

**Experiential and mechanical data crossed analysis for a better understanding of sports performance.
Case study on expert interpersonal coordination in rowing**

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Introduction

In sports, activity-centered approaches have mainly described qualitatively the cognitive phenomenology of the athletes. However, some recent studies have combined athletes' feelings about the performance from an inside point of view and measures collected by the researcher (i.e., from the 'outside'). They aimed to characterize the activity constraints and/or effects which are not always perceived by the athletes, but are likely to favor a better comprehension of their activity (e.g., Sève et al., 2013).

Objectives

The aim of this study was to characterize interpersonal coordination of rowers based on a mixed analysis of rowers' course of action (Theureau, 2006) and of mechanical parameters. Extending Sève's et al. work (2013), it was more specifically focused on a whole race of high level rowers.

Method

A French elite men's coxless pair crew was filmed during a pre-competitive test against the clock. On this basis, self-confrontation interviews were performed with both rowers. Mechanical data (i.e., oar angle and oarlock force) were collected thanks to the *Powerline* system (Peach-Innovations®). The global analysis combined collective coupling of the rowers' courses of action and the mechanical parameters analysis (e.g., variability of the relative phase between oars' angles in the horizontal plane).

Results

The race was divided into four successive periods based on (a) mutual rowers' adjustments patterns, and (b) the kind of interferences between their courses of action. The analysis (in progress) of the mechanical data for these periods should allow an identification of the index that will account for the relation between subjective and objective dimensions of the performance.

Conclusion

Beyond scientific interests, results will provide a better understanding of the performance of rowing crews, and thus open some interesting perspectives for training.

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References

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