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Towards measuring states of curiosity through Electroencephalography and body sensors

Aurelien Appriou - Jessy Ceha, Edith Law, Pierre-Yves Oudeyer, Fabien Lotte
- Inria, Univ. Bordeaux, LaBRI, France; University of Waterloo, Canada

Context

- **Psychology, Neurosciences**
 - ▷ *Curiosity* is one of the key mental states involved in users' learning tasks : more a user is curious, better he learns [1]
 - ▷ *Curiosity* is a mental state that comes up when users are *intrinsically motivated* to learn.
- **Human-Computer Interactions**
Adapting tasks to users' *curiosity* could increase their involvement and might allow them to enter a *flow* state.

Goal

- Being able to estimate *curiosity* with objective measures would be an important step in understanding *curiosity* in deeper details.
- Today, this mental state is mainly subjectively measured using questionnaires, but two papers studied *curiosity* and learning with fMRI [1,2].
- Our goal is to estimate *curiosity* with objective measures using Electroencephalography (EEG) and body sensors

Material: Measures

Objective

- Electroencephalography (EEG)
- Skin Conductance
- Electrocardiography (ECG)

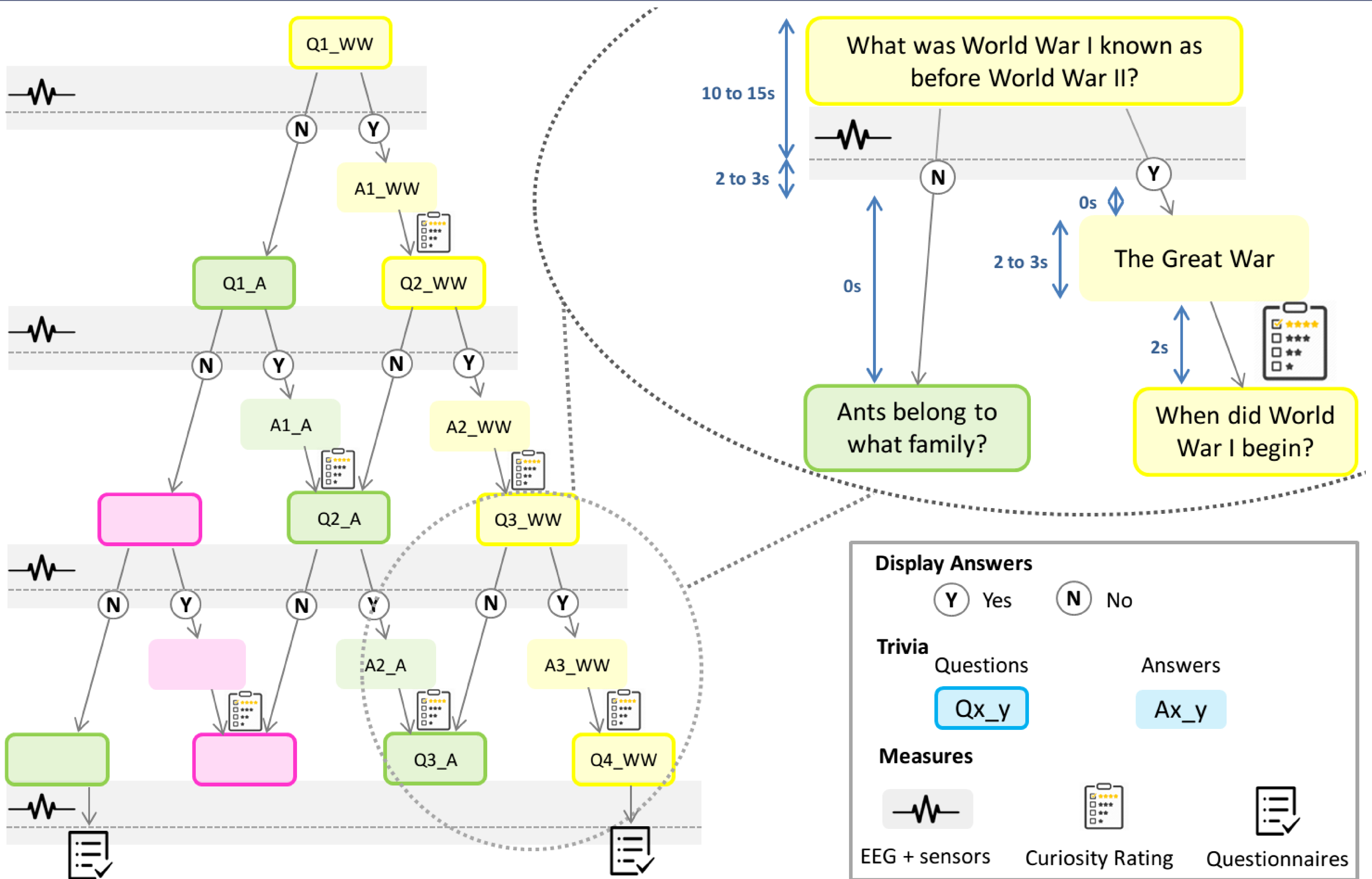
Subjective

- Curiosity trials Rating
- Questionnaires (curiosity [3], Intrinsic Motivation [4], Flow [5])

Method

- A series of Trivia questions is displayed to each participant, in order to get 2 types of trials, i.e. curiosity trial (CT) & no-curiosity trial (NCT). After each question presentation, the participant can choose to:
 - ▷ display the answer and push forward on this category, the trial is tagged as CT
 - ▷ skip the answer and change category, the trial is tagged as NCT

Trivia-questions presentation system



References

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- 4 F. Guay, R. J. Vallerand C. Blanchard (2000). On the Assessment of Situational Intrinsic Motivation Scale (SIMS). Motivation and Emotion
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