a by-product of highly competitive programs. There is a trend toward a more reactive horse who requires a more professional owner.

still have to live in groups of some sort. However, the tests developed to measure this response record the stress responses of a horse to isolation. A horse who is stressed by isolation becomes anxious and is therefore not useful for any sport or pleasure activity that requires a horse to be by himself. This is nearly every activity except racing. Here is a picture of a horse that I was trying to photograph who appeared in most respects to be secure and unexcitable (**figure 14**).

Here is the same horse (**figure 15**) when I brought his friend out and then removed him, triggering a response to isolation. Nice animated picture but not ideal behavior for a teenage dressage gelding!

On the other hand, life experiences in a big herd have positive repercussions for handling. We observed this when we got our first state stud horses, especially the males. Stallions who have grown up in bachelor herds at one and two were much more tractable than privately bred colts. This observation made us completely refigure how we

brought up our colts and from then on they lived together, however we valued them. Growing up in a big herd situation makes horses more experienced at “relationships.” Dominant horses who have grown up in a big herd are more tactful about how they present their desire to dominate you and less offended if you politely turn them down. Followers fall easily into line. Conversely, a solitary lifestyle in its formative years can affect a horse’s trainability negatively. An extremely dominant horse who repeatedly argues over the same situation is often a male horse who has never lived in a herd situation, or a female horse who has lived in a small herd environment over which she gained dominance at an unnatural age such as a yearling. These horses have never experienced backing down from an argument and don’t intend to start with you.

INQUISITIVENESS is something the Arabian is noted for, and he scored the highest for this trait in the breed study. For brevity I am going to consider it alongside **INTELLIGENCE**. Remarkably little has been done to test **INTELLIGENCE** in the horse given the plethora of learning tests undertaken in labs with smaller mammals. A

lot of the work has been in tandem with humans to try and see if horses regarded humans as predators, affiliates, or food providers. One interesting test found that ponies could discriminate between photographs of people who had rewarded them, and those who had punished them. Horses could also observe and copy the route taken by a human demonstrator in a maze test indicating they could see humans as affiliates. The take-home message appeared to be that horses learned quickest for food rewards, over and above any other form of praise.

Bright horses put two and two together quicker than others and can learn in a single experience situation. This can be a good thing or a bad thing depending on the rest of their personality and depending on your consistency of behavior as teacher. Unintelligent horses seem to have difficulty discerning between different forms of their own behavior and thus don’t understand why one behavior is praised and one is not. Clever horses are aware both of the subtleties of their own behavior and of yours. Clever horses are frequently chastised for obeying small signals that their owner was not aware of giving, and if your horse is bright, you have to really concentrate on your communication with him. They also get bored easily and invent distractions. A clever horse is a double-edged sword.

IRRITABILITY

I have added one final category that can also appear on character assessments, although it is physical in origin. Irritable horses seem to have thinner, more sensitive skin than other horses and can object to being touched around the elbows, flanks, and legs. This ticklishness makes them intolerant and can cause them to nip or kick you for touching a sensitive area, and thus gain a reputation for bad behavior.

Irritable horses are irritating to own, but they can also be fairly described as more sensitive. This can result in their being more sensitive to aids and light and responsive to train. Like intelligence, this trait can work with or against you, it just needs to be taken into account. Refinement is a goal for many, many Arabian breeders and I agree that sensitivity is a part of Arabian type. However, it has also recently been brought to my attention that sweet itch seems to have some common ancestors and is almost always present in very “dry” horses. Perhaps with sensitivity we can have too much of a good thing.

FRENCH AND RUSSIAN STUDIES

I will now summarize two studies of temperament involving Arabians that attempt to provide a holistic overview of their temperament.

An admirable project has been undertaken by the Haras Nationaux of France that has taken several years to complete. The researchers’ goal was to provide a succinct summation of the nature of an individual horse, which could be repeated over time with the same results. The tests they used remained consistent in a longitudinal study, so that the results a horse provided at eight months old could accurately predict the reactions of the same horse at riding age. They identified five simple tests in which they could consistently measure different dimensions of a horse’s temperament and measure difference between horses (**figure 16**).

The first quarter described **ACTIVITY**, simply the amount of time a horse devoted to running around or staying still, at his own leisure, and rated horses on a scale from placid to energetic.

The bottom left quarter measured two responses. First, a response to **SUDDEN** actions; for example, a loud and sudden noise. The second noted reaction to **NOVELTY**; for example, a large balloon in the center of a familiar paddock. Results

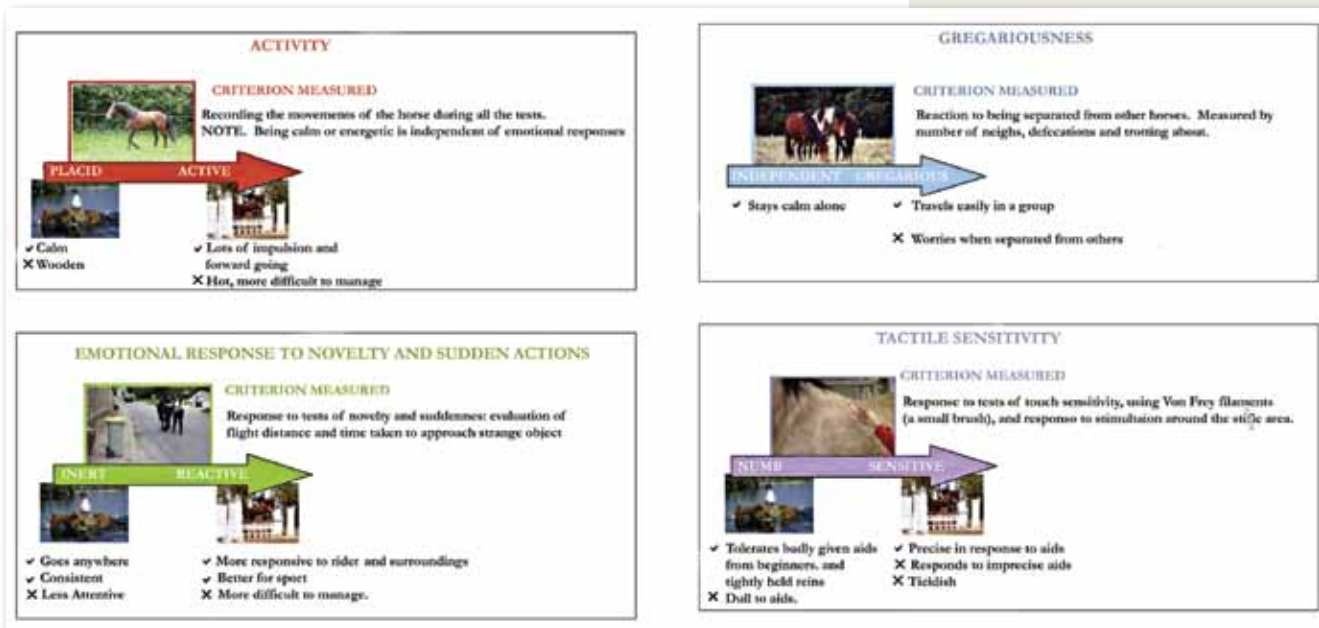
from both tests were added together and provided a scale of reactivity, from dull to reactive.

The top right quarter measured responses to **ISOLATION** from other horses and rated them on a scale of gregarious to independent.

The bottom right quarter measured tactile **SENSITIVITY** tested with a bristle brush known as a Von Frey filament. Horses were rated on a scale of inert to easily irritated.

The study concluded by broadly dividing the horses into two types, neither good nor bad, but noted that horses who scored very low in most categories, quiet, not very reactive, calm in isolation and physically not very sensitive, were more suited to becoming pleasure horses. However, the low scorers were not appreciated by more ambitious riders who prefer a horse that scores more highly in three of the categories: more energy, more reactive, more sensitive. Most top performance horses are reactive and sensitive because they have a subtler response to human

Figure 16: The Haras Nationaux of France study of the different character dimensions measured and interpretation of the results.



aids. The only low score that was not differentiated between the two sorts of goals was gregariousness. A horse who does not like isolation was not regarded as particularly desirable by either pleasure or sport riders, although it was noted that gregariousness does decrease with age.

Reactions to the five standard tests were rated on a scale of 100 and a personality profile was drawn up for each stallion. These profiles are made available to mare owners and can be found on the Internet. They allow mare owners to assess the nature of a stallion they have never met, thus enabling them to make the best possible breeding decision according to their mare and their intended use of the foal.

This simple division into sport versus pleasure horses does illustrate a horse-breeding dilemma. Breeding a super reactive, highly energetic horse is all very well, when he is the Derby winner, or a U.S. National Champion, but what to do with the ninety-nine other hotheads who didn't make the grade? This is a problem that has dogged the Thoroughbred racing industry for years and is one that may currently be developing into more of a problem within the Arabian breed as specialization increases. Easiness of travel has made worldwide competitions

a reality, and shipped and frozen semen has made the worldwide use of any horse at the top of his game a reality. This increased level of competitiveness means breeders have to be focused on a narrow selection of attributes to succeed, with the unintended consequence that other considerations get sidelined. My personal observation is that over the last 20 years it has become harder to find a docile, pleasure riding horse among Arabians that are a by-product of highly competitive programs. There is a trend toward a more reactive horse who requires a more professional owner.

TERSK

A second innovative study was undertaken at Tersk, long before anyone else, in the 1970s. Tersk already kept a written record of temperament that noted 2 scales, Well Behaved versus Antagonistic, and Vigorous versus Lazy. All horses had an assessment at age 2 that discussed conformation in detail and rated the horse on the 2-trait scales.

Being aware of the character traits that can vary in a horse and breeding wisely to avoid extremes seems to be a worthy goal for the good of the Arabian and his future owners and riders.

This study attempted to provide an even more in-depth analysis of character using some similar tests to those of the French study — reactions to sudden noises or novel items. Researchers also used a learning test involving how quickly a horse learned in which of two buckets some oats would be. This was further combined with a questionnaire about the horse's behavior in the stable, while being trained, and while actually on the racetrack.

The study's conclusions divided the horses into four temperaments, which they summarized in the ancient fashion of Galen (**Table 2**). The first group of horses, over half of the total, described as "Sanguine" were summarized as strong, well-balanced, and active. The second largest group at 37 percent were designated "Phlegmatic," that is strong, well-balanced but inactive. A very small 2.5 percent were described as "Choleric," reactive and unbalanced and the final 7.5 percent were "Melancholic," regarded as weak and inactive.

I have taken the liberty of translating this into "user speak," in which sanguine horses are the good competition horses; phlegmatic horses are good pleasure horses; choleric horses are essentially undesirable; and melancholic horses, not terribly useful.

This study does make intuitive sense to me as an overview of the temperaments available, because unlike the French account in which all horses are equal but different, it does admit that there are a small number of undesirable horses.

Table 2:

RUSSIAN STUDY OF TEMPERAMENT OF HORSES AT TERSK

	ACTIVE	INACTIVE
WELL BALANCED	SANGUINE 52%	PHLEGMATIC 37%
UNHELPFUL	CHOLERIC 2.5%	MELANCHOLIC 7.5%

HERITABILITY

Temperament is a complex trait and at present heritability studies are in their infancy, as they are for many other desirable characteristics. Studies have shown that stereotypic behaviors (crib-biting, box-walking, and weaving) occur at 2.5 percent in the Thoroughbred population but up to 30 percent in some families. There are

no data for Arabians; as mentioned, rejection has been linked to male horses in the pedigree. Understandably most studies have attempted to find links to male horses so as to exclude the possibility of learning behaviors from the dam. One interesting avenue found that the distance a foal strayed from its dam while at side was strongly influenced by the sire. The distance spent apart also correlated positively with how much fear a horse showed in the novel object test in adult life, with those that stayed closest to their mothers being most anxious in later life and those independent foals remaining bold.

Another factor that raises its head regarding heritability is that breeding within closed bloodline groups appears to increase the incidence of some of the undesirable behaviors — foal rejection, self-mutilation, and box-walking, for example.

SUMMARY

I have used this framework to look back on some both positive and negative examples from the personal realm. Here is one of my favorites (**figure 17**), a consistently cheerful and trustworthy horse, who won ten races and the Derby in his native country and was a splendid halter show horse in Europe. I like to think that ability to compete in more than one discipline is a hallmark of the great Arabian.

In the first column of **table 3** I have averaged the scores of the horses I have met with ideal natures, like the one above.

The second column is a composite of the most difficult Arabians I have worked with. An insecure but highly dominant horse is unpredictable. When its anxiety is at bay it spends the whole time trying to bully you, when anxiety takes over it crashes off in a panic and ignores you completely, and the Russian description of choleric seems appropriate. Untypical Arabians would score low in most categories.

Of course this table is not a final word and finished product, merely the best model I could produce so far, but it does give a sense of how we might employ a more systematic way of thinking about equine temperament to guide our breeding. Any experience of successive generations of horse breeding will bring you to the conclusion that temperament is heritable, although in the same way as other desired characteristics such as speed or beauty. It is too complex to provide a fail-safe formula. However, there are breeding practices that, followed over time, will statistically result in your producing a better foal crop. Being aware of the character traits that can vary in a horse and breeding wisely to avoid extremes seems to be a worthy goal for the good of the Arabian and his future owners and riders.



Figure 17: *Karat (Aromat x Kaluga)* winner of 10 races from 32 starts and the Russian Derby, an All Nations Cup Top Five, and World Championship Top Four Stallion.



Table 3:

PERSONALITY CHART

	MOST "IDEAL" ARABIANS SCORES OUT OF 3	"MOST DIFFICULT" ARABIANS SCORES OUT OF 5
DOMINANCE	4 HIGH A GOOD OPINION OF THEMSELVES	5 MAXIMUM DOES NOT LIKE ANY INSTRUCTIONS
ANXIETY	1 LOW CALM AND RELAXED	5 MAXIMUM TENSE AND SUSPICIOUS
EXCITABILITY	4 HIGH EASY TO GET GOING	5 MAXIMUM ALWAYS ON THE MOVE
PROTECTION	3 MEDIUM WILL CHASE OFF THREATS BUT NOT VIOLENTLY	5 MAXIMUM VIOLENT RESPONSE TO THREATS, JEALOUS OF CONTACT WITH OTHER HORSES
SOCIABILITY	1 LOW (BUT WELL SOCIALIZED IN YOUTH)	5 MAXIMUM ALWAYS NEEDS A HERD COMPANION
SENSITIVITY	3 MEDIUM RESPONSIVE BUT NOT IRRITABLE	5 MAXIMUM VERY TICKLISH AND IRRITABLE