

# Time-based event expectancy in the wild

Thema:

Time-based event expectancy in the wild

Art:

BA

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## Hintergrund

The results of laboratory studies tend to have a lower ecological validity, so the generalizability of the studies can be questioned [1]. The step from laboratory studies to in the wild studies is therefore necessary and thus represents a link between research and application, since it is trying to implement what has been researched. A similar trend can be observed in the field of cognitive temporal research. One Phenomenon in this area is called specific temporal expectancy. This paradigm describes, that if a stimulus-response event is often coupled with a specific foreperiod, the response performance of this event after this foreperiod is improved [2]. First experiments investigating this effect, used a graphical user interface on which two geometric shapes could be seen [3], followed by an experiment with gamified elements, the user interface showed a donkey in a field chasing a carrot [4]. This gamification made it feel less like an experiment and more like a game, more natural. In the context of a research seminar of the University of Regensburg the effect could be found in real games, although still in a controlled environment. Now the consideration is to go the next step and to investigate the effect in a less controlled environment, to achieve a higher ecological validity and therefore greater generalizability. So, the idea is to investigate whether the effect of specific temporal expectancy occurs under these conditions and whether it has an impact on the player's performance. Finding these effects would clarify the general importance of specific temporal expectation in the context of games and suggest new approaches for game designers. More specifically, to what extent game developers could adopt this phenomenon and use it for certain game elements.

## Zielsetzung der Arbeit

The goal of the work is to extend the results of previous laboratory studies in a more naturalistic setting, by having the subjects run the experiment respectively game over the internet from home with their own setup. This is done by developing a game that follows the paradigm of specific temporal expectancy and is playable through the web browser. Thereby, the necessary data shall be

logged while playing the game and a questionnaire shall be filled out at the end. Thus, the research question is whether the effect of specific temporal expectancy occurs due to a higher ecological validity and whether a better performance accompanies it.

## Konkrete Aufgaben

- Literature research regarding specific temporal expectation and the difference between laboratory and in-the-wild studies.
- Prepare the experimental setup
  - Build a Prototype
  - Implement a log system
  - Implementation of a questionnaire at the end
  - Make the experiment remotely runnable
- Conduct the experiment
- Evaluate and analyze the results
- Summarize results and write the thesis

## Erwartete Vorkenntnisse

- Experience with Unity (C#)
- Understanding of game design
- Data analysis

## Weiterführende Quellen

[1] Rogers, Y., & Marshall, P. (2017). Research in the Wild. Synthesis Lectures on Human-Centered Informatics, 10(3), i-97. [2] Thomaschke, R., Kiesel, A., & Hoffmann, J. (2011). Response specific temporal expectancy: Evidence from a variable foreperiod paradigm. Attention, Perception, & Psychophysics, 73(7), 2309-2322. [3] Annika Wagener and Joachim Hoffmann. 2010. Temporal cueing of target-identity and target-location. Experimental Psychology (2010). [4] Marina Kunchulia, Tamari Tatishvili, Nino Lomidze, Khatuna Parkosadze, and Roland Thomaschke. 2017. Time-based event expectancies in children with autism spectrum disorder. Experimental brain research 235, 9 (2017), 2877-2882.

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