

The Future of Exercise (1997 and Beyond)

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The Long, Slow Process of Innovation

None of what I now know about exercise came to me suddenly, like a bolt out of the blue. As Thomas Edison said . . . “Invention is 99% perspiration and 1% inspiration.”

Or, as somebody else said . . . “We learn, when we learn, only from experience, and then only from our mistakes, our apparent successes tend only to reinforce our superstitions.”

When I first became seriously interested in exercise, my first move, and my first mistake, was to seek the advice of the supposed “experts” in the field. But having done so, it soon became obvious that these people actually knew little of value about exercise. From the early 1930s until well into the 1950s, a man named John Grimek had by far the best physique in the world; he never lost, or even placed second, in any physique contest, while competing against all of the most admired bodybuilders in the world. He was the only man who ever won the Mr. America title twice, after which the rules were changed so that a previous winner could not compete in future contests; without which change in the rules he probably would have won the title every year until he was well past the age of fifty.

So, of course, having met him and seen his physique, which was almost unbelievable, I assumed that he really was an expert in the field of exercise. But then, several years later, he published a series of pictures of himself that showed his progress from year to year over a period of seven years, and when I saw those pictures it was instantly obvious that his progress from year to year was nothing short of pitiful.

If my increases in muscular size and strength had ever been produced that slowly, I would have quit training entirely, wrongly convinced that such exercise was worthless.

For many years, my lifestyle was such that I could not train continuously for long periods; during that time I was involved in three wars, operated international airlines and piloted airplanes for thousands of hours, produced more than 300 films for television, imported hundreds-of-thousands of exotic animals and millions of tropical fish. In short, I was traveling all over the world almost continuously, to Africa, South America, Australia, India and a lot of other places; so it was simply impossible for me to exercise continuously.

So it was a case of “on again, off again,” I might get a break that allowed me to exercise for a few weeks, but then have to stop training entirely for a couple of years or longer. The result being that my muscular size and level of strength went up and down; up when I was training, but back down when I was unable to train.

But when I did exercise, I increased my muscular size and strength so rapidly and to such a degree that the people who observed these results were literally stunned, found it difficult to even believe what they saw happening.

But that was their opinion, not mine; I was never satisfied with my results, always believed that I should have done even better, and spent a lot of time trying to find out how I could improve my exercises in order to produce even better results.

When I was exercising, the size and strength of my arms and legs increased very rapidly; I seldom exercised my legs very much, because when I did they became too big, quickly reached a size that made it very difficult for me to find clothes that would fit; if I found pants that were big enough to get my legs into them, then the waist size was so large that the pants appeared to have been made for a circus fatman. Barely big enough in the legs, far too large in the waist.

In the latter part of 1947 I exercised for a few weeks in a gym in Santa Monica, California, a gym owned by Vic Tanny, a man who later became well known all over the country as a result of his television advertising and was generally recognized as the “father of modern health clubs and fitness centers.”

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I left Santa Monica in December of 1947 and did not see or hear from Vic Tanny again for about thirty-five years, until he visited me at my office in Lake Helen, Florida, in the early 1980s. When he arrived, the first thing he said was . . . “I will never forget just how fast you increased your muscular size and strength while training in my gym in Santa Monica; in all of my fifty-odd years of experience, I have never seen anybody else that improved as rapidly as you did. I have been telling people about it for more than thirty years, but none of them even believed me.”

In the early 1960s I spent a couple of weeks in Fort Worth, Texas, for the purpose of attending a training course for professional airline captains, and, at that time, was in peak condition after a few months of steady exercise. During that period, I trained a few times in a local gym, and the owner of that gym, having seen my physique, told me . . . “I would rather have an 18-inch arm than a million dollars.”

To which statement I replied . . . “Well, I can’t tell you how to get a million dollars, but I can show you how to build an 18-inch arm; if, that is, you are willing to pay the price that will be required.”

“Which is?”

So I told him . . . “The willingness to train as hard as I do. Just follow me through a couple of workouts, using as much weight as you can for the required number of repetitions, and then continue to train in that fashion after I am gone. It won’t be easy, in fact will be almost brutally hard, but if you train in that way for a few months then you will get an 18-inch arm.”

But, after following me through only one workout, he then told me . . . “You were right, I am not willing to pay that price, I could never bring myself to train that hard on a regular basis.”

Many other people who tried to follow me through a workout literally became sick and vomited, after which they could not continue.

In 1974 the Military Academy, West Point, purchased a complete set of Nautilus machines and then sent their strength coach, Dan Riley, to Lake Helen, Florida, so that he could learn how to use the machines properly. When he arrived I had been exercising only a few weeks following a long total layoff from training of any kind, while Dan had been training steadily for several years, with barbells. And I was old enough to be his father.

I took him into our gym and told him . . . “Just follow me through a workout, doing exactly what I do, or coming as close as you can. Watch my style of performance and then do the exercise in the same way that I did.”

I then went to the first machine and exercised to a point of failure, to a point where it was momentarily impossible to perform another repetition, and having finished that exercise I immediately moved to the second machine and started a different exercise, with almost no slightest pause between the two exercises, proceeding from one machine to the next as fast as possible.

When I got out of the first machine, Dan got into it and started his first exercise. But halfway through my fourth exercise, I glanced over and saw Dan stretched out on the floor in his own vomit; he collapsed about midway into the third exercise. When he first came to Florida, Dan believed that he understood what hard exercise consisted of, but it took only a few minutes for him to realize that he had never experienced truly hard exercise before.

About a year later, in the spring of 1975, we conducted a research program at the Military Academy, using men from their football team as subjects, men who had been training in a manner that they considered to be hard for several years, men who were already far larger and stronger than average men of their age when we started.

Once again I had been out of training for nearly a year, had done no exercise of any kind during that period, while Dan Riley had continued to train on a regular basis. Near the end of that research project I made a bet with Dan, bet him that within four weeks my arms would be bigger than his were at that time.

When we started we measured his arms and mine, and his arms were a full inch and a half larger than mine, a very significant difference in arm size. But four weeks later, when we measured our arms again, my arms were then larger than his were; I had added nearly two full inches to my arm size, while Dan’s arms were actually smaller than they were

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at the start. He had lost size in his arms as a result of overtraining, performing far too much exercise because of his mistaken belief that more exercise would produce better results.

When you are exercising properly, very little exercise is required to produce the best-possible degree of results, and many people cannot tolerate a lot of hard exercise, will lose size and strength if they perform too much hard exercise.

You can exercise hard, or you can exercise a lot, but you cannot do both, and if you try to do both you are overtraining and will lose size and strength rather than becoming larger and stronger.

At that time I was still telling people that they should perform only three hard workouts each week, training hard but very briefly, that if their full-body workout required more than thirty minutes then they were overtraining, doing too much exercise. Now, more than twenty years later, I clearly understand that most people will produce even better results from only two weekly workouts, and that some people do better if they perform only one workout each week.

One subject that we encountered would lose size and strength if he trained once a week, would neither gain nor lose if he trained only once every two weeks, but would increase his size and strength rapidly if he trained only once every three weeks. Such a subject has a very low tolerance for exercise and it takes him a long time to fully recover from a hard workout. So if your results are not as good as you expected, the first thing you should try is to reduce the amount of exercise you are performing.

In the case of exercise, more is seldom better, and is usually worse. Remember: exercise does not “produce” increases in muscular size and strength; instead, it stimulates such increases. But even with the stimulation from proper exercise, you still need a relatively long rest period between workouts. Before they can grow, your muscles must first fully recover from your most recent workout.

My opinions? No, solid facts that can be rather easily demonstrated; but it took me twenty years of overtraining to learn that two sets of each exercise will produce much better results than four sets. And nearly another twenty years to learn that one set is better than two, provided only that the exercises are performed properly.

Based upon my own experience and my observations of the efforts of other people over a period of more than seventy years, I now believe that very few things turn out the way you expected them to; your results may be better than you expected, or worse, usually worse, but they will almost never prove to be exactly what you expected. Having performed more than 10,000 experiments during the course of a developmental project, with no slightest sign of success, Thomas Edison told a newspaper reporter . . . “We have not failed; instead, we have discovered 10,000 things that do not work.”

My attitude throughout life has been very similar to Edison’s: if one thing fails, then try something else; and if what you are trying to do is even possible, then eventually you will probably discover something that does work. Initially, you probably will not understand why it works, a clear understanding of the cause and effect relationships usually comes only after the fact. We are aware of many things that nobody really understands; the existence, and the results produced by gravity are accepted by almost everybody, but nobody that I am aware of ever even claimed to be able to explain gravity.

I am clearly aware of many physiological changes that are at least stimulated, if not produced, by exercise, but I cannot always explain just why these results occur; and at this point in history, neither can anybody else. In some cases, I do understand why a particular result is produced, but not in all cases.

If I have learned anything of value about exercise from somebody else, then I am not aware of it; the things I have learned always came from my own experiences and observations. But, as I stated above, this knowledge did not come quickly or easily; every success that I have experienced was almost always produced only after many failures. I have been a pilot for nearly sixty years, have flown just about anything capable of getting off the ground for a total flying time in excess of 30,000 hours, and at times have served as a flight instructor.

One thing I learned from my experiences as a flight instructor is that the instructor pilot actually teaches the student pilot very little; instead, the instructor primarily serves the purpose of keeping the student alive long enough for them to learn by simple trial and error, protecting the student from disaster while he is hopefully learning from his mistakes.

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In a very real sense, the instructor serves the same purpose as a safety net underneath somebody while they are attempting to learn how to walk a high wire.

Take note, if you will, of a fairly long list of mistakes and disasters that have resulted from the efforts of the people in charge of the NASA space program, things that occurred in spite of a multi-billion dollar investment and literally thousands of man-years of effort expended by thousands of supposed “experts.”

You can become aware of, but will seldom really understand, many things by reading. The fact that something was published does not mean that it is true; you are not being taught by reading, you are merely being exposed to somebody’s opinions, and in the field of exercise by far the majority of such published opinions are wrong. And many of them are outright lies.

One of the most famous, and still widely accepted, research studies that was published, co-authored by Tom Pipes and Dr. Jack Wilmore, was in fact never performed, and would not have produced the claimed results if it had been conducted.

Years later, when this supposed study was proven to be nothing more than outright fraud, then Dr. Wilmore suddenly remembered that he was out of the state during the research. Which is interesting, since it raises the question of just why he was listed as co-author if he was in no way involved with that study, as he now claims.

Later, Tom Pipes changed the name on somebody else’s degree, photocopied it with his name on it, and then started practicing medicine with absolutely nothing in the way of any formal training in that field. Why he did not go to jail when this was discovered is more than I can understand.

Gideon Ariel, another outright liar, perjured himself during his testimony in at least three trials; during one of these trials he testified that he had a doctorate degree in computer science, then during a later trial he testified that he had never claimed to have such a degree. I have copies of all of the testimony in both of these two trials, as well as a copy of testimony in another trial in which he was called as a witness and again committed perjury. Perjury is a crime, a major felony, yet Gideon has never been prosecuted for these crimes. Why not? Primarily, I believe, because the majority of prosecutors have no slightest interest in either the truth or justice; instead, prosecute only cases that provide them with publicity that will help their political careers.

In my opinion, the only thing that was true in Mao’s so-called “little red book” distributed to Chinese Communists, was the statement that “justice comes out of a gun barrel.” You certainly will find nothing even close to justice in the courts as they now function in this country.

Having been involved with lawyers and the courts several times, I now agree with Shakespeare’s statement on the subject: “The first thing we must do is kill all of the lawyers.”

Yet in spite of the above facts, and they are facts, the Pipes/Wilmore study is still very widely believed, and is being taught as fact in most, if perhaps not quite all, of the physical therapy schools in this country. The unavoidable result being that almost all physical therapists now believe, and continue to practice, things that are not only stupid but are downright dangerous.

In 1972 I published an article in a national publication in which I clearly pointed out several of the problems with so-called Cybex machines; not all of their problems, just some of them, because I was then not yet aware of all of their problems. I then stated that I intended to design a testing machine for measuring knee functions that would be capable of doing what the Cybex people claimed to be doing with their equipment; claims that were false then and still remain false even with the latest models of their equipment.

In that article I also stated that I could build such a machine in about six months with an expense of about \$200,000.00; neither of which last two claims I believed. I believed, instead, that such a machine could be designed and built within a period of about three weeks, with a total cost of less than \$10,000.00. Which, as things turned out, proved to be very wishful thinking on my part. In practice, it took us nineteen years and three months of continuous research and development, at a cost of more than \$75,000,000.00, to solve all of the related problems that we encountered after the project was started. Such a machine now exists, but it did not come quickly or cheaply, and now we can accurately test knee functions.

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Which means, also, that we can evaluate the actual results of any exercise program; can tell you what, if anything, is improving and to what degree it is improving. Without which knowledge you are merely guessing, and will usually guess wrong.

If you understand everything that is stated in this book, then you will know everything that is actually known about exercise; but I do not intend to confuse the issues by even mentioning many of a long list of current theories that are very close to outright insanity.