How do naturalistic non-driving-related tasks influence Take-Over time and quality during highly automated driving?

A simulator study (N=20)

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**DYNAMIC DRIVING SIMULATOR**

**TAKE-OVER SCENARIO**

- Soft Take-Over: Beginning of drag torque
  - 600 m
  - -4s

- Hard Take-Over: Outfall of lateral vehicle guidance
  - -2s

- Beginning of the curve
  - 0s

**RESULTS**

- Mean Take-Over times per task
- Mean criticality ratings per task

- Take-Over parameters of the tasks varied substantially and differed significantly from the „No task” condition
- Subsequent analyses indicated that hand occupation and gaze direction had an important impact on Take-Over parameters
- Subjective criticality ratings increased with Take-Over times
- The Take-Over scenario turned out to be insufficiently critical to produce any substantial differences in the objective driving data
- To clarify the influence of task characteristics on Take-Over measures, further studies with systematic task variation are needed

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