

# Caught by Design?

## A Differentiated Perspective on Digital Decision Making Through the Influence of Deceptive Design Patterns

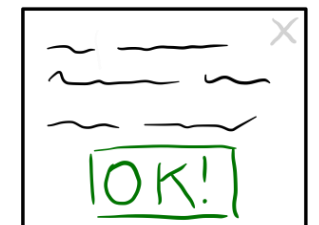
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### BACKGROUND

**DECEPTIVE DESIGN PATTERNS (DDP):** digital design structures that influence user behavior in the interest of companies – often contradictory to users intention (Brignull, 2023)

 promote fast, impulsive decisions (e.g., by generating social pressure, exploiting biases, capturing attention; Monge Roffarello et al., 2023)

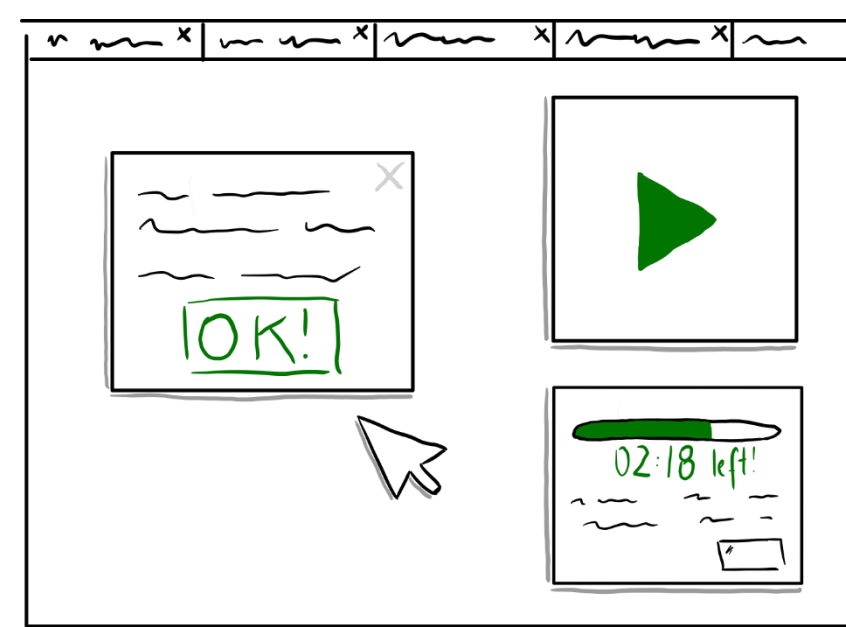
VS

 increase the complexity of decisions (e.g., by hiding information, adding extra barriers; Mathur et al., 2021)

**CONSEQUENCES:** increased acceptance of unwanted offers and loss of money & data, increased decision time, negative emotions (EC, 2022; Luguri & Strahilevitz, 2021)

*digital decision making* = DDPs embedded in complex decision space: many subsequent decisions, conflicting interests, time pressure, ... (cf. Bhoot et al., 2020)

**AIM:** separating deceptive potential and complexity of the specific design vs. „contextual“ factors of DDPs

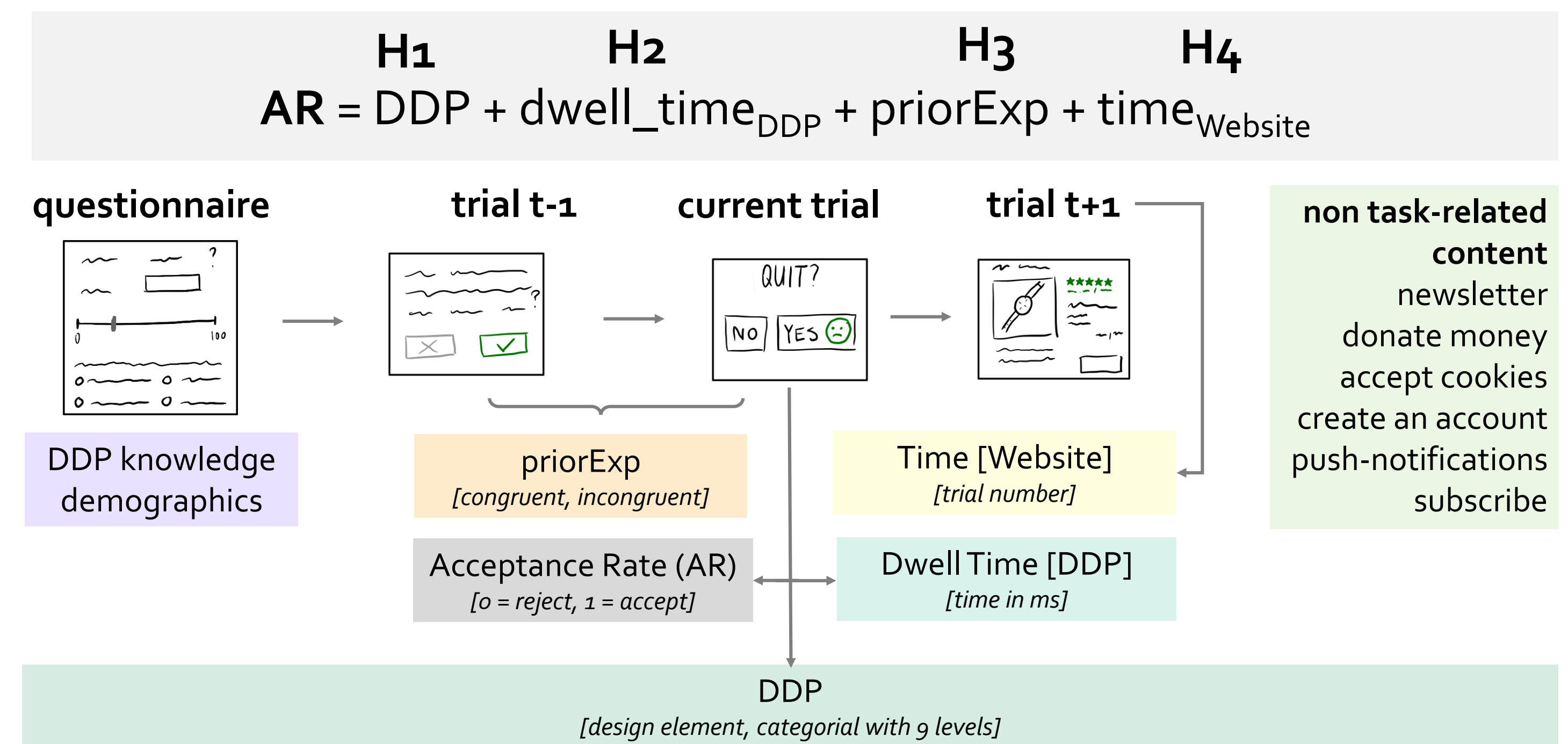


### MATERIALS AND METHODS

Online Experiment | Nov '23 – Mar '24 | pre-registered at OSF: <https://osf.io/72nq6>

**EXPERIMENTAL TASK:** Visit a news-website and decline all not task-related offers!

Subjects are repeatedly exposed to pop-ups with non-task related content (=offers / requests for consent).



### RESEARCH QUESTION

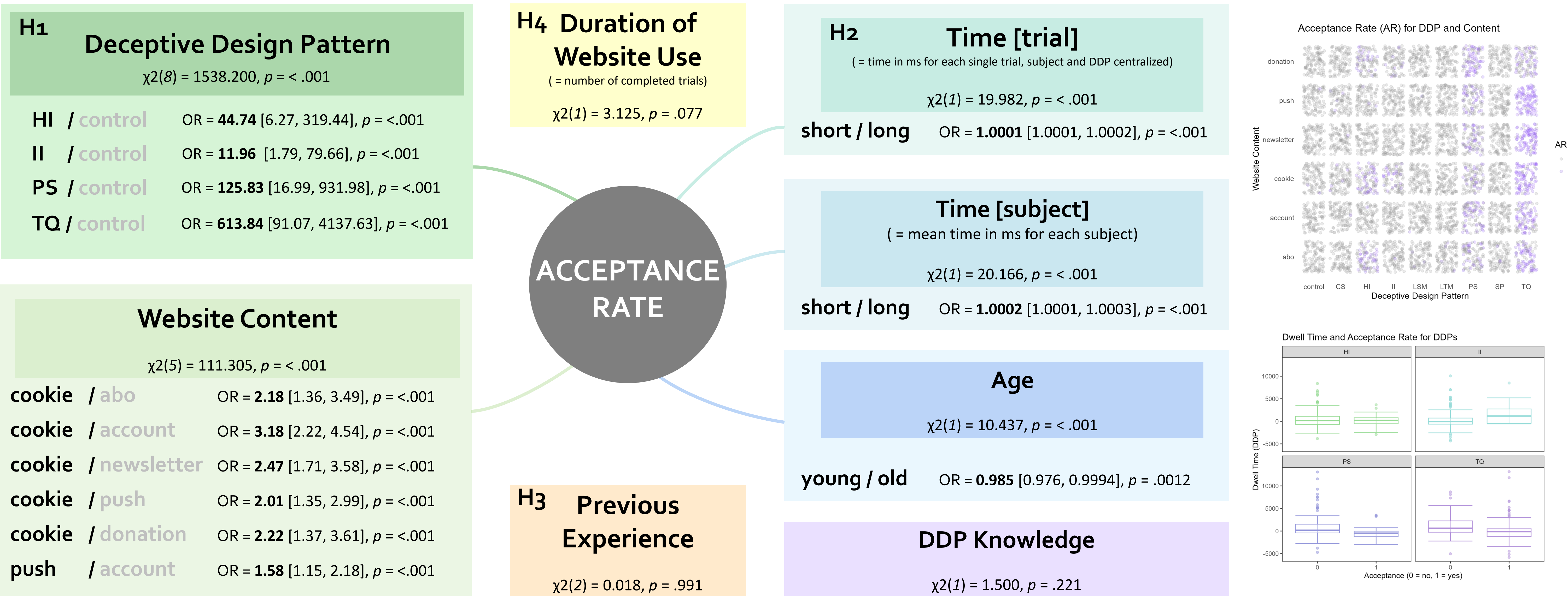
How do DDPs influence digital decision-making behavior?

- H1 | design itself
- H2 | dwell time on a DDP
- H3 | repeated exposure to the same DDP
- H4 | dwell time on a website

**Acceptance Rate**  
 [= accepting not task-related offers]

### RESULTS

n = 112 | age: M = 28.05 (SD = 12.39) | students: 78.76 % | education: 76.79 % bachelor or master degree | Analysis: logistic regression and odds ratios based on generalized estimating equations, Bonferroni-Holm correction for multiple testing



### DISCUSSION

**highest impact on acceptance:** DDP [II, HI, PS, TQ], content [cookie-banner], dwell time [less time ~ more acceptance] and individual differences [age and average dwell time]

**DDP:** cognitive (TQ), motoric (PS) and visual (II, HI) barriers crucial – motivational and emotional ones less influential

**time:** more time may help to reduce acceptance, but not always the determining factor

**interindividual differences:** complex associations (age ~ increased dwell time, higher dwell\_time ~ lower acceptance rate, higher acceptance rate ~ age) -> assessing individual characteristics (e.g., digital literacy, ...)

**content:** even in a clear defined setting are cookie banners not perceived as DDPs

→ new decision-based ontology of deceptive patterns: increases vs. decreases complexity, necessary skills to resist

→ design of DDPs itself & interindividual differences seem crucial in complex digital decisions

### References

Bhoot, M. A., Shinde, A. M., & Mishra, P. W. (2020). Towards the Identification of Dark Patterns: An Analysis Based on End-User Reactions. 24–33. <https://doi.org/10.1145/3429290.3429293>  
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 Mathur, A., Kshirsagar, M., & Mayer, J. (2021). What Makes a Dark Pattern... Dark?, 82, 1–18. <https://doi.org/10.1145/3411764.3445610>  
 Monge Roffarello, A., Lukoff, K., & De Russis, L. (2023). Defining and Identifying Attention Capture Deceptive Designs in Digital Interfaces. Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems, 1–19. <https://doi.org/10.1145/3544548.3580729>