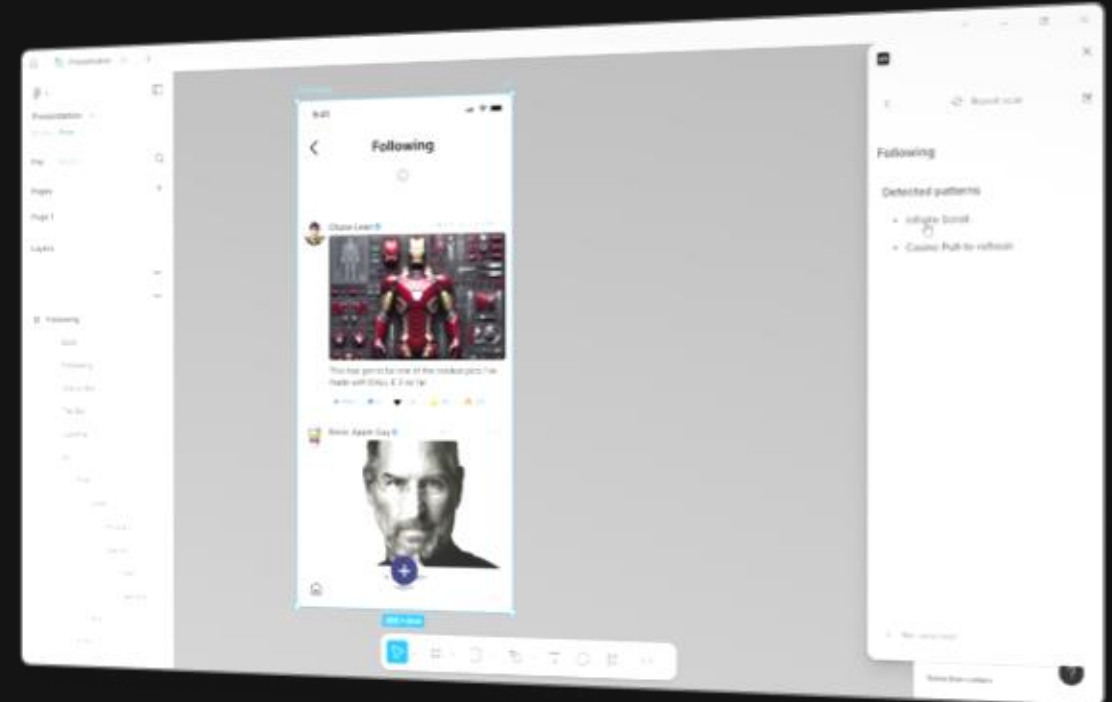




ACM CSCW 2026

Digital Wellbeing by Design

Safeguarding End-Users' Time and
Attention in UI/UX Practices



Alberto Monge Roffarello, Luigi De Russis, Massimiliano Pellegrino



Politecnico
di Torino





None of this happens by accident



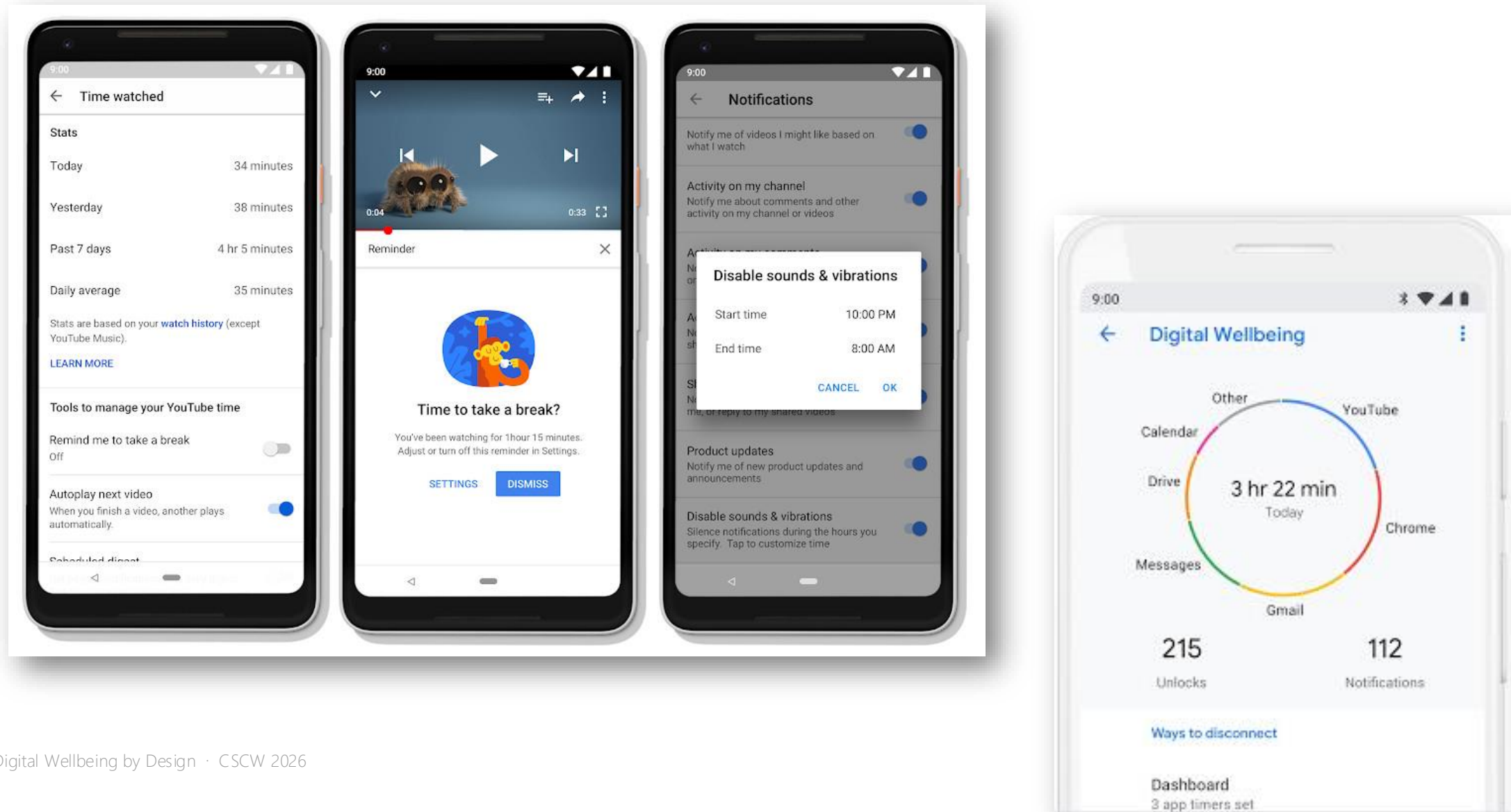
Infinite scroll



Casino pull-to-refresh

MOTIVATION

We handed the problem to the user



We handed the problem to the user

THE USUAL ANSWER

Digital Self-Control Tools

- Reduces wellbeing to a number of minutes
- High dropout, limited long-term effect
- Places the burden on the person being designed against

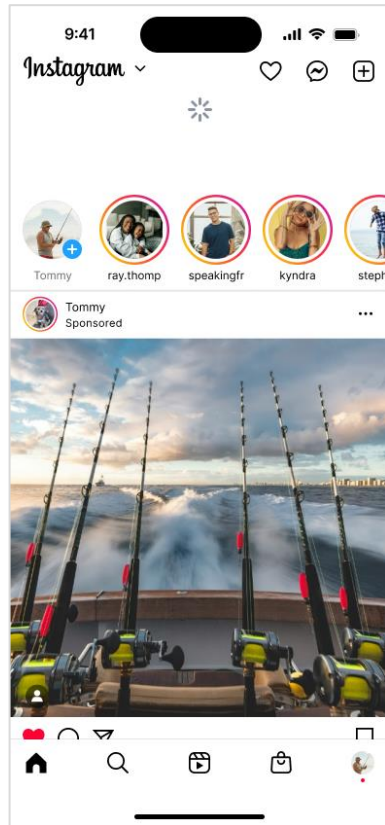


Research Question

How can we raise designers' awareness of attention-capture patterns — and surface credible alternatives — early and inside the tools they already use?

A 'Digital Wellbeing Assistant' within Figma

UI MOCKUP



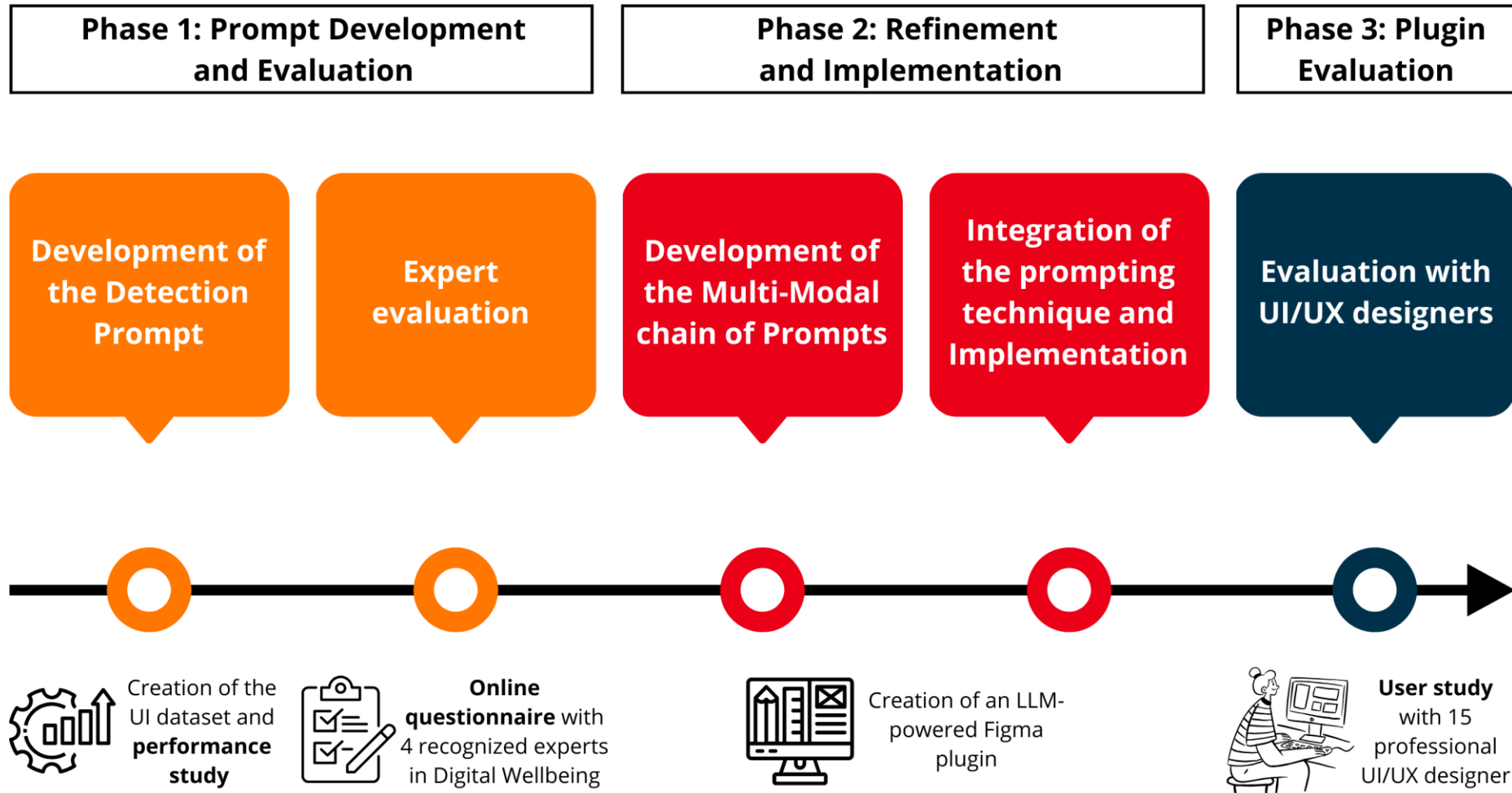
LARGE LANGUAGE MODEL



FEEDBACK WHILE DESIGNING

- **Attention-capture pattern**
- **Alternative design**

Three phases



Building the detection prompt

1 Dataset

10 Figma mockups recreated from UIs used as ACDP examples in HCI literature, e.g., Instagram and TikTok.

2 Model

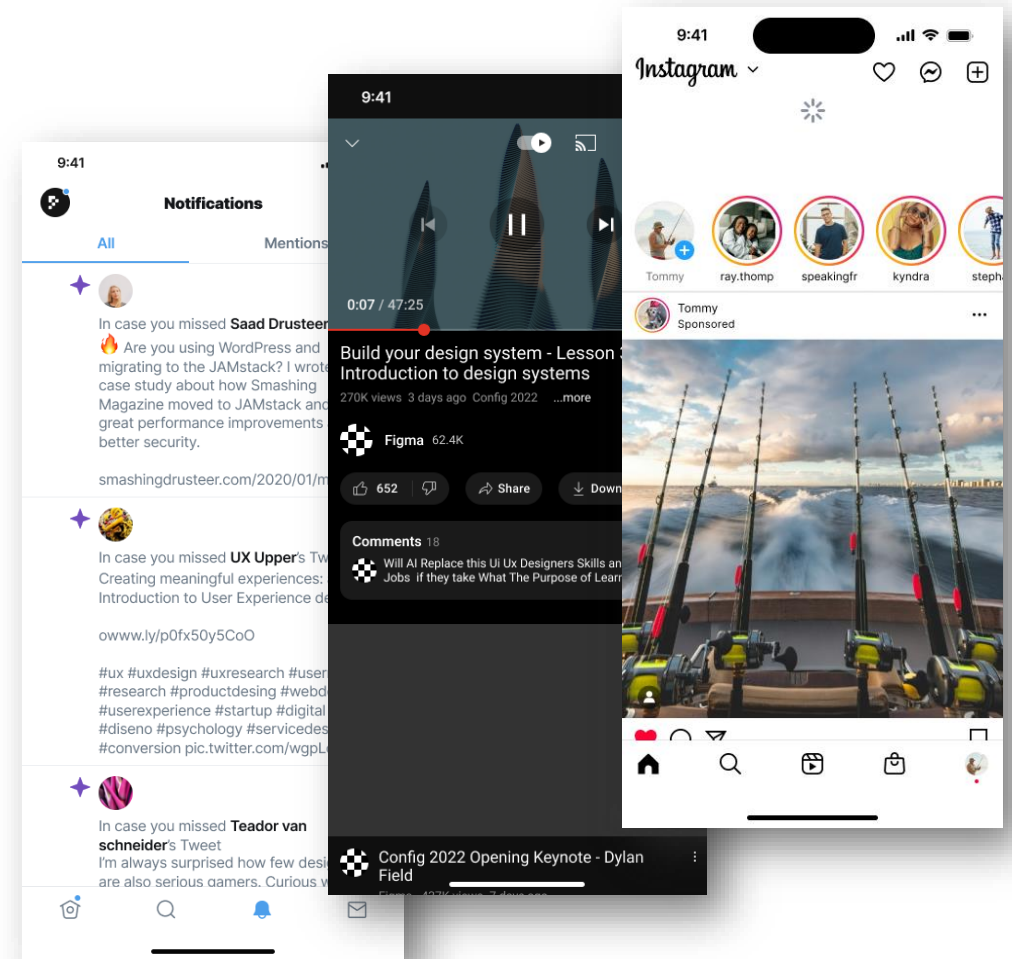
GPT-4o, chosen for multi-modal input and prior evidence on UI analysis.

3 Prompt

System message carries the 11-ACDP taxonomy; for each detection the model returns pattern name + at least two alternative designs.

4 Test

2 x 3 configuration: JSON vs. image input, at temperature 0, 0.5 and 1.



Expert evaluation

THE PANEL

- E1 Associate Professor**
Dark patterns in Japanese apps · 3–5 yrs
- E2 Doctoral Researcher**
Dark patterns and vulnerable populations · 3–5 yrs
- E3 Postdoctoral Researcher**
Dark patterns in social media · 3–5 yrs
- E4 Student, member of the deceptive.design team**
Ethical design practices · 1–2 yrs

Recruited through the **Dark Patterns Research and Impact** community



~90 minutes online questionnaire

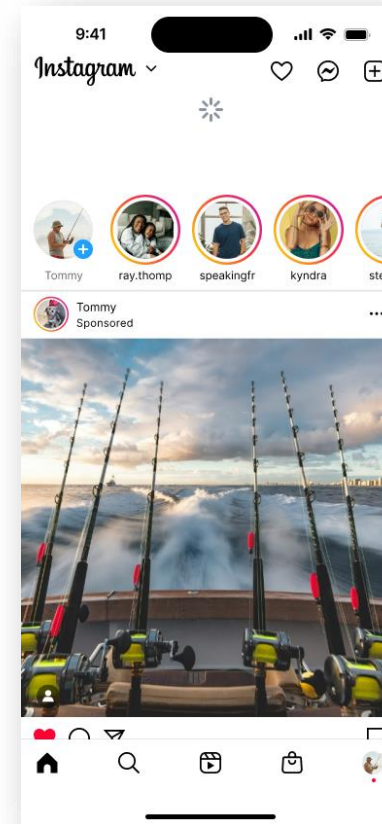
DETECTION

The tool detected Casino Pull-to-refresh:

"The pull-to-refresh animation encourages users to repeatedly refresh the feed in hopes of seeing new and appealing content, similar to a slot machine. This can lead to excessive use and loss of time."

Accuracy
(Likert scale + explanation)

Severity
(Likert scale + explanation)



Expert evaluation

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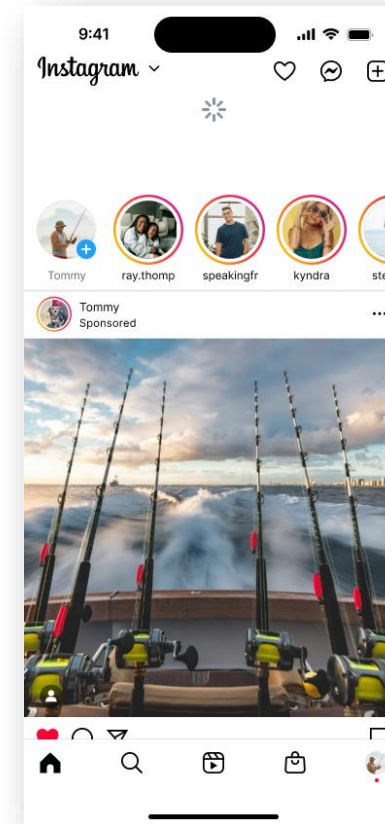
ALTERNATIVES

The tool suggests to use
Scheduled Content
Updates:

"Update the feed at regular intervals and notify users when new content is available. This reduces the need for users to manually refresh and helps them manage their time better."

Helpfulness

(Likert scale + explanation)



Main findings

1

A detection needs a location

70% of detections were perceived as accurate, but experts warned that a static screenshot hides the temporal behaviour that defines many patterns.

-> bounding boxes on the elements that triggered each detection.

2

Managing disagreements

Two experts found patterns the plugin had missed, others rejected detections as over-reading the screen.

-> 'flag as incorrect' to drive future scans.

3

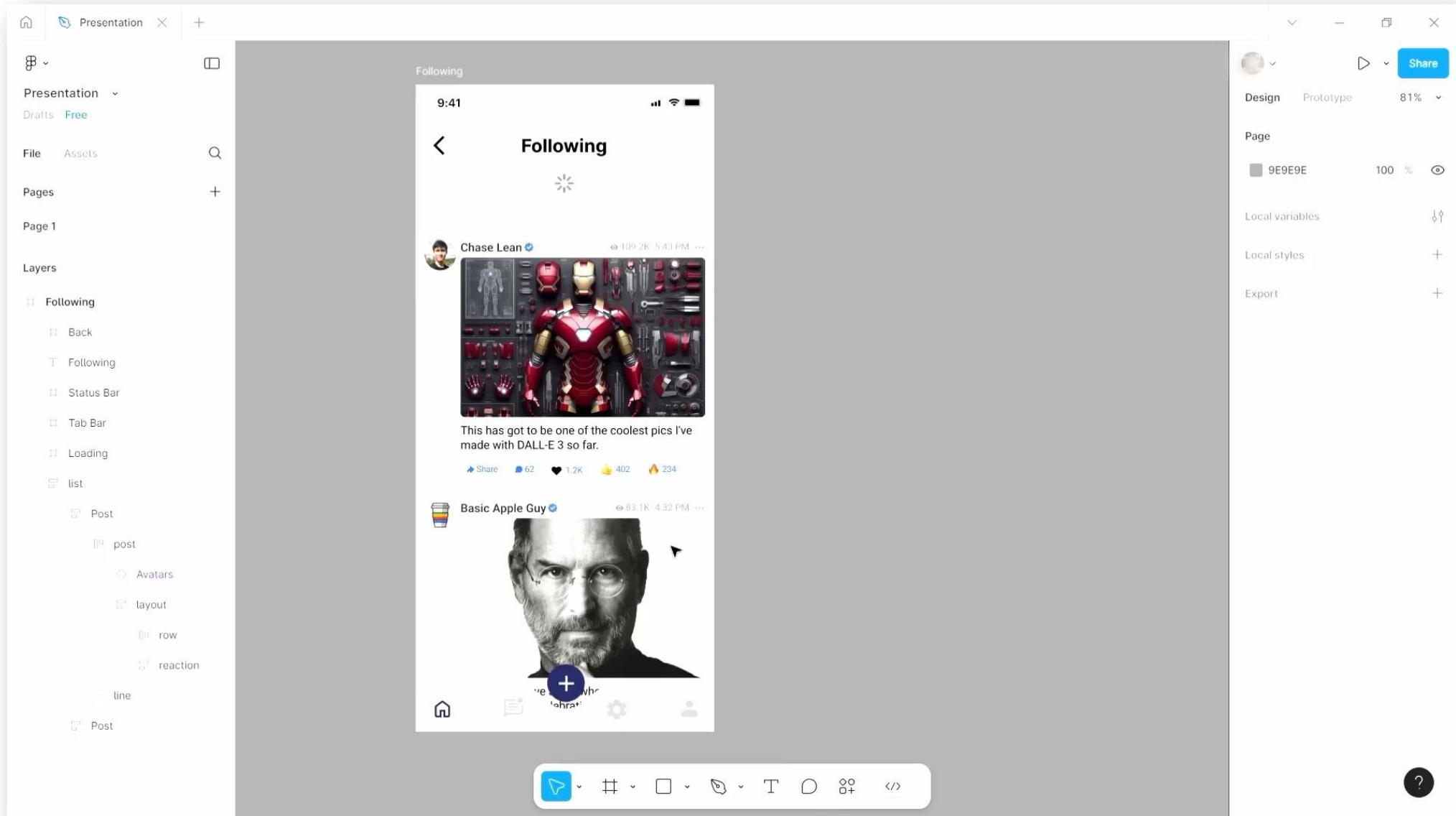
An alternative design can backfire

Habituation may simply absorb the friction a fix adds, e.g., a 'load more' button can become the next pull-to-refresh.

-> alternatives are framed as proposals to negotiate

PHASE 2

The Figma plugin



Evaluation with UI/UX designers

15

professional designers
10 men, 5 women

32.5

mean age (SD 8.94)
2–20 years of experience

49

minutes per session (avg)
remote, via Zoom

4

UI mockups per participant
1 free-usage + 3 evaluated

FREE-USAGE SESSION

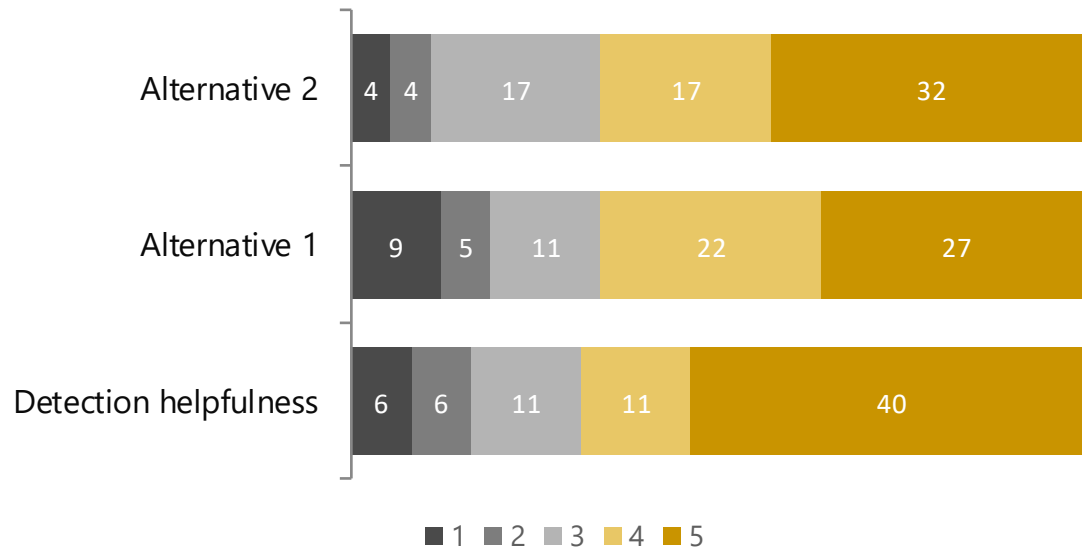
Modify **a mockup** freely with the plugin's help to explore its functionality.

EVALUATION SESSION + INTERVIEW

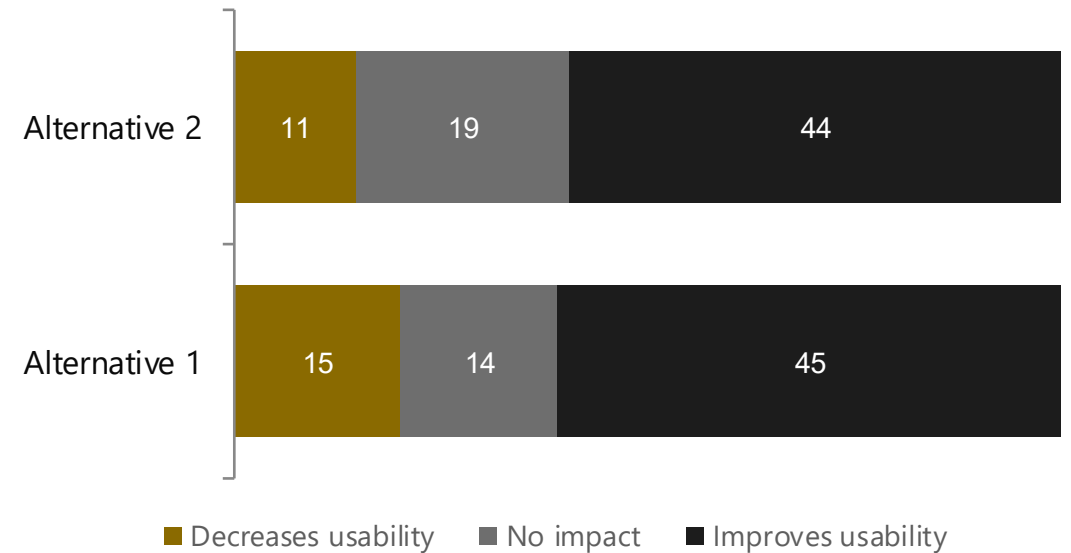
Scan **three further mockups** and rate **detection helpfulness**, **alternative helpfulness**, and the **usability impact** of each alternative. Then a semi-structured interview, thematically analysed.

Quantitative results

Helpfulness (1 = not at all, 5 = very; 74 responses each)

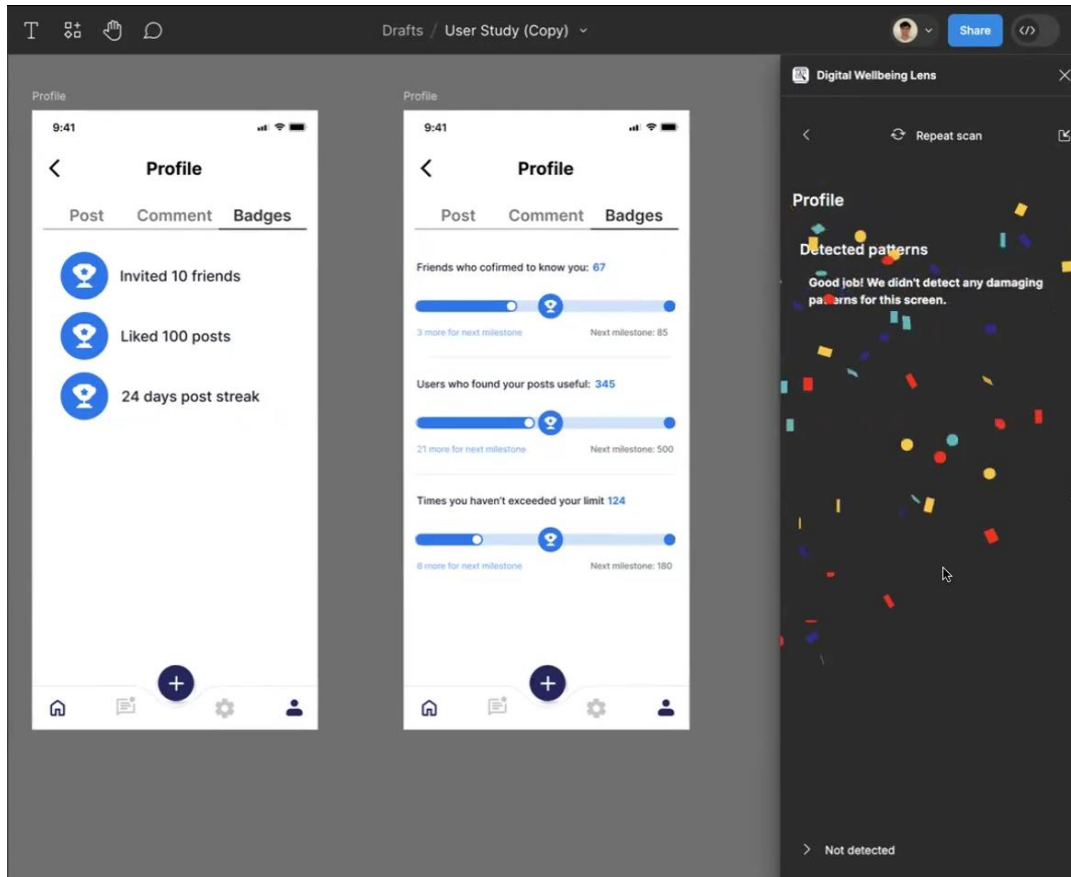


Perceived impact on usability vs. the original pattern



54% of detections very helpful · 66% of alternatives helpful or very helpful · ~60% expected to improve usability

An example of how participants redesigned the mockups



Grinding (left) is transformed into meaningful milestones such as **times you haven't exceeded your limit** (right)

P8

What designers valued, and what worried them

VALUED

Workflow + education

A way to learn to recognize ACDPs.
P8 suggested it for design courses.

Catching unintentional use

"You do it mostly out of habit ... it pushes me much more to design a healthier app" (P8)

WORRIED

AI mistakes and blind trust

No warnings, no confidence levels:
"it doesn't put doubts on things"
(P1); some felt accused.

Business constraints

Engagement KPIs sit above the designer and force them to use ACDPs.

💡💡 *Obviously, as a UX designer you would want to avoid them all the time, however, then someone from management comes along with KPIs to bring to the result [...] So it's definitely interesting, but I wonder who has the luxury of saying let's reduce the outcome.*

P10

A boundary object

The plugin gives designers an artifact they can take into a conversation with product managers — while alternatives are still negotiable.

A form of soft resistance...

The plugin supports designers who already want to act on values at work, making attention harms harder to dismiss in design deliberations

Complemented by regulation

Tools alone cannot resolve a structural conflict. ACDP harms are still, largely, without remedy — but existing EU instruments offer plausible hooks.

TAKE AWAY

1 **Digital wellbeing can be a design-time concern**

An LLM assistant inside Figma detects attention-capture patterns and proposes functionally equivalent alternatives.

2 **The value is the conversation it starts**

The primary role of the plugin is sparking negotiation about design trade-offs inside organisations — supported, ideally, by regulation.



Try the plugin!

Thank you!

Alberto Monge Roffarello · e-Lite, Politecnico di Torino · alberto.monge@polito.it