


Can we adjust the bike position to have a positive effect on the uphill cycling performance?

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Background

- Physical therapist (2004)
- Bikefitting since 2012
 - o Wolf Performance
 - o Bikefitting for recreational and professional athletes
 - o Road cyclists
 - o Track cycling
 - o MTB
 - o Triathlon



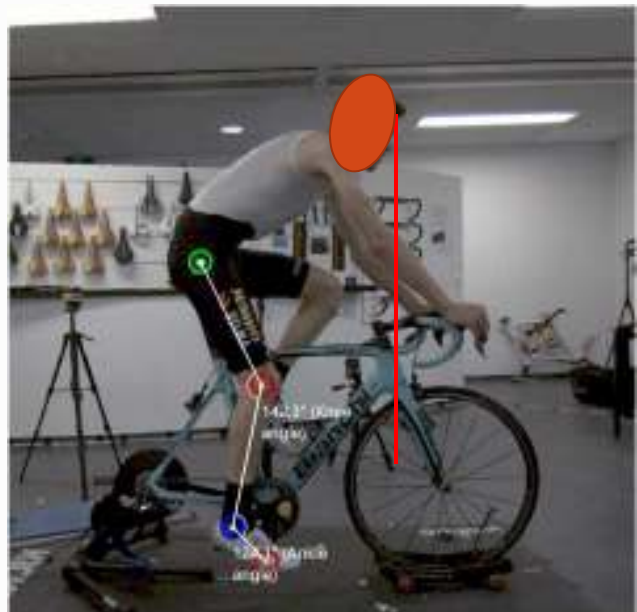
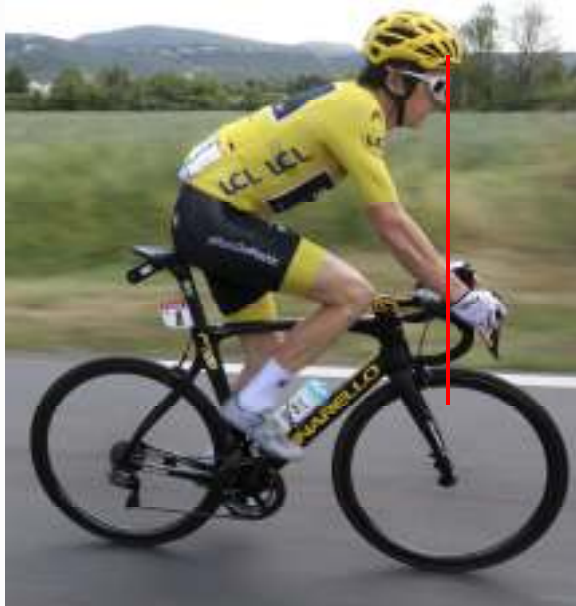
Tour 2018



Position Geraint Thomas



Position Geraint Thomas



Visual analysis

Anterior position of the body on the bike

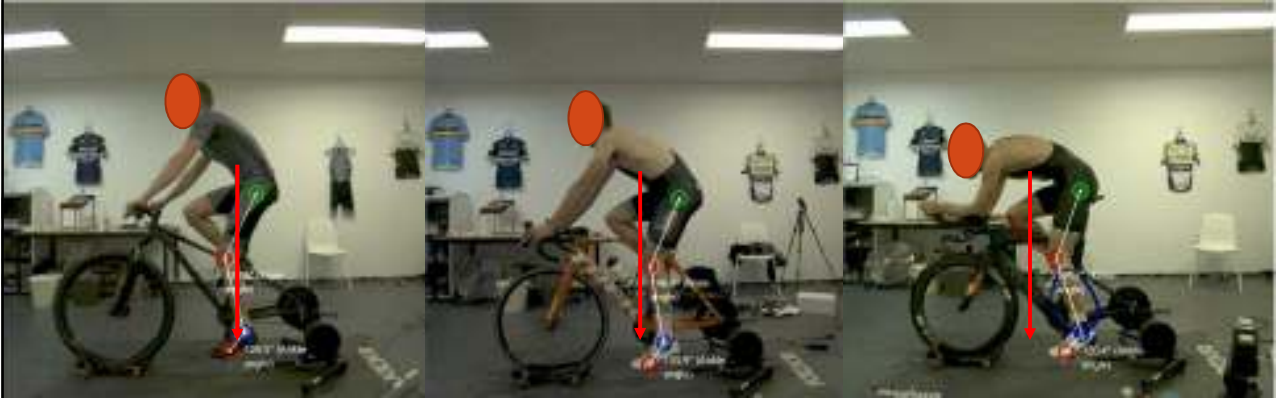
- Limited support on the saddle. Only anterior support.
- Small shoulder angle
- ...

Could this anterior body position have a positive effect on the uphill cycling performance?

Center of Gravity



Position COG to the bike





Climbing



Necessary counteraction of the arms: pulling at the handle bar



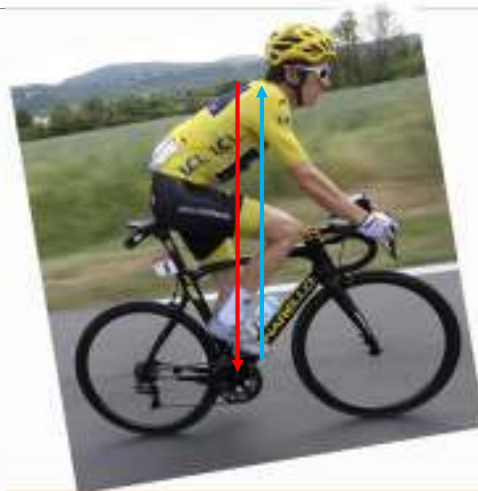
Pressure on the arms

Climbing – COG over bottom bracket



Necessary extra
upper body
activity

Climbing – COG in front of bottom bracket



No extra upper
body activity
necessary

Limited science

Fonda et al., Journal of electromyography and kinesiology, 2011

- Study muscle activity patterns
- 3 conditions
 - Level
 - 20% slope
 - 20% slope with adjusted saddle position (saddle forward and saddle 20% anterior tilt = 11,3° angle)
- Conclusion:
 - Significant difference in timing and intensity of especially muscles that cross the hip joint (RF, BF, GM) during the 20% slope.
 - These differences were counteracted with the adjusted saddle position
 - The use of the adjusted saddle position during the 20% slope was perceived positively by all cyclists regarding both comfort and performance.



Take home messages

- Further research is necessary (power output, efficiency, ...)
- There are indications that an anterior position (forward saddle position, anterior saddle tilt) can have a positive effect on the uphill cycling performance. (marginal gains)
- Different bike position for specific climbing stages?

Thanks to the work of Keith Bontrager.



