



ANALYSIS OF NAVIGATION EXPERIENCE IN ORIENTEERING : WHAT IS MEANINGFUL FOR NOVICE ORIENTEERS ?

Mottet, M. & Saury, J.

martin.mottet@univ-nantes.fr

MIP (Nantes, France)



INTRODUCTION

Orienteering : the sport of navigation with map and compass in which the orienteer must quickly find control flags.

Most **previous studies** have focused on the characteristics of the expert orienteer's activity. Importance of the cognitive processes (map-terrain comparison) to navigate in a quick and efficient way was underlined (e.g. [Macquet et al., 2012](#)).

Aim of this study : understand the experiences of novices in orienteering from the analysis of the meanings they were building through their navigation.

“**course of action**” **framework** in line with the empirical phenomenological psychology perspective ([Theureau, 2006](#)).

METHODS

Participants : 8 male novices in orienteering (*M age* = 19.72). Students in Sport Science.

Procedure : orienteering teaching cycle composed of 12 lessons of 1 h 30 each. Performing various orienteering tasks in different places.

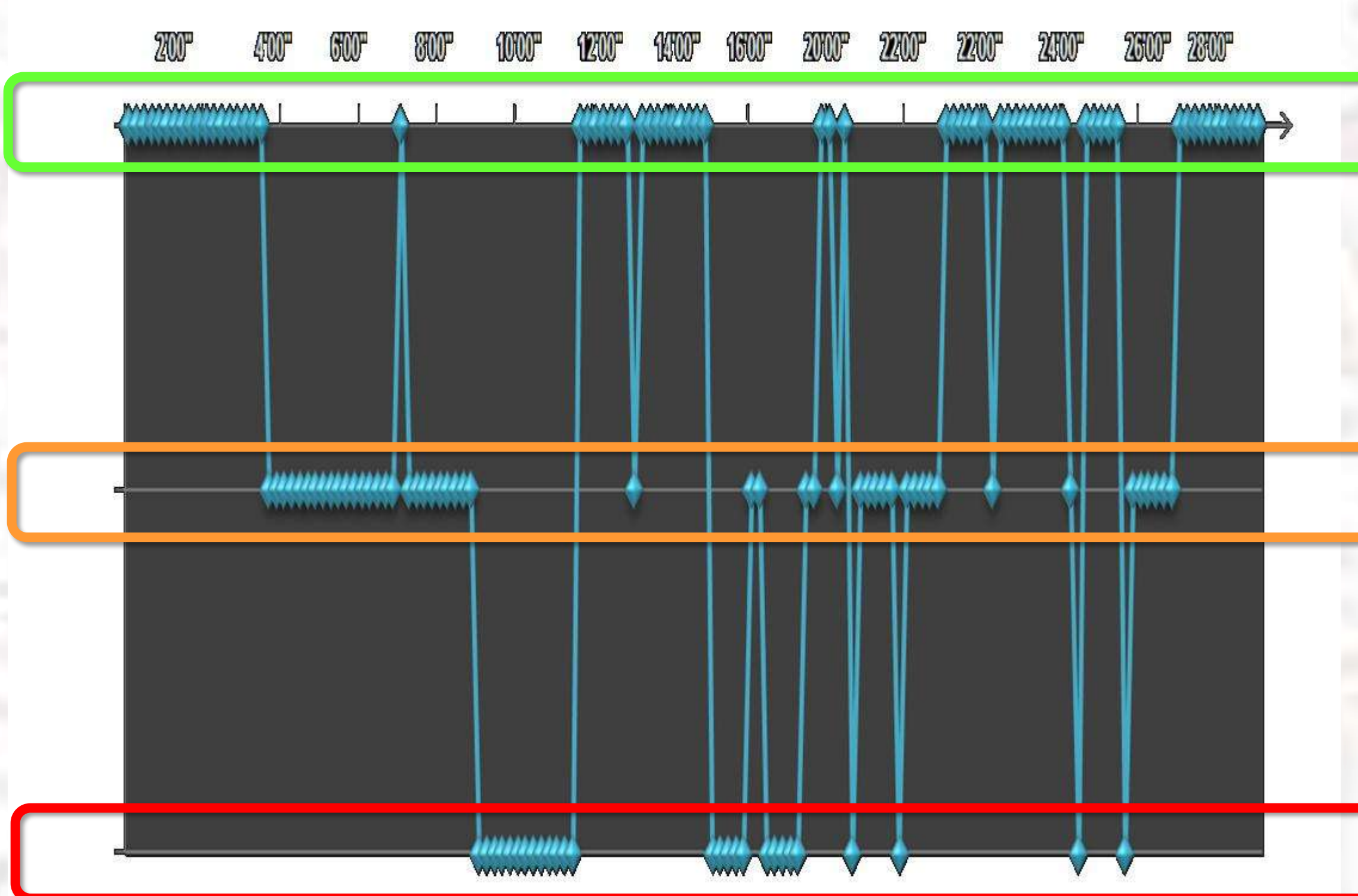
Data collection :

- (a) audiovisual recordings made with glasses camera worn by orienteers (31 h 09 min)
- (b) verbalizations during self-confrontation interviews where the participant and the researcher viewed the recording together, and the participant was asked to describe and comment upon his activity step by step (45 h 48 min)

Data processing (comprehensive analysis): reconstructing the participants' course of experience and documentation of meaningful elements at each moment in the situation.

RESULTS

The orienteers were continuously **passing a judgement on the validity of the route** they were following and the accuracy of their positioning on a given course. A fluctuating judgement but 3 typical experiences can be found:



The orienteer thinks he is on the right route. He thought he was able to find his location on the map precisely and/or to regulate his navigation up to a precise point. This judgment was built within the orienteers'subjective experience but could objectively be accurate or inaccurate.

The orienteer assumed he was approximately on the right route according to the given course, while expressing doubts concerning the reliability of his judgment.

The orienteer considered himself unable to find his location or to visualize his moving on the map compared to the given course. In those moments of typical experience, the volunteer felt totally "lost" but kept feeling committed to the task.

MEANINGFUL ELEMENTS

• Terrain and map features

Terrain features are in keeping with the expectations realised from the map.

Confidence on the validity of the present map-terrain relation

• Being close or far from other orienteers

• « Aggressions » of the forest

• Passing time

• Feeling of moving forward too fast

• Emotionally charged features :

- control flag

- man-made features

• Likely area to set a control flag

• Compass

The terrains and map features are no longer significant or are no longer the result of expectations.

Strong doubt about the present map-terrain relation – feeling of being lost

The orienteer's interpretations shape some reactions to numerous significant elements in the situation.

DISCUSSION

• The experience of novices in orienteering does **not only** consist in some cognitive operations aiming to solve a **well-defined problem** of navigation thanks to map-terrain comparison.

• When they went through typical experiences where they thought they were approximately on the right route or unable to find their location from the given course (a majority of cases considering their levels), the orienteers seem to be **faced with an ill-structured problem** of navigation ([Simon, 1973](#)). In these cases the orienteers act in different specific worlds (or *umwelt*) in which other elements are more meaningful for orienteers than map and terrain features ([Petitot et al. 1999](#)).

• These elements were seen as other resources making it possible to *enact* solutions to solve in a "satisficing" way this *real-world problem* ([de La Rocha, 1985](#)).

• **Orienteering experience can not be reduced to an algorithmic problem of wayfinding** thanks to a map-terrain comparison (as you can imagine from the activity of expert orienteer) but **shows the physical, material, social and cultural dimensions of the navigation**.

• This empiric study **specifies the presupposes of enaction** paradigm ([Varela et al. 1991](#)) and highlights the conception of tasks in orienteering teaching and training.

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