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## **Presenting the Research Project "True Times - Morningness-eveningness and time-of-day effects on cognitive performances and emotional states: new lessons from children and adolescents"**

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It is our aim to present and discuss an ongoing research project focused on the interaction effects of morningness-eveningness x time of day on cognitive and emotional variables. Literature search shows that a rising number of studies have tested the "synchrony effect" that refers to better performances when people are tested at their peak times of the day (e.g., early hours for morning-types, versus afternoon for the evening-types) and hindered performances at off-peak times. Surprisingly, a reverse counterpart, or asynchrony effect, has also been documented. The explanation for conflicting findings seems to reside in the type of cognitive resources recruited by different tasks. For example, sync effects seem to be present in tasks involving verbal fluency, which require explicit memory and controlled processes. On the contrary, tasks mainly based on implicit processing and automatic processes, which benefit from an attenuation of the inhibition processes, may result in better performances in non-optimal hours. However, this hypothesis remains to be duly operationalized and tested. Moreover, the topic is virtually unexplored in children. Hence, it seems appropriate to fill this gap and consider three different age-groups for a fine probing of the controlled/automatic processes dichotomy, as executive control is known to develop across childhood, and schooling induces changes in the level of automatization of tasks recruiting scholastic skills. We also aim to explore whether (a)synchrony effects are extendable to emotional states which may interact with cognitive processes. We propose to systematically probe the relation between core cognitive processes and time-of-day x diurnal type crossings, by using a comprehensive set of neurocognitive tests and emotional states measures. We will adopt a randomized and blind design, to test diurnal types in different times of the day inspired in the chronotype-based paradigm and chronopsychology research. Note: Research Grant PTDC/PSI-ESP/32581/2017|CENTRO-01-0145-FEDER-032581, funded by FEDER, PT2020, CENTRO2020, FCT.