

Environmental Factors Interact with Individual Differences to Influence Judgements of Time

Hopkins, M, Reppa, I., & Reed, P.
School of Psychology, Swansea University

Introduction

Using the classic **temporal bisection task** (Reed & Randell, 2014), we examined how a **clicker train** (Wearden, Win & Philpott, 1999) can interact with **schizotypy** to influence judgements of time.

Key Finding

While the clicker was effective for all participants, but less so for those with high schizotypy, especially on the Cognitive Disorganisation (CD) scale.

Methods

Participants (Ps): $N= 65$ (51 female), $M_{age}=21.8$ ($SD=6.2$)

Materials: The to be timed stimulus was a black 4cm X 7cm rectangle. The clicker train was 5 second train of clicks, at 500Hz with 5 ms between clicks

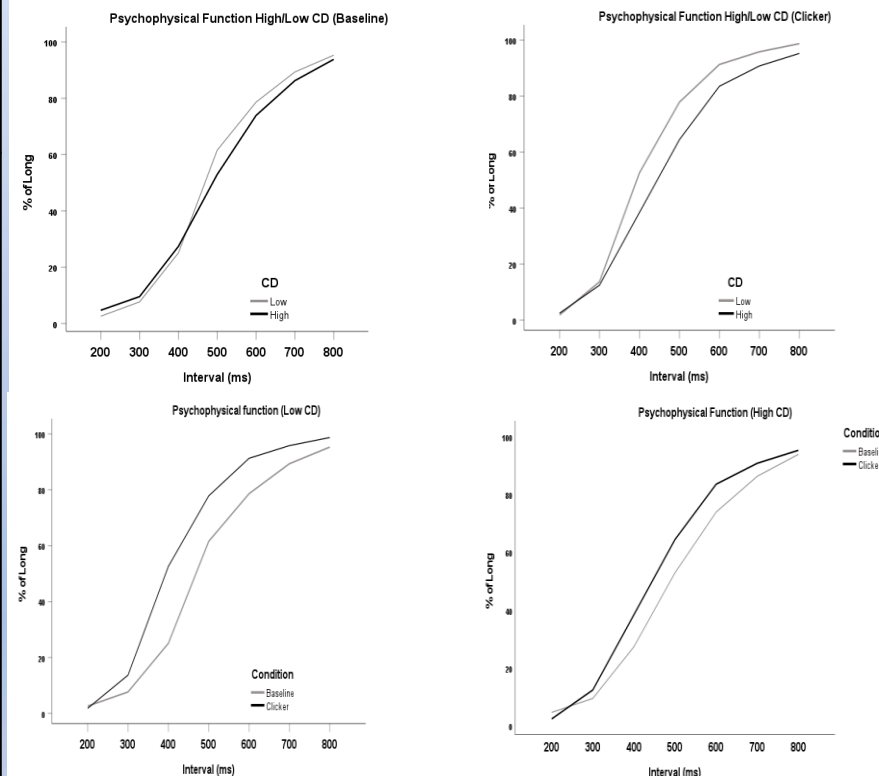
Design: Independent variables were **Interval** (with 7 levels from 200-800) and **Condition** (baseline vs. clicker) were manipulated within-participants, yielding 14 conditions. There were 280 trials with 20 trials per condition. The dependent measure was percent of long responses. Schizotypy was measured with the O-LIFE(B) measure (Mason, 2005).

Procedure: Training phase: Participants were shown 5 trials of long and 5 of short durations. **Test phase.** For the baseline condition, Ps saw visual stimulus for one of 7 intervals and decided whether the stimulus appeared for a short or long time. For the clicker condition, the click-train preceded each stimulus.

Analysis and Results

7 x 2 (Intervals x Condition[baseline, clicker]) ANOVA with CD as a between-participants factor.

*Significant 3-way interaction, $F(6, 366) = 2.153$. $p < .47.$, $\eta^2 = .34$.



Conclusion

In the context of SET, the results showed that the click-train shifted the psychophysical function to the left, in accordance with Wearden, Win and Philpott (1999) which suggests the pacemaker emits more ticks, likely due to arousal.

For High CD, the clicker was less effective. **Why?**

Schizotypy is associated with attentional deficits (Lenzenweger, Comblatt and Putnick, 1991). The 'switch' component of SET is said to be mediated by attention and could mean schizotypy subjects' switch is affected by attention.

In terms of Zakay and Block's (1990) Attentional Gate Theory, the switch is served by an 'attentional gate'. Once again, it could be the case that high schizotypy subjects' 'gate' is the cause of clicker ineffectiveness. Research is ongoing to examine this.

References

- Lenzenweger, M. F., Cornblatt, B. A., & Putnick, M. (1991). Schizotypy and sustained attention. *Journal of Abnormal Psychology, 100*(1), 84–89. <https://doi.org/10.1037/0021-843x.100.1.84>
- Mason, O., & Claridge, G. (2006). The Oxford-Liverpool Inventory of Feelings and Experiences (O-LIFE): Further description and extended norms. *Schizophrenia Research, 82*(2–3), 203–211. <https://doi.org/10.1016/j.schres.2005.12.845>
- Reed, P., & Randell, J. (2014). Altered time-perception performance in individuals with high schizotypy levels. *Psychiatry Research, 220*(1–2), 211–216. <https://doi.org/10.1016/j.psychres.2014.08.007>
- Wearden, J., Philpott, K., & Win, T. (1999b). Speeding up and (. . .relatively. . .) slowing down an internal clock in humans. *Behavioural Processes, 46*(1), 63–73. [https://doi.org/10.1016/s0376-6357\(99\)00004-2](https://doi.org/10.1016/s0376-6357(99)00004-2)
- Zakay, D., & Block, R. A. (1996). The role of attention in time estimation processes. *Time, Internal Clocks and Movement, 143*–164. [https://doi.org/10.1016/s0166-4115\(96\)80057-4](https://doi.org/10.1016/s0166-4115(96)80057-4)