

## **Diamonds Aren't Forever**

By

Bill "The Book" Richardson

Sometimes things don't end up the way they start out, and this article is certainly a great example -- so much so in fact, that what started out as something simple has now turned into at least 15 pages. As I am sure that you don't find me as fascinating as I apparently find myself, I have decided to break this into several articles. Unfortunately, this has left me several introductions short because every time it splits, I need another introduction.

Truthfully, I was a little nervous about this particular article and, although I started out intending to write about genotype and phenotype, I slowly approached this topic to see how it would come across. As I went along, I became more confident that I could explain it in sufficient detail, so I abandoned the genotype and phenotype discussion for a later article.

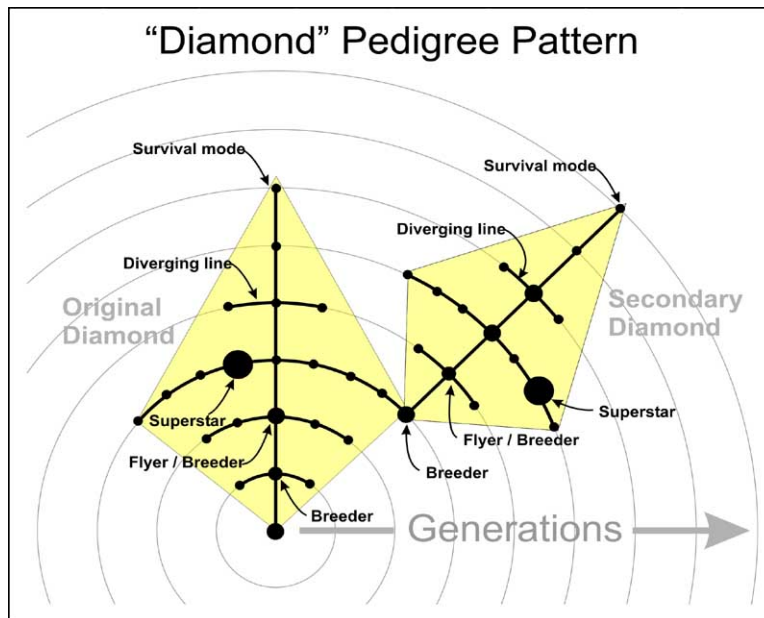
Although I eventually intend to discuss the importance of inductive and deductive logic and theory development, I need to introduce a small portion of them here. Within theory development, there is the topic of "pattern recognition." In order to develop a theory we must first have a hypothesis. To develop a hypothesis, we must first recognize a perceived pattern about which we will hypothesize. As a selector of pigeons, I can tell you that I am always discovering perceived patterns. This really isn't very difficult if you look at enough pigeons. What is very difficult is proving or disproving these patterns and for the right reasons. More than once, I have had improperly disproved a theory and had to pull it back out of the trash, clean it off and start over.

The following is based on a pattern that I first noticed in race horses and have been studying ever since in racing pigeons. It is still very much a work in progress, and it is but one possible explanation. The potential depth of this subject is what makes it interesting. When I was first starting out in 1971, I selected a very great breeder, 45. She had never won a diploma in three years of flying, but her brother was a superstar that spent several years at the top. It always gave me pause to think that one was such a great winner and the other a great breeder, and they both were in the same generation. I thought about this for years and, during that time, I saw other instances of the same thing.

Using these instances, and a variety of inductive and deductive reasoning methods, by 1985 I was closing in on a theory. However, this theory hit a snag, at the end of the 1986 breeding season, where it lay dormant until a stroke of luck again revived it theory in 1989. To follow this theory, you have to be willing to believe that performance is not the only basis for the breeding loft. Instead, you have to believe that in this story of the "chicken and the egg," the "breeder" comes before "performance." You also have to believe that the breeder is very likely to be a poor performer and, therefore, very difficult to identify.

The stroke of luck occurred in 1989, when I saw an interesting diagram on race horses hanging on the wall of a store in New Orleans. I could have purchased this diagram for \$175. I have kicked myself every day since then! In fact, I haven't ever been able to find another copy of what started me thinking about this topic so many years ago. Instead my wife gets to hear about this lost opportunity in agonizing detail about three times a year, much like she did last night.

This diagram was a fascinating work of art that must have taken many thousands of hours to develop. The research must have been a job all by itself, and there is no way that I am going to do it justice here. In some attempt to illustrate this diagram, I have attached the following: I want to point out that this diagram only included male of the species.



In the center of the bull's-eye is the original male that dates back to the beginning of thoroughbred history. While I can't vouch for the accuracy of this being the original horse, I can say that all of the later horses were in order especially around the Secretariat and Man-o-War lines, so I don't doubt the authenticity of this diagram. Every ring of the bull's-eye represented a generation. As this diagram represented a large number of generations there was also a large number of rings. Fathers were always one ring closer to the center; sons were in the next ring out; their sons were in the next ring further out and so on.

Some fathers were represented in the next generation by 5 to 10 offspring. These offspring were winners or breeders of winners. If they were just winners and didn't breed, their influence on the line obviously didn't continue. However, at almost any time, there were was one or two lines that were experiencing success while hundreds of others were struggling to survive from generation to generation. Obviously, there were many more winners than breeders, which is in itself something to think about.

I noticed two things that were of great interest. First, a cluster of winners could spring up anywhere and at any time. Previous success was not a criterion; however, having at least enough breeding success to continue moving the line forward from generation to generation was obviously very important. It was not uncommon to see a line that had bred only a single successful horse, for several generations, suddenly blossoming into a number of winners (I now call this a breakout generation.) Therefore, in the long run, continuous representation is at least as important as super performance. The longer the line is represented, the greater the chance of a super breeder starting a breakout generation. (In closed line breeding or inbreeding this won't be quite as true.)

Second, when the breakout generation did occur, the pattern on the diagram was usually diamond shaped, starting with a super breeder in the first generation, a good racer/breeder or a number of good racer/breeders in the second generation and building to a superstar within the next several generations. In most cases, the diamond lasted five generations, three on the way up and two on the way down. However, this is greatly affected by the number of successful brothers and sisters represented on the sibling plane in the second and third generation. This is especially true in the generation of the superstar, which seems to be quite often identified in the third generation. In this generation, there lies the golden opportunity to find the beginning of the next diamond (although this didn't hold true in the horse diagram.) There is a pattern emerging that for every superstar performer, there is an anti-performer known as a "breeder."

Obviously pigeons breed much faster than horses. In horses, a great stud is moved from one mare to another and the mare is unlikely to have more than one foal every two to three years. Therefore, it is less common to actually have enough brothers and sisters to form a sibling plane and, thereby, actually have a chance at a second diamond. In pigeons, the sibling planes average six to eight offspring in width. The question of course is how fast we can recognize the superstar, how much of the sibling plane is still intact, and whether the parents are still available by the time we make that recognition.

If the fancier decides to chase the superstar, what he can expect to see is diminishing results. In researching the famous horse Secretariat, one author said something like, "How could he have ever reproduced himself? The bar was just too high." I don't know why superstars can't reproduce themselves, but over time, I have noticed over and over that nature doesn't like to put all of its eggs in one basket. In fact, it is only in the second generation of the diamond where we seem to get a pigeon of equal flying and breeding ability. On the horse diagram, Bold Ruler was an excellent example of a racer/breeder. This is often a very good indication that we are very close to producing a superstar.

While we may have our rules, nature has a set of its own. Its number one rule is survival, and it uses at least three methods for achieving this goal. The first is that the higher the rate of productivity the higher the chances of survival. The second is intelligence. The third is latent genetic code.

Genetic code moves both sideways (parallel) along the sibling plane and forward (series) through the generations. In successful situations, the sibling plane is an excellent opportunity to promote the strengths of that generation. With the exception of when the

line is in diamond mode, forward movement through the generations is more about survival than genetic improvement. I say survival, because based on the diagram, at any given time and across the population, there is way more survival than winning going on.

What nature is always guarding against is the opposite of what we would like to accomplish. When I was about 20 years old, I was visiting a very good fancier, and we were discussing breeding. At one point he asked me, "If you had the greatest pigeon in the world, what would you do with it?" I answered that I would breed it. He said, "To what? Because anything you mated it to wouldn't be as good, so you would always be going downhill." This is exactly why nature doesn't want one line to get that far ahead of the population. Nature seems to understand that going backwards for any reason is a bad idea. Therefore, it wants to be very sure of its footing before going forward. We are the ones that are pushing the issue.

Nature does not want any one group to get so genetically out front that it leaves the others behind. When one group gets dramatically out front, especially if genetic engineering is involved, the chances of a flaw developing and becoming part of the gene pool are dramatically higher. Nonetheless, sometimes this happens for unnatural reasons. Because of an incident involving rabbits, Australia banned the import of pigeons for many years. They have since lifted that ban, and the mixing of two segregated populations of pigeons has begun. This occurrence will always have dramatic effects on the mixed population and stabilization will take several generations. In terms of evolution, while not that much time had elapsed between the implementation of the ban and when it was lifted, there is still a high likelihood that there will already be a significant imbalance in the natural immunity to disease between the two populations. Over a longer period of time, the differences between the populations will continue grow.

Instead nature would like all groups to progress at a similar rate. To nature, the superstar is a sign of success or the ability to adapt. How then does nature understand the concept of racing pigeons, you might ask? It doesn't, but nature does like to continuously test itself against the circumstances presented, artificial or otherwise. We provide the circumstances, the race. Those that are successful will flourish. We of course have something to do with this as we tend to breed more heavily around the most successful lines. The superstar is the pigeon that overcomes the circumstances and scores the highest on the test.

The diamond is an opportunity for nature to have a couple of generations to lock in the benefits of this success. Once it is part of the genetic code, while the diamond kind of visually melts away, it is still part of the genetic code and it will eventually show up again. Think of it as genetic processing time. Nature is saying, "That worked pretty well, so what happens if I mix this with that and put it out there again." This process is going on across the entire population in random increments, each one being constantly evaluated for success or failure, but always attempting to move the species slowly forward.

As I mentioned earlier, by the time the diamond dies out and the line moves back into survival mode, the additional genes obtained during the diamond period tend to go into a

dormant state kind of like a time capsule. Now the code takes on a different meaning altogether. It becomes the ability to move successful genetic code through the generations until it reemerges again. It will show up at different times and in possibly different ways to be tested under different situations. Think of it like a slot machine; the genes are all there, but they just have to come up in the right order at exactly the right time. When present, if the situation still requires this code, then it will again manifest itself. If it is no longer successful, it will either go dormant again to be retested later on, die out or come up so infrequently as to be difficult to key on anyway. As we have seen with white flights and frills, the code can be dormant for generations and suddenly reappear for a retest.

Winning indicates the possible reemergence of the “old” genetic code, but not necessarily the reemergence of the ability to produce it. This is where things get a little complicated. In the first generation of the diamond, it appears that a “breeder” needs to be present. For the most part breeders tend to be very average racers. As performance is not an indicator, finding the breeder is going to take unique knowledge, but it is also going to take time.

As we have already mentioned, when the line is in survival mode it tends to breed on the order of one winner per generation. These pigeons are not what I consider “breeders.” Breeders generally produce a number of good pigeons. Based on this concept, it takes a “breeder” to start the breakout generation. Once in the diamond, the second generation is likely to have a winner/breeder. Obviously, this pigeon is a little easier to spot from a performance standpoint. Unfortunately, though, it is very possible that the winner/breeder is very likely to have brothers and sisters that are also winners, but not breeders. Now they may all need to be tested to find the breeder. Therefore, it is perfectly possible that by the time we discover the winner/breeder, four to five years may have gone by and the original breeder is no longer available.

I should mention that in the generation of the superstar, the sibling plane can be made up of winners/breeders, winners or breeders. This means that in this one generation anything is possible, we just have to discover who is who in time. In the fifteen full diamonds that I have studied thus far, when there was a sibling plane of three or more, I have identified another sibling other than the superstar that was either a breeder or a winner/breeder. However, as already mentioned, it is very hard to identify a superstar in time to find the supporting generations are still fully intact.

In the horse diagram, the two biggest diamonds were built around two of the greatest horses of all time, Man-o-War and Secretariat. Let me take Secretariat as an example. If you follow horse racing at all, you know that he is considered by many as the greatest race horse of all time.

Secretariat’s grandfathers were Narullah and Princequillo. Both were very average racers, but super breeders. Narullah and Miss Disco were paired to produce Bold Ruler. He was a very successful racer and a super breeder! His offspring include Speed Well, Queen Empress, Successor, Old Hour, Bold Lad, Bold Bidder, Bold Nesian, Vitriolic, Wajima, What a Pleasure, and of course Secretariat. This is an example of a strong

sibling plane! Remember that in horses, these are more likely to be half brothers than brothers.

Looking at this we can see that Narullah was a breeder, and his son Bold Ruler was a winner/breeder. One of his sons, Secretariat, was a Superstar, and then the trend is back to average. Yet one of the aforementioned siblings to Secretariat will likely be the key to the next diamond. If not, then we are back to survival mode until the next time a diamond occurs. Man-o-War was a very similar story.

The pigeon Hollywood has one of the greatest flying records of all time. As a breeder, he may be successful or he may be a dud. However, if he is successful, and even when we consider his long breeding career under the Bull system, he is still extremely unlikely to produce another pigeon of his caliber. In terms of U.S. competition, Hollywood's European race record was so great that it would require one of his offspring winning at least ten times in the course of his career to even begin to reach the equivalent of his father's record.

Instead, most superstars will more likely to produce some good pigeons by U.S. standards and these will in turn produce average pigeons. I say in U.S. standards, because under normal European competition, he probably wouldn't fare so well, especially if he were bred under normal breeding conditions without the use of foster pairs.

Finally, I want to point out that should something happen to the superstar, it does not negate the diamond itself. The diamond will still have a much higher level of performance than when the line is in standard survival mode. The superstar is something of a beneficial byproduct of the diamond. However, going along with the "eggs in one basket" concept, it is not as critical to the future as we might think. Going back to my article on racing in the heat, the fancier that I bought my foundation hen from has had more superstars than anyone I know. They have all, without exception, been cocks and he has sold every one of them. One time, I asked him why and he responded, "I have had a lot of them even before you came along, and they just didn't breed. They did their job and now they are done."

What I would like you to take forward from this is that performance is only one aspect of the breeding loft. There are winners and there are breeders and there are winner/breeders. The diamond is the point in a line where winning genes come to the surface to produce significant success, including a superstar, and in approximately a five generation period. The superstar tends to show up at about the third generation. One of the siblings to the superstar is likely to have the ability to start another diamond. Finally, I have decided to bring this up now because it is directly related to several topics including performance breeding.

Until next week!

This article is copyrighted by Bill Richardson. Articles cannot be reproduced without the permission of the author.