

The Science of Racing (Using your Noggin)

I have over the past few months spouted the various advantages of using a power meter. Using power and analysing the data from races and training will lead to improvements in performance no doubt about it. The data that we get from the races themselves can often be the most useful to us to really get an idea of what is needed and when, or what went wrong and when. More often than not it is not always the strongest and fittest rider that win the race, tactics and pacing are major contributors to success and this is why you often see older riders taking the wins.

Andrew Coggan writes in his book Training and Racing with power:-

A power meter can also help you determine when you are using too much energy in a race. Could it be that you are pedalling too much? From thousands of power meter race files that have been analysed, it has been shown that the winners are the riders that do not pedal as much as the rest of the peloton. How can this be? Well the best racers usually sit in the pack, watch, wait and hide from the wind, conserving energy. These aren't the guys who are out the front of the pack driving the pace for hours on end. The winners are the ones who pedal less than the rest, but when they do pedal, watch out, because they pedal harder than the rest of the pack.

I will repeat that sentence because it is so important to successful racing.

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Again to get the real data and the amount of time spent not pedalling a power meter is needed.

In the book "The Science of Riding Faster" by Edmund R Burke PhD, Jeffrey P Broker gives the following example to outline just how much pedalling a pro/elite rider completes in a stage of the 1991 Tour DuPont.

Cycle Power Watts	Percent of Ride	Cycle Velocity (mph)	Percent of Ride
0 – 120	51%	0 – 7.5	3%
120 – 240	17%	7.5 – 15.0	15%
240 – 360	23%	15 – 22.5	19%
360 – 480	4%	22.5 – 30	30%
480 - 600	1%	30 – 42.5	21%

Recorded for one rider in a 3 – hour, 37 minute stage race (1991 Tour Dupont)

This chart clearly shows that a massive percentage of time is spent at low power outputs 51% from 0 – 12watts. Ok so this is all very well but how do we do it?

All riders new to road racing go through the period of smashing it off the front and doing all the chasing only to be dropped when the race really starts. This can often lead to frustration and loss of motivation. I have found in Australia especially, that without the standardised points system adopted in England for instance where a rider starts as a 4th cat and by virtue of points gained in races moves up to a 1st cat and elite rider if they are good enough, that often talented riders jump straight in at the deep end. They often end up riding against seasoned riders that hang them out to dry, and but for the most genetically gifted most get smashed. This can often lead to subsequent poor moral and lack of motivation. I am a firm believer that success breeds success and that winning can become a habit. This habit can be started in the lesser categories and subsequently continued in the higher categories. I believe ego and peer pressure often moves riders up the ladder before the trade has been learnt. Also it is important for newer racers to stand up for themselves in the peloton; you don't have to go through just because the local gun shouts at you to! That being said if you can do it do it, but don't do more than you have to, you can be sure that they won't.

For some this will be telling them how to suck eggs for others give it a go, try to sit in instead of doing all the work, try sitting on the wheel of the local gun rider and see how he races? Don't sit on him the whole race and come off his wheel for the win straight off or you will make no friends but just observe and learn. You day and time will come just be patient.