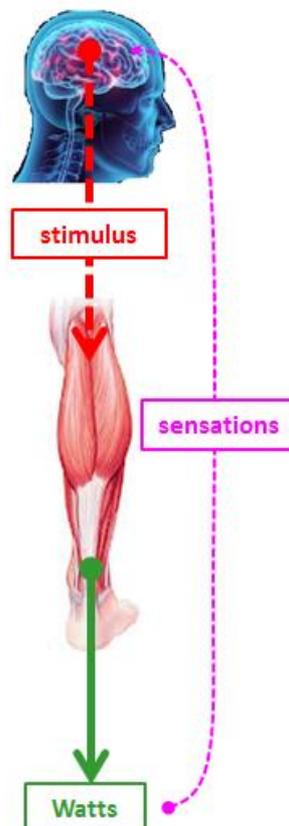


The power meter is only a receiver of the actions decided by the cyclist

When the cyclist pedals he produces a power output (PO) that depends on the intensity at which it moves. The higher the intensity, the more important PO is. In other words, PO is the parameter directly related to the effort produced by the cyclist that results in the base of a **central voluntary stimulation** (brain to muscles) that he chooses to achieve according to different criteria:

- ✓ environmental conditions,
- ✓ race conditions,
- ✓ the level of his physical potential,
- ✓ his motivational level,
- ✓ his state of form,
- ✓ his level of fatigue.

As soon as the cyclist produces a certain level of PO, it automatically results in a feedback of **sensory information** in his brain that informs him about the nature of the effort he is making. This is more commonly known as "*feelings*". Thus, for a given PO, the brain processes all the information that emanates from the muscles at work, the blood glucose level, the fatigue of the different functional systems ... **to classify the feelings** at a time t according to a personal value scale that belongs only to the athlete. Thus, each athlete has **his own scale of feelings** that allows him to calibrate during the effort depending on the level of PO he produces.



However, the relationship between the PO and the feelings generated is quite complex because depending on the evolution of the different criteria defined above, the same level of PO can determine different feelings depending on whether the cyclist is on the flat road, in a climb, tired, less motivated ... Thus, with the same Watts displayed on the screen, the feelings may be different, that will automatically determine different behaviors of the cyclist. It is therefore not the PO produced that will determine the actions of the riders but essentially the sensations he feels, the latter being the main parameter that he takes into consideration when deciding what to do with his effort. In other words, displaying PO on a screen is only a number that the cyclist must interpret **to give it meaning** and integrate it into his performance model.

But where the situation becomes more complex, it is that not all cyclists have the same **capacity for processing information** and **interpreting the PO data** they produce. The accuracy of the Watts' analysis and interpretation differs greatly from one to the other, which leads to more or less important errors of judgment that automatically play on the actions in the race. In other words, it is not because the rider has the opportunity to read the PO that is displayed on his screen that he will automatically make a good decision. On the other hand, what is remarkable is that the riders who know how to interpret their feelings are able to feel very fine variations of PO of the order of 10 W. This testifies well of relative importance of the power meter in the decision-making of a cyclist. Indeed, the achievement of a maximum performance is always done with a **very fine analysis of the feelings** during the effort without taking care of the PO produced. PO resulting from a voluntary effort of the cyclist, it is only the answer of what he decided to realize according to the various criteria which were defined.

In total, the power meter does not decide the effort produced by the cyclist but is only the response of the voluntary action decided by him in a certain environmental configuration. Claiming to the power meter its ability and omnipotence to falsify the race would give it a power it does not have since it is only a reflection of the action produced by the cyclist.

The power meter is only a receiver of the actions decided by the cyclist who writes in Watts the electrical stimuli sent by the brain to the muscles according to the feelings.

Fred Grappe - PhD
Head of Performance - Team Groupama-FDJ
www.fredericgrappe.com
Twitter > @fredgrappe