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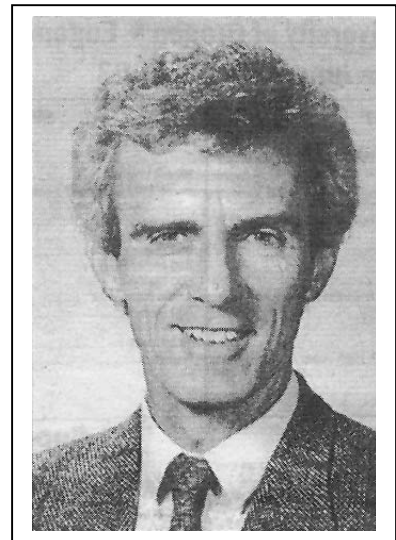
Third Wind
by Mike Tymn

How Fast Do We Slow Down?

Do we slow down at a constant rate, or, at an accelerated rate? To put the question a different way, do we lose the same amount of time each as we age, or do we lose more and more time as we get older? Based on his study of marathon records, Professor Ray Fair of Yale University concludes that the slowdown is constant for a number of years but then it accelerates. In the marathon, the "transition age" is 59.6 years. That is, from ages 35 to 59.6, the slowdown rate is constant -0.62 percent per year. After that it increases by 0.12 each year. In other words, the downhill slope gets steeper after 59.6 years.

Fair discusses the effects of aging on running performance in his book, *Predicting Presidential Elections and Other Things*, published last year by Stanford Business Books. Beside marathon times and presidential elections, Fair discusses extramarital affairs, wine quality, college grades, interest rates, and inflation.

What do all those things have in common? "They can all, be explained and analyzed using the tools of the social sciences and statistics," Fair explains in the book's introduction.



Plotting Times

Using marathon age records (as they were a few years ago), beginning with Paul Pilkington's 2:12:13 at age 35 going on up through Norm Green's 2:25:51 at 52, Clive Davies' 2:42:48 at 66, and ending with Ed Benham's 4:17:51 at 84, Fair plots the times on a graph and demonstrates how the slope is constant up to age 59.6, before it begins to slope more upward (or downward, depending on how you view it).

While there are records beyond age 84, Fair did not use them as he felt there have not been enough runners in those age categories to make them statistically reliable. In fact, it may very well be that the accelerated rate after 59.6 is a result of fewer people in the upper age groups.

"Since hundreds of thousands of people age 35 have run a marathon, the world record for that age is probably close to the best time that could ever be run — the biological minimum," Fair points out. "On the other hand, far fewer people age 84 have run a marathon, so the current world record for that age may not be that close to the best that could ever be done. Think about it this way. If, in the next 20 years, hundreds of thousands of people age 84 run a marathon, the (record) time of 4:17:51 might be lowered considerably."

Some may ask why Fair didn't find a few dozen marathoners who have been running for 25 or more years and chart their slowdown rate. It's because there is no way to factor in the motivational aspect and other variables. It would be difficult to find people who approach the same race each year with the same, intensity, and, of course, weather conditions could vary from year to year and further distort the data.

Initial Improvement

Another problem with individual results is the effect of adaptation and experience. Most runners, even those taking up the sport in their middle or later years, improve for the initial 5–10 years, because they are molding the body to the demands of the sport, while learning how to train harder and harder. In those early years, the improvements from adaptation and experience more than offset the losses to aging. This aspect leads many older runners to falsely assume that they are defying the aging process.

Nevertheless, it seems clear that running and other exercise does retard the aging process. "I am struck by how small the deterioration rates are," Fair comments.

"The age factor for age 75, for example, is 1.499 (using age 35 as 1.00), only 32 percent larger than the age factor of 1.133 for age 55. The deterioration rate is thus only 32 percent over these 20 years. Even someone age 85 is only about twice, as slow as he was at 35. Given these numbers, societies may have been too pessimistic about losses from aging for individuals who stay healthy and fit. Societies may have passed laws dealing with older people under incorrect assumptions."

Middle Distances

Fair also determined the transition age for the "middle distances" — 400 through 10,000 meters. It is 59.5 years, almost exactly the same, as for the marathon. However, the slowdown rate before the transition age in the shorter distances was 0.81 percent, significantly higher than the 0.62 for the marathon. But, on the other hand, the increase in the slowdown rate after the transition age was smaller than in the marathon.

In other words, the slowdown rate in the middle distances is larger in the early decline, but not as fast as in the marathon in the later years. "The larger slowdown rates for the early ages may mean that speed deteriorates faster than endurance," Fair offers.

Predicting slowdown rates in running is not too much unlike predicting wine prices by vintage. But you'll have to read Fair's book to get a handle on that. It is available on the Internet through Amazon.com and Barnes&Noble.com.

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