



Featured Columnist  
TONY ABBATINE

Paul Nyman is a name only known in the underbelly of his industry. He's an engineer from Connecticut who started disrupting traditional pitching and throwing models over twenty years ago. Mention Paul Nyman and SETPRO, the company he founded in 1995, to most of today's pitching and coaching gurus at the amateur and professional levels and watch their reactions.

Some will admit he's had an influence on their teaching philosophies; others will either be struck with amnesia or their egos won't let them admit their connection to his principles. In the late 1990s, Nyman introduced terms like "scap loading," "pelvic tilt," "intent" and "back chain instruction" to the baseball world.

The number of coaches that have studied under him and changed their perspectives on throwing and pitching is a formidable list—Astros pitching coach Brett Strom, Reds pitching coach Derek Johnson and Twins pitching coach Wes Johnson, Baseball Think Tank founder and inventor of Core Velocity Belt Lantz Wheeler, Missouri pitching coach Fred Corral, Ron Wolforth of the Texas Baseball Ranch and former minor league manager Jerry Weinstein.

I ran into Nyman in Cape Cod in the early 2000's as he made a cameo appearance at a high school baseball camp. His understanding of how the body works, both for hitters and pitchers, remains top shelf, in my opinion.

I had the opportunity to reconnect with Paul recently and asked him a series of questions on a variety of topics. His no-nonsense tone has never wavered in the years since we last met.

**TA: Kyle Boddy has given you credit for influencing his program development. What is your opinion of the Driveline teaching model and data collection protocol?**

PN: Driveline doesn't have what I would call a teaching model. Driveline promotes their science-based training programs. They use their training programs to collect data which then becomes their science. The emphasis is on developing physical capabilities to maximize the intent to throw the baseball. Driveline relies very heavily on promoting their systems' products by showing players maximizing their throwing velocity.

With respect to data collection as being science—beauty is in the eye of the beholder. Data is only as good as the ability to interpret and apply. Thirty years of data collection by the American Sports Medicine Institute (ASMI) has not resulted in any significant programs on how to develop or protect a high-level pitcher. Driveline is essentially pitcher fitness on an industrial basis ("Planet Fitness" for pitchers). Driveline did a peer-reviewed six-week data driven velocity development program. At the end of six weeks there was no increase in a player's velocity.

**TA: Where did all of this new-school pitching stuff originate?**

PN: Baseball has been around for over 160 years. How to throw a baseball 100 mph and consistently hit a target within two inches is still a mystery. Research on how the body actually throws a baseball is relatively new. Throwing biomechanical research started in the late 1960s early 70s. University researchers such as Putnam, Pappas, Felner, and Depenna were some of the first to delve into the biomechanical mysteries of how the body throws a baseball.

Tom House could be given credit for starting this new-school pitching stuff. Thirty years ago House started a company called Bio-kinetics that used 3D motion capture to sell players biomechanical analysis. Shortly after House started Bio-kinetics, the ASMI began collecting, analyzing pitchers and publishing its biomechanics research data.

Two events led to accelerating the new-school stuff. First was the Internet and real-time access to pitching information and ongoing interaction pitching. The Internet also created a new group of pitching "experts" and coaching belief systems.

Second was personal computers and the technology that allowed anyone to perform 3D and frame-by-frame video analysis of high-level players. Prior to those two events, throwing expertise was dictated by former players or professional coaches. Long-held instructional beliefs based on well-versed hand-me-downs (cues) were called into question.

Mass access to information and a public platform (internet) also created new problems for the aspiring coach or player. Readily available research was used (interpreted) to promote training pseudoscience.

**TA: How can the industry improve its development of pitchers?**

PN: From my perspective the industry with the most to gain in improving the development of pitchers is the one that has shown the least desire or ability to invest and improve player development, i.e. Major League Baseball.

In 2003 Michael Lewis wrote *Moneyball*. Today *Moneyball* "analytics" dictate how many MLB teams make decisions with respect to player development. In 2006 I wrote *Beyond Moneyball: Player Development, The Science of Creating the Unfair Advantage, A 21st Century Player Selection & Development Guide for the Aspiring MLB Executive*.

*Beyond Moneyball's* fundamental premise is a simple one; major league organizations do not understand to the degree necessary the most fundamental player attributes that determine hitting and pitching success or failure; how the very best players swing the bat and throw the baseball. And not understanding the most fundamental and important player attributes (what comprises talent) is the root of organizational failure; the inability to consistently field a competitive and successful team in spite of large payrolls. Understanding how players most effectively swing and throw not only requires intimate specific knowledge of the process of swinging and throwing but also the ability to apply this knowledge in such a way that it creates the most effective environment for player development.

**TA: What advice would you give to the coaches that are working with the youth (10-15 year olds) in pitching development?**

PN: "The quickest way to ruin a pitcher is to make him a pitcher". I said this 25 years ago and it refers to what most young "pitchers" are told to do: throw strikes and win baseball games.

Matching player expectation(s) with reality. Ninety-five percent of all those who express interest in becoming a pitcher do not understand the effort or dedication necessary to maximizing their genetic throwing potential. Combine this with the need to produce "results," and coaching or instruction becomes "just throw strikes."

In order to maximize a player's potential there requires huge investments of time, effort and learning on both the part of the instructor and player. For most this is not feasible. Hence, a coaching/instructing path of least resistance (just throw strikes).

The field of research called motor learning and control i.e. how the body acquires and creates movement and skills, provides the best advice I can give. It is the intent that determines what the body will do. If the intent is to throw strikes, the body will organize itself to throw strikes. If the intent is to throw hard, the body will organize itself to throw hard. If the intent is to throw hard and throw strikes, that is what the body will organize itself to do.

**TA: List the four most important movement patterns you would like to see in a pitching delivery?**

PN: The delivery is a single movement pattern consisting of a sequence of movement components often described as the kinetic chain or kinetic sequence.

- 1) Learning how to use the arm to throw the baseball. Throwing a baseball 100 mph is a momentum transfer event. Velocity is developed not through brute strength but through what has been described as the kinetic sequence or kinetic chain. Most players don't understand how to transfer the momentum developed by the body to the baseball, the critical link being from the shoulder to the fingertips.
- 2) Timing of the throwing sequence. The windup creates disconnects between the beginning of the delivery and the final release of the baseball. Momentum can be lost in an instant if any inefficiency in this kinetic chain compromises throwing efficiency. The delivery needs to be a fast explosive action.
- 3) Physical flexibility and sequencing. Physical conditioning includes both flexibility and strength, the strength primarily to move the larger body parts rapidly and strength to be able to withstand the stress that is created when you throw the baseball 100 mph. The more that the body can act as a series of coordinated interconnected links, the more efficient the development of momentum and its transfer.
- 4) Intent could be considered one, two, three, or all of the above. Intent determines how you use your body to throw the baseball. Without the proper mental picture of what you want your body to do, you will not do it.

**TA: The most common mistakes or wrong assumptions pitching coaches are using?**

PN: A distinction needs to be made between pitching coach and throwing instructor. A pitching coach teaches a player how to get the batter out. A throwing instructor teaches the player how to use the body to throw a baseball.

The whole process of "pitching instruction" is backwards. Instruction most often begins by teaching/emphasis on the wind up. How does the player relate the wind up to the release of the baseball? I believe the player does it through the backward shaping or backward chaining concept. You start with the most important body part necessary to throw the baseball: the arm. The body contributes by developing and transferring slow speed momentum to the arm and creates a stable base to throw from. Today much of what is being reported as "new instruction" is for the most part what I would call "make work activity," such as throwing medicine balls, plio balls, weighted baseballs, and any other "pitcher specific" activities. Most often what this does is simply get you physically better at throwing with mediocre mechanics.