

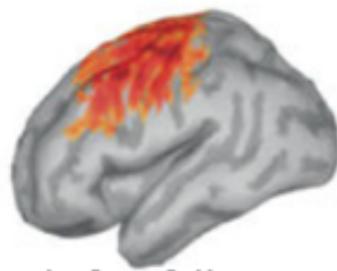
MSHS

AXE 1 SCIENCES COGNITIVES ET COMPUTATION

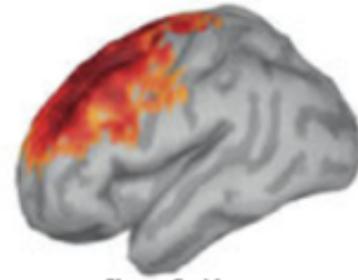
7 Décembre 2017

12h-13h

Hemodynamic response for physical effort production



before fatigue



after fatigue

Neurocognitive functions involved in the regulation of effort during endurance exercise: A dual-model perspective Conférence

L'Axe 1 (Sciences Cognitives et Computation) de la MSHS présente une conférence de **Rémi Radel** (Laboratoire Motricité Humaine, Éducation, Sport, Santé LAMHES EA 6312 -UCA).

Abstract. The regulation of effort during prolonged physical tasks not only has great importance in the performance of professional athletes, but also in everyday activities of all individuals. The problem can be assimilated to a trade-off between the costs and benefits of effort exertion, in which peripheral signals of fatigue, pain and energy consumption have to be compared to the values, the motives, and the utility of the task. The objective of this communication is to provide a theoretical proposition of how these different types of

information are integrated in the brain to regulate physical effort. In other words, a model will be proposed to identify the cognitive functions and brain regions/networks involved in this regulatory process. Specifically, a dual model is proposed in which effort would be constantly regulated in an automatic fashion at a subcortical level but could also be sporadically regulated in a top-down manner by a controlled route when the automatic response is considered as inappropriate. Such conflicts may arise because it is presumed that each regulatory route considers different types of information, with rather unconscious information for the automatic route (e.g., peripheral afferent feedback, unconscious reward) and conscious information for the

controlled route (e.g., subjective feelings, task expectations, conscious rewards). The detection of conflict by a supervisory system would require cognitive resources by relying on effortful fronto-executive functions such as sustained attention and inhibition. This framework therefore implies that while some conditions are favorable to a bottom-up regulation of effort, others are rather favorable to a top-down regulation of effort depending on the availability of fronto-executive resources. In consequence, the different types of information may not always have the same impact on physical effort. This talk reviews the evidence for this model and also present preliminary data testing this model.

MSHS, Nice - Salle 031 ou 418, précisé le jour J - Inscription obligatoire auprès de Sylvie.GRENARD@unice.fr *

En raison du plan Vigipirate attentat et des normes en vigueur dans notre établissement l'inscription à cet événement est obligatoire. Toute personne non identifiée sur un listing d'inscription se verra refuser l'accès à la conférence ; vous devrez être en mesure de justifier votre identité. Pour vous inscrire merci d'envoyer vos nom, prénom, adresse e-mail et structure/organisme à Sylvie Grenard (sylvie.grenard@unice.fr) avant la veille.